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Abul Barkat
Editor

Bangladesh Economic Association
4/C, Eskaton Garden Road, Dhaka-1000
Phone: 880-222225996
E-mail: bea.dhaka@gmail.com
Website : www.bea-bd.org

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Professor Dr. Abul Barkat
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Editor's Note

The Bangladesh Journal of Political Economy (BJPE) accommodates only the selected papers submitted for publication. All the papers are duly reviewed by internal and external reviewers with remarkable endurance and finally concurred by the Editorial Board for publication.

The contemporary world is governed by a small fraction of people and policymakers. This age is characterised by many things detrimental to the existence of organised human society. These include rising inequality (wealth, asset, income, health, education), multidimensional poverty, various forms of fundamentalism and extremism, war and war-like situations, weaponisation of economies, climate catastrophe, artificial intelligence, and financialisation of the economy politics, unjust globalisation, authoritarian regimes, xenophobia. For her existence and progress, the organised human society shall endeavour to do everything to eliminate all the above-stated. In doing so, we must search for enlightened persons and institutions who will stress a new arena of building a decent society and explore how to develop a unique way of resisting the assaults of those who think for the ordinary people and accordingly mould the ideas of transforming human deprivation into humane development and related activism.

Interlacing more implicative ideas and writing with a deep understanding argues for a compelling and compassionate study of the ground realities that will rightly shape the course of human development history. We are hopeful that this journal will help monitor the current global debates in development thinking and practice from a broad-based interdisciplinary perspective. Besides, it will keep arduous and interested writers in touch with the cutting edge issues of lasting human development, thinking action and sound strategies. More importantly, we are confident, the papers are censorious, innovative, and thought-provoking, written with the best endeavour by a galaxy of eminent scholars and young, dynamic and talented authors. This journal, as expected, will be an essential resource for social science faculties and research institutions, international development agencies and NGOs, policymakers and analysts, graduate teachers and researchers who have always intended to build up a decent society.

We express our heartfelt gratitude to the credible authors, reviewers, and members of the Editorial Board of the Journal and others who have toiled much to raise the standard of this issue.

Abul Barkat, PhD
Editor, Bangladesh Journal of Political Economy
President, Bangladesh Economic Association

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A Political Economy Treatise on 'Value of Things'

Abul Barkat*

Abstract

This article- A Political Economy Treatise on 'Value of Things'- is an attempt to critically discuss the essence of the contentious concept of 'value' from the perspective of the history of economic thoughts. The author first presented a few critical issues about the 'value of things' at a Convocation of the Cost and Management Graduates on 26 December 2019, under the auspices of the Institute of Cost and Management Accounts of Bangladesh (ICMAB)-2019. Since that was the Convocation of the graduates in the disciplines of costs and accounting, the speech's fundamental purpose was to argue in favour of the need for raisingmultidimensional issues of the value ofthings. It was done keeping in view the political economy perspective. The question raised and arguments forwarded revolved around valuing things – an area of relative ignorance and neglect.This article is an expanded version of the Convocation Speech. It aims to deal with the essence of the following relevant categories: Value- use-value and exchange value, value versus utility, cost and costing, cost and disbenefit, discourse on values by various schools of economics.In the end, the paper forwards a line of thoughts to think about the value of things in valuing things.

JEL Classification *B1 · B2 · B3 · B5 · B41· D46 · P16*

Keywords *Political Economy · Economic Thoughts · Heterodox Approaches · Value Theory · Economic Methodology*

* Professor & former Chairman, Department of Economics, Professor & Founding Chairman, Department of Japanese Studies, Dhaka University, Bangladesh. E-mail: barkatabul71@gmail.com

Introduction

"Freethinkers are those who are willing to use their minds without prejudice and without fearing to understand things with their own customs, privileges, or beliefs. This state of mind is not common, but it is essential for right thinking."
- Leo Tolstoy (1828-1910)

It is both pride and pleasure and a rare opportunity for me – a student of economics – to speak before you – the most enlightened audience of Cost and Management Accountants. Having enjoyed the freedom of self-selection and taking into account the knowledge-domain of Cost and Management Accountants (CMAs) – I have landed to talk about 'VALUE' or 'Value of things', a mostly unexplored and much debatable subject area in economic sciences. After receiving the invitation from Mr Abul Kalam Mazumdar, FCMA, the President of the Institute of Cost and Management Accountants of Bangladesh (ICMAB), I gave some thoughts about the most appropriate theme to discuss as the Convocation Speaker.

'Value of things': Why important?

"A good decision is based on knowledge and not on numbers."
- Plato (427-347 BCE)

"All men by nature desire to know."
- Aristotle (384-322 BC)

What prompted me to choose the theme 'Value' or 'Value of things'? Let me cite a few plausible reasons:

First, you are the experts on 'costing things'. You do costing things based on the price of things- either in market price or imputed price or otherwise. However, is it possible to calculate **realcost** without knowingthe'**value of things**'? The scientific answer is: NO. It is simply because value and only value shall form the basis for true cost.

Second, the *benefit* of an 'appropriate' costing is high. However,the *disbenefit* of an'inappropriate' costing is much higher and maybe highly counterproductive at times, leading to business-management inefficiency-in-perpetuity.

Third, the cost of things appears to be an easy undertaking at first glance, and it is just in appearance. However, in reality, one has to confront many "unknown unknowns" in the *true costing of things*. Here, one should remember that the "illusion of knowledge is more dangerous than ignorance". So "*true* costing" or 'real costing' of things is never an easy endeavour.

Fourth, as Cost and Management Accountants, we are professionally responsible and responsive to analyse'true' cost of things, cost efficiency, allocative efficiency of resources, cost-benefit, forecast possible future directions, indicate nature and extent of uncertainty and risks, and forward policy suggestions and direction based on scientific methods and assumptions. However, when we conduct costing exercises based on available (published) information only, there are many critical cost components or elements for which information is not (seldom) available- for example, elements of social cost or political cost or ecological cost. The outcome of such exercise would be partial- a half-glass full or the same, a half-glass empty- or flawed. Alternatively, if our *critical assumption* is wrong, the decisions suggested or forecast made- cannot be correct.

Fifth, the *cost of things* is necessary for economic or business reasons and social, cultural, ethical, and political reasons. Economic cost-benefit calculus may cause moral corruption. For example, based on economic cost-benefit exercises on addressing the issue of carbon emission,we – the economists or the cost accountants – recommend either taxing carbon or a quota on carbon emission with trading of emission allowances among producers. The message to firms seems to be that emitting carbon and contributing to climate change is not a problem as long as you pay a fee. What would you say if I say: By suggesting this based on the outcome of our cost-benefit analysis,"we are legitimising pollution(!)".

Sixth, there are deep-rooted social aspects and consequences of costing things. Take the example of corrupt practices (or just corruption). How would we estimate the Value of corruption in costing things? It is most likely that corruption costs are high, and the likelihood is also high because this common sense gets lost in costing costs or benefits. What are the *cost heads* and the *disbenefit heads* where we need to value corruption? Moreover, how much to put or allocate by context. Here, when we are talking about "zero tolerance to corruption" (as National Policy), it is worth doing heuristic exercises (or intuitive thinking) or simulations, which we do not do either due to convenience or due to inherent complexities or due to many 'other'reasons (which I call "unknown unknowns").

Based on the above stated, it can be safely concluded that the*truecosting* exercise and responsive management accounting necessitates understanding the essence of the *value of things*. However, we know very little about value, what constitutes value, and who creates value. On the other hand, we also know that putting or calculating the *correct value* is perhaps the most unresolved issue in the relevant field of science – be it economics or accounting sciences.

'Value': Raising the right question

"He who knows all the answers has not been asked all the questions."
- Confucius (551-479 BCE)

"Everyman takes the limits of his own field of vision for the limits of the world."
- Arthur Schopenhauer (1788-1860)

Sometimes, it is more important to raise the right question than answer it in the history of knowledge. I do not think it would be inappropriate to say that the category 'value' is a subject matter of thoughts in Hard-coreor Mainstream Economics[1]while putting the cost against an item of value is the domain of Accountants or Accounting Science. So, we need to know the 'value' of a thing before costing the same. Otherwise, it would be inappropriate or a half-glass-full thing or grossly misleading. Here lies the foundational causal problem of accurate costing. It implies: Unless the 'value' of a thing is not resolved, 'costing' of the same would be partial.

I see at least two groups of problems worth investigating in valuing things. They are as follows:

The **first group of problems**

What is 'value'? What determines value? Who creates value? How should the value be estimated?

The **second group of problems**

How successful is economic science in evaluating value? The science of economics has failed miserably to value things with high value or lots of intrinsic value.[1] Examples include 'value' of consequences of climate change, inequality, work absenteeism, school dropout, not immunising a child, corruption, crime or crime prevention, deaths and disabilities due to preventable causes, and so on.

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1 For details about economist's intellectual failure of valuing values see, Blaug. M (1997). Economic Theory in Retrospect. (5th Edition). Cambridge: Cambridge University Press; Heilbroner, R.L. (2011). The Worldly Philosopher. New York: Simon and Schuster; Capra, F. (1988). The Turning Point: Science, Society and Rising Culture; Roll, E. (1992). A History of Economic Thought. London: Faber and Faber Limited; Fusfeld, D.R. (1982). The Age of the Economist. Scott, Foresman and Company.

'Value': A short discourse

"Study the past if you would define the future."
- Confucius (557-479 BCE)

"The conventional view serves to protect us from the painful job of thinking."
- John Kenneth Galbraith (1908-2006)

The discourse on 'value'- its origin and creation -has a long history. The quest of understanding the essence of value can be traced back to Fan Li (517 BC), Confucius (557-479 BC), Xenophon (430-354 BC), Aristotle (384-321 BC), Plato (380-360 BC), Chanakya (350-275 BC), and then to IbneTahmyya (1263-1328), IbneKhaldun (1332-1406), William Petty(1623-1687), Dudley North (1641-1691), Adam Smith (1723-1790), Jeremy Bentham (1748-1832), David Ricardo (1772-1823), John Stuart Mill (1806-1873), Karl Marx (1818-1883), Alfred Marshall (1842-1924), Lionel Robbins (1898-1984), Paul Samuelson (1915-2009).

The various schools of thought in Economic Sciences hold different views in understanding the ***essence of value-*** who creates and where it is created.These schools are Classical School, Neo-classical, Marxian, Developmentalist, Institutionalist, Austrian, Keynesian, Behavioural (and the present-day Neo-liberal School in the era of globalisation and the 4^{th}-5^{th} industrial revolution). So there isa different kind of Economics. Furthermore, it is a matter of common sense (which is not that common!) that different kinds of Economics will treat 'value' differently. Economics, and for that matter, no discipline, at least in social science, is*value-free*.

Before I enter into the issue of 'value' and 'costing value' or 'valuation of value', it would be logical to provide a one-sentence summaryof each School named above. Because that will give us ample indication about each School's treatment of understanding 'value' and 'costing value'. The one-sentence summary of each School of economics with some guiding clues related to their understanding of value may be as follows[2]:

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2 It is worth mentioning that today's 'economic science', in its origin, was known rightly as 'political economy'. All the writings of the $17^{th}$to 19^{th} century classical economists – William Petty (1623-1687), James Stuart (1713-1789), Adam Smith (1723-1790), Jean Baptiste Say (1767-1832), Thomas Robert Malthus (1766-1834), David Ricardo (1772-1823), Leonard Sismondi (1773-1842), John Stuart Mill (1806-1873), Karl Marx (1818-1883)- were titled Political Economy. A greater detail about pluralistic essence of these schools can be found in Barkat, A. (2017). *ArthonityShayastreeDarsonerDaridro* (Poverty of Philosophy in Economics). Dhaka: MuktoBuddhi Publishers.

1. **Classical School**: *"The market keeps all producers alert through competition, so leave it alone."*

Here, I assume you all know about Adam Smith's'*invisible hand of the market'*. However, let me remind you that Adam Smith (1723-1790), in his classic book, An *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), did not talk much about the so-called invisible hands of the market.Based on his firm belief in the *System of Natural Liberty,* he argued that the creation of maximum wealth emanated through maximum self-interest. Adam Smith talked about the brewer, baker, and butcher, their self-interest, the merchants and manufacturers, division of labour, labour theory of value, perfect competition, and the necessity of interventions to correct the market.

AdamSmith, however,was fully aware of the ill-motives and conspiracy of the merchants and the manufacturers in doing everything to maximise their self-interest reflected in profit-making. He puts it as follows: "It is not from the benevolence of the butchers, the brewers or the bakers that we expect our dinner, but from their regard to their *own self-interest*". In order to maximise profit, the manufacturers and merchants engage in "market conspiracy". Adam Smith famously declared that "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the Publick, or in some contrivance to raise prices".

The proponents of the Classical School (more correctly, the Classical School of Political Economy) dealt with the concept of *value*, among many others. They talked about the labour theory of value (Adam Smith), natural and political value and prices (William Petty), and rents (David Ricardo). However, nonecould identify the differences between the use-value and exchange-value. It was developed subsequently by Karl Marx in his Capital- Volume I (published in 1867). He delved deep into the issues of the theory of labour- abstract and concrete, and the dual nature of labour embodied in a commodity.

2. **Neo-classical School**: *"Individuals know what they are doing, so leave them alone—except when market malfunction".*

I know that you all know about 'market distortions' or market malfunctioning"! We all confront 'market distortion' almost every day.

It is worth noting that the Neoclassical economists succeeded in changing the name of the discipline from the traditional 'political economy' to 'economics'. In determining the *value of a good*, the proponents of the Neoclassical School emphasised the role of demand conditions (derived from the subjective valuation of products by consumers)- as opposed to the Classical School's ideas of supply conditions. Neoclassical economists emphasised that the value- which they called price- of a product also depends on how manypotential customers value the product.It replaces the labour theory of value with the concept of so-called *utility*. With it, the labour theory of value got buried. The Neoclassical School shifted the focus of economics from the sphere of production to consumption, from the collection of distinct classes to a collection of 'rational' and selfish individuals.

3. **Marxist School**: "*Capitalism is a powerful vehicle for economic progress, but it will collapse, as private property ownership becomes an obstacle to further progress*".

For Marxian School, production is the basis of social order. For Marx, society is built upon a base- the *basic structure*, which is economic, or the mode of production comprising production relations (ownership in means of production) and productive forces (labour-power with skills, machinery, technologies). Then upon that basic structure stands the *superstructure* (all ideologies and ideological institutions). Marx was the first economist who developed a complete scheme of the philosophy of the Value of goods and her sources by introducing the concepts of use value and concrete labour, exchange value and abstract labour, dual nature of labour embodied in a commodity, surplus value- absolute and relative, the law of the tendency of the falling rate of profit, business cycle, overproduction, theory of alienation, and the inevitability of the collapse of Capitalism, and the 'expropriation of the expropriators'.

Marx's analysisof the *value of things*is one of the most fundamental discoveries in economics. The essence of the discovery is evident from the following: "The wealth of those societies in which the capitalist mode of production prevails, presents itself as 'an immense accumulation of commodities', its unit being a single commodity.... Every useful thing, as iron, paper, &c., may be looked at from the two points of view of quality and quantity.... The utility of a thing makes it a use-value.... But the exchange of commodities is evidently an act characterised by a total abstraction from use-value.... As use-values, commodities are, above all, of different qualities, but as exchange values, they are merely different quantities, and consequently do not contain an atom of use-value.... When looked at as crystals of this social substance, common to them all, they are— Values. ... A use-value, or useful article, therefore, has Value only because human labour in the abstract has been embodied or materialised in it. ... At first sight, a commodity presented itself to us as a complex of two things— use-value and exchange value. Later on, we saw also that labour, too, possesses the same two-fold nature; for, so far as it finds expression in value, it does not possess the same characteristics that belong to it as a creator of use-values. I was the first to point out and to examine critically this two-fold nature of the labour contained in commodities"[3].

Private property ownership- according to Marx- will become an obstacle to thefurther progress of Capitalism. After almost 150 years of Marx's analysis of Value and Capitalism, even a non-Marxist like Joseph Stiglitzformulates the contemporary-advanced Capitalism as "For the 1%, of the 1%, by the 1%"[4]!

4. **Developmentalist School**: *"Backward economies cannot develop if they leave thingsentirely to the market".*

Developmentalist School is not a unique entity. Some view 'development' as a state or condition (the static view), some others view it as a process or course of change (the dynamic view). Then the logical question would be – irrespective of the static and dynamic views on development- what is their take on the concept of 'value of things'? It is most likely that it depends on how do they define development. Here, it might be helpful to remember three prominent definitions of development. The definitions are as follows: (1) "Development is not purely an economic phenomenon but rather a multidimensional process involving reorganisation and reorientation of the entire economic and social system" (by Michael Todaro); (2) "Development is the process of expanding human freedom. Freedom is the primary goal of development; freedom is also the principal means of development. It is the enhancement of freedoms that allow people to lead lives that they have reason to live" (by Amartya Sen); and (3) "Development is about transforming the lives of people, not just transforming economies" (by Joseph Stiglitz). Based on the above stated on the essence of 'development', it would be appropriate to conclude that development is not a 'class neutral' and 'value free' concept. If that be so, then it would be logical to expect the Developmentalist to have a fair amount of understanding about the 'value of things'. However, most Developmentalistis tight-lipped on it. Here, to get some feel about the necessity of understanding the relationships between development and'value of things', we

3 Karl Marx. Capital: A Critical Analysis of Capitalist Production. Volume 1- Translated by Samuel Moore and Edward Aveling (General Editor: Tom Griffith). (2013), pp.17-22. Hertfordshire: Wordsworth Editions Limited.

4 For detailed discourse about the causes and consequences of rising inequality in 'advanced' capitalism,see Stiglitz, J.E. (2013). The Price of Inequality: How Today's Divided Society Endangers Our Future. London: Penguin Books.

may think about 'onion economics' or 'economics of people's health' or "Nigerian economic fate with lots of oil and autocratic regime"!

5. Austrian School: *"No one knows enough, so leave everyone alone".*

Neoclassical economists- not all are free-market economists, and all free-market economists are not Neoclassical economists. Everything with the Neoclassicals started in the 1920s and 1930s with the so-called Calc*ulation Debate* of central planning under socialism in the USSR. The proponents of the Austrian School challenged the possibility of acquiring information from each member of society to run a complex economy. They are ardent believers in the *spontaneous order*. However, capitalism is a system full of deliberately 'constructed orders'. These include the limited liability company, the central bank, intellectual property laws, the regulatory and cognitive capture of the state by the 'big money'- 'rent seekers'. Therefore, by calling the market a spontaneous order or entity, the Austrian School is seriously misrepresenting the reality of the capitalist economy.

6. Schumpeterian School: *"Capitalism is a powerful vehicle of economic progress, but it will atrophy, as firms become larger and more bureaucratic".*

You are most likely aware of entrepreneurs' innovation and gales of creative destruction. You all knowthatthe decline of companies like IBM and General Motors, or the disappearance of Kodak, which dominated the world in their respective industries at their peaks, demonstrates the destructive power of competition through innovation.

7. Keynesian School: *"What is good for individuals may not be good for the whole economy".*

John Maynard Keynes (1883-1946) was born when Marx died, and Schumpeter was born. Keynes's treatise of *value* was different from many of his predecessors. He redefined the discipline of economics by inventing the field of macroeconomics- the branch of economics that analyses the whole economy as an entity different from the sum total of its parts. It resembles Marx's understanding of economics in dialectic and historical fashion. Keynes started from an obvious observation that an economy does not consume all it produces. The difference-savings- needs to be invested if everything produced is to be sold and if all productive inputs, including the workers, are to be employed, known as *full employment*. He then argues that there is no guarantee that savings will equal investment. Here comes the issue of investors' expectations about the future. These expectations, as per Keynes, are driven by psychological factors rather than rational calculation because the future is full of ***uncertainty*** (as Keynes said, "in the long run, we are all dead"!). In his view, the normal state of affairs would be that investment is equated to savings at a level of *effective demand* (i.e., demand backed by purchasing power) that is insufficient to support full employment. Then he argues that to achieve full employment, the government has to use its spending activity to prop up the level of demand. Moreover, most likely, you all know about the Keynesian solution of "active fiscal policy for full employment". Also, as financialexperts, you all know about the Keynesian theory of Finance- *'Money gets a real job in economics'*.

On *value,* Keynes held a strong innovative view while dealing with the growth of material goods versus ethical goods. His view was like this: *Material progress will increase the welfareof the universe up to the point when it starts to diminish the quantity of ethical goods*. It implies that if we are to sustain an economy ensuring the complete well-being of people, the rate of growth in ethical goods shall exceed the growth rate in material goods.Keynes maintained: under capitalism, the economic growth would inevitably stagnate at a certain point of production of material goods; the only way out would be to ensure high growth of production of ethical goods, namely art, culture, education, good health, and quality leisure. All these can be interpreted as follows: if we want to put an accurate value against goods and services, we must consider the value of all externalities- both positive and negative. However, we seldom do it! We avoid such valuation of things to show a higher rate of economic return or high economic benefits against costs. It may be seen as valuing things based on convenience devoid of scientific value.

8. Institutionalist School: *"Individuals are products of their society, even though they may change its rules".*

Institutionalist Schools had the story of both rise and fall.Under the intellectual leadership of Thorstein Veblen (1857-1929), this School started questioning the notion of the rational, self-seeking individual. Veblen argued that humans have layers of motivations behind their behaviours- instinct, habit, belief and, only then, reason. Veblen emphasised that the social environment shapes human rationality, consisting of formal rules (laws, internal rules of companies) and informal rules (social customs and traditions, conventions in business dealings). After the 1960s, the Institutionalist School started to decline with the rise of a relatively narrow vision of neoclassical economics, emphasising individual-based theory, 'universal' assumptions, and abstract modelling. Then from the 1980s, a new group of economists- Douglas North, Ronald Coase and Oliver Williamson- started a new school of institutional economics. They brought forefront the concepts of *transaction cost* and *property rights.* They questioned why so many economic activities are conducted within firms in a supposedly' market' economy. Their simple answer was- market transactions are often very costly due to the high cost of information and contract enforcement.Although the Institutionalist School talked about transaction costs, it never went deep into the basis of costs- the value of things and the real costs of institutions shaping human behaviour.

9. **Behaviouralist School**: *"We are not smart enough, so we need to constrain our own freedom of choice through rules deliberately".*

The Behaviouralist School originated in the 1940s and 1950s with Herbert Simon (1916-2001) as the leader. This School attempted to model human behaviour as they actually are, rejecting the dominant Neoclassical assumption that human beings always behave rationally and selfishly. Herbert Simon came up with a new concept- the central concept of '*bounded rationality*'. It argues that we try to be rational, but our ability to be so is very limited, especially given the prevalence of uncertainty; we look for 'good enough' solutions rather than the best ones (as in the Neoclassical theory). This School's attempt to understand human society from individuals up in reality from a place much 'lower' than that, that is, from our thinking process up- is regarded as both its strength and weakness. Actually, focussing too much at this 'micro' level, the School often loses sight of the larger canvas of an economic system. The School focuses much on human cognition and psychology, generating helpful, practical exercises in experimental economics and neuroeconomics. However, the fact remains that because of its areas of concern in narrow-versioned human behaviour without any consideration about the system at large, this School is less bothered about understanding the 'value of things'.

Having analysed the one-sentence summary of each of the above nine schools of economics along with some guiding clues, it would be imperative to turn to the issue of '*value*' and '*costing value*' or '*value costing*' or '*valuing value*'. I am, however, aware of the possible debate about using these terms synonymously, and I just wanted to make things simple and not simpler.

So, what is **'value'**(and**'not price')**? Who creates value (?): Land (?), labour (?), Capital (?), Organization (?), Technology(?). Where does it create (?): in

Production (?), (in) Exchange (?), (in) Distribution (?), (in) Re-distribution, (?), (in) Consumption (?). Whether `value' is created in 'agriculture' and/or in 'industry' and/or in 'service' and/or in 'defence'?There is no simple question to be answered: This is a three-thousand yearlong discourse not yet resolved to most schools'satisfaction.

What is 'value'? Interestingly enough, no standard textbook of either macroeconomics or microeconomics defines'value'; noChapter and even no Section in the textbook is dedicated to 'value'. In the standard textbooks, you will get at best the terms like *'price'*, *'value addition'*, *'volume multiplied by price'*, and so on,but not on *value per se.*Furthermore,nothing about what *'value'* is all about. Is it not surprising?

The Classical Economists of the 18th and 19th Century- William Petty, David Ricardo, and Adam Smith came up with the *'labour theory of value'*.Subsequently, it wascritically analysed, explained and expanded by Karl Marx. Marx explained that the 'new thing created out of something is 'value'. However, if that to be exchanged must be created only by 'labour power' in the physiological sense of the term, a common denominator – the *abstract labour* (i.e., the *quantity of labour embodied in a commodity*). Then the discourse expanded to the concepts of *'use value'* ('value' created attributed to division of labour and specialisation, `i.e., value' as a product of useful and *concrete labour*, why is a product of the *quality of labour*) and *'exchange value'*(equivalence of two commodities in different proportions in the exchange or market; Value created attributable to the amount of labour– abstract labour, i.e., the *quantity of labour*). Here *Value* is a *social construct*, and value-producing labour is part of *social labour*. The key argument in "labour theory of value" is: "commodities cannot be exchanged due to presence of specialised concrete labour in them, because as useful labour they are different; they can only be exchanged due to some common denominator, which is `labour' as physiological sense expended, and that labour is part of social labour. This classical economists' concept of 'value' gave rise to the concept of *'surplus value'*, which is expropriated by the owners of capital. This treatment of 'value creation' gave rise to the *'theory of exploitation of labour by capital'*, which, in turn, paved the way to rethink the transient nature of Capitalism as a system.

Most classical economists (including Karl Marx) – the proponents of the labour theory of Value – maintained that 'value' could only be created in the sphere of 'production'. Therefore, when something is produced in the sphere of production, they name it as 'good' or 'produce', and when that 'goods' entered the market for exchange (buying – selling), they named that as 'commodity'. In contrast, in other spheres like in 'exchange' or in 'distribution' the Value created in production changes its/ her form (for example, from "commodity form" to 'money form'), which implies that `exchange' has no inherent capability to produce or create new Value. So, all 'commodities' are 'goods', but all 'goods' may not be 'commodities'. This dichotomy has historical, philosophical, social and practical implications.

Then comes the issue of the broad sector as to where 'value' is produced. The Mercantilists asserted that 'value' is produced only in exchange, in trade. No wonder the Mercantilists were the ardent promoters of trade and commerce; they were the promoters of establishing colonies; they even supported fight war 'victory is guaranteed'. The Physiocrats asserted that 'value' is produced only in agriculture (and the great Physiocrat, Francoise Quesnay discovered the first macroeconomic model – The TableúEconomique). Subsequently, the great Classical economists – William Petty, David Ricardo, and Adam Smith –rightly identified 'industry' (initially 'manufacture' and 'light industries') as the sphere of value production during the early stage of industrialisation.

With what I have said so far, economic science entered into the trouble of moral and ethical justification of Capitalism, especially with the consolidation of the 'labour theory of value'. The rescuer was Jeremy Bentham (1748-1832). He forwarded the core concept of 'utility. The 'utilitarian' concept argued that value is not created by labour, and rather it is the utility of the good which determines value.[5] It was the brief history of the end of the labour theory of value and the emergence and rise of the concept of 'marginal utility' and the 'law of diminishing returns'.

Furthermore, with this new understanding of sources of value creation – the use of mathematics became a fond tool for the economists as a 'vehicle of proof'as opposed to great economist Alfred Marshall's cautionary directive (in his letter to his favourite student Pierre Sraffa) that "Never use mathematics as a vehicle of proof" and DaniRodrick's commandment that "Economists use math not because they are smart but because they are not smart enough". However, with this rampant mathematicalization, the whole economic science started dominated by 'models' some even try to propose `the' model and not `a' model ¾ based on the assumption that individuals behave selfishly (i.e., totally ignoring the issue of 'moral responsibility). From then onward, the whole of economic science has been caught in the trap of '*Model-blind Science*'.[6]

5 For a philosophical treatise on the limitations of utilitarian concepts of value, see, Sen, A. K. (1981). On Ethics and Economics. Oxford: Basil Blackwell.

6 To learn more about "Model-blind Science" which based on data-centric vocabulary fails to understand causal links and suffer from pretensions see, Pearl, J. & D. Mackenzie. (2019).The Book of Why. The New Science of Cause and Effect. UK: Penguin Books.

This *model-blind science* is blind not just because of total departure from a proper understanding of 'value', but because of the consequences of the departure: Correlation failing to establish causality is the death of causation. It is not tantamount to say that models are useless. The truth isthat models are never true, but there is truth in models. Also, it is not unfounded that most economists (most model builders) have adopted a fragmentalist and reductionist approach to a social phenomenon, making unfounded universal claims, ignoring the social, cultural, and political context, reifying markets and material incentives, and having a conservative bias. More so, many assumptions that go into economic models – perfect competition, perfect information, and perfect foresight – are patently untrue. Also, economists' obsession with choices made by individual households or investors – hides the fact that preferences and behavioural patterns are 'socially constructed' or imposed by the structure of society.[7]

In-lieu of a Conclusion

"All learning begins when our comfortable ideas turn to be inadequate."
- John Dewey (1859-1952)

"Believe nothing, no matter where you read it or who said it, unless it agrees with your own reason."
Siddhartha Gautama (563-483 BCE)

The history of economic thoughts, especially classical economics, with herlabour theory of value and other associated concepts emerging from that, provides many stepping-stones and analytic tools to address our time's more prominent public issues. What economic science does not provide is definitive, universal answers. The results obtained from economics proper must be combined with values, judgments, and evaluations of a moral, ethical, political, or practical nature. These last have very little to do with the discipline of economics but everything to do with reality. Since cost accountants and management accounts deal with reality,it might be of high-knowledge-utility for them to recognise and internalise the essence of 'value' in valuing things. However, regardless of hard-core economists or applied economists (e.g., cost accountants, environmental economists), economists must uphold ethical values and moral responsibility to

7 To understand more about what went wrong with economic models and assumptions behind, what's wrong with scientific pretensions of economists, why a model (or theory) is at best contextually valid and alike, please see, Rodrick, D. (2016). Economic Rules. The Rights and Wrongs of the Dismal Science. NY: W.W. Norton& Company.

become socially helpful entities. They need to understand the essence of the 'value of things' and believe that *efficiency* is not everything. They need to understand the following (among others): possibilities of "economics' harmful effects on public culture", "emission control may be a question of effectiveness, but more so a moral matter", "if you want to reduce a behaviour, make it more costly for the individuals who exhibit the behaviour ¾ maybe a totally wrong policy". On the last one, let me forward the result of an experimental study: To reduce tardiness, an Israeli daycare had instituted a penalty for parents who showed up late to pick up their children. The result of this experiment surprised everyone. Tardiness actually increased after the penalty was put in place. What is the lesson? A moral injunction that previously had kept parents' behaviour in check was relaxed once the monetary penalty came into play.

Let me conclude: Three persons– a surgeon-physician, an architect, and an economist– were travelling on a train together, and they got into a debate as to which one of their professions is the most honourable. The physician said that God created Eve out of Adam's rib, so He must have been a surgeon. The architect disagreed and said, "Before Adam and Eve existed, the universe had to be created out of chaos, and that surely was a domain of architecture". At that point, the economist said, "And where do you think the chaos came from?" I think- irrespective of the nature of the knowledge frontier- we all are trying to understand the rules of *order in chaos,* and the rules keep changing with time and space. Finally, I think that for us – the knowledge seekers – the best thing to re-learn and internalise would be the following commandments by the philosophers: '*I know nothing except the fact of my ignorance*' by Socrates (469-399 BC), and '*If you would be a real seeker after truth, it is necessary at least once in your life you doubt, as far as possible, all things*' by Rene Descartes (1596-1650), and not to forget George Hegel (1770-1831) that '*All reality is a historical process.*'

Bibliography

Alvey, James E. (2011). *A Short History of Ethics and Economics.* The Greeks. UK: Edward Elgar Publishing.

Arrow, Kenneth. J. (2008). Arrow's Theorem. In: Durlauf, S. N. and Blume, L. E.*The New Palgrave Dictionary of Economics (8 volume set)* (2nd ed.). Basingstoke, Hampshire New York: Palgrave Macmillan.

Arrow, Kenneth. J., &Debreu, G. (2001). *Landmark papers in General Equilibrium Theory, Social Choice and Welfare.* Cheltenham, UK Northampton, Massachusetts, USA: Edward Elgar Publishing.

Arrow, Kenneth. J. (1985a). *Collected papers of Kenneth J. Arrow, volume 5: Production and Capital.* Cambridge, Massachusetts: Belknap Press.

Arrow, Kenneth. J. (1983). *Collected papers of Kenneth J. Arrow.* Cambridge, Massachusetts: Harvard University Press.

Arrow, Kenneth. J. (1974). *The Limits of Organization.* New York: W.W. Norton & Company.

Arrow, Kenneth. J. (1959). Functions of a Theory of Behavior under Uncertainty. *Metroeconomica.* 11(1-2). Pp.12-20. Wiley online library.

Arrow, Kenneth. J. (1951). *Social Choice and Individual Values.* New York: John Wiley & Sons, Inc.; London: Chapman & Hall.

Backhau, Jürgen. G. (2011). *Handbook of the History of Economic Thought.* New York: Springer.

Baeck, Louis. (1994). *The Mediterranean Tradition in Economic Thought.* London: Routledge.

Barkat, Abul. (2017). *Poverty of Philosophy in Economics (Arthoniti Shayastree Dorsoner Daridro,* in Bangla). Dhaka: MuktoBuddhi Publishers

Basu, Kausik (2000). *A Prelude to Political Economy. Oxford: Oxford University Press.*

Baumol, William.J., & Blinder, Alan. S. (1991). *Economics: Principles and Policy* (Fifth Edition). Harcourt Brace Jovanavich, Publications.

Beinhocker, Eric. D. (2006). *The Origin of Wealth.* Evolution, Complicity, and the Radical Remaking of Economics. Boston: Harvard Business Press.

Bell, John F. (1967). *A History of Economic Thought.* Second Edition. New York: The Ronald Press Company.

Bentham, Jeremy. (1789). *An Introduction to the Principles of Morals and Legislation.* 1st Edition. Oxford: Clarendon Press.

Berber, William. J. (2010). *A History of Economic Thought*. Connecticut: Wesleyan University Press.

Blaug, Mark. (1968). *Economic Theory in Retrospect*. Heinemann Educational Publishers; 2nd Revised edition. Cambridge, Cambridge University Press.

Blaug, Mark. (1997). *Economic Theory in Retrospect.* (5th Edition). Cambridge: Cambridge University Press.

Brue, Stanly., & Grant, Randy. (2012). *The Evolution of Economic Thought*. Massachusetts: Cengage Learning.

Buchanan, James. (1975). *Limits of Liberty: Between Anarchy and Leviathan. Chicago: Chicago University Press.*

Chang, Ha-Joon. (2014). *Economics: The User's Guide*. UK: Pelican imprint of Penguin Books.

Chang, Ha-Joon. (2008). *Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism*. New York: Bloomsbury Press.

Chang, Ha-Joon., & Grabel, Ilene. (2005). *Reclaiming Development: An Alternative Economic Policy Manual*. London: Zed Books Ltd.

Charles Gide., & Charles Rist. (1948). *A History of Economic Doctrines*. From the time of the Physiocrats to the present day. London: George G. Harrap& Co Ltd.

Chomsky, Noam. (2007). *Pirates and Emperors, Old and New: International Terrorism in the Real World.* New Delhi: Viva Books Private Limited.

Chomsky, Noam. (2006). *Failed States: The Abuse of Power and The Assault on Democracy.* London: Penguin Books.

Chomsky, Noam. (2005). *Imperial Ambitions*. London: Penguin Books.

Chomsky, Noam. (2003). *Hegemony or Survival: America's Quest for Global Dominance.* London: Penguin Books.

Cohn, Theodore. (2015). *Global Political Economy*. London: Routledge.

Colander, David. C. (2001). *Economics* (Fourth Edition). New York: McGraw Hill Irwin.

Deane, Phyllis. (1989). *The State and the Economic System.* Oxford: Oxford University Press.

Deane, Phyllis. (1978). *The Evolution of Economic Ideas*. Cambridge: Cambridge University Press, October 5, 1978.

Dobb, Maurice. (1973). *Theories of Value and Distribution since Adam Smith: Ideology and Economic Theory*. Cambridge: Cambridge University Press, 1973.

Ekelund JR, Robert. B., & Hébert, Robert. F. (2013). *A History of Economic Theory and Method.* Illinois: Waveland Press.

Engels, Friedrich. (1972). *The Origin of the Family, Private Property and the State*. New York: Pathfinder

Essid, Yassine. (1995). *A Critique of the Origins of Islamic Economic thought*. Boston, MA: Brill Academic Publishers.

Fourier, Charles. (1971). *Design for Utopia*. New York: Schocken Books.

Fourier, Charles., & Poster, M. (1971). *Harmonian Man*. Garden City, New York: Doubleday.

Friedman, Milton. (1991). *Quantity Theory of Money*. Eatwell, J., Milgate, M. and Newman, P. *The New Palgrave*. New York: W.W. Norton & Company.

Friedman, Milton., & Friedman, Rose D. (1980). *Free to Choose*. New York: Harcourt Brace Jovanovich.

Friedman, Milton. (1962). *Capitalism and Freedom*. Chicago: University of Chicago Press.

Fusfeld, Daniel. R. (1982). *The Age of the Economist*. Scott, Foresman and Company.

Galbraith, Kenneth, J. (1998). *A History of Economics: The Past as the Present*. London: Penguin.

Gordon, Donald. F. (1965). The Role of the History of Economic Thought in the understanding of Modern Economic Theory. *The American Economic Review*, *55*(1/2), pp. 119-127.

Gray, Alexander. (1931; 1961). *The Development of Economic Doctrine: An Introductory Survey*. London: Longmans, Green.

Hahnel, Robin. (2015). *The ABCs of Political Economy*. Pluto Press: University of Chicago Press Economics Books.

Harvey, David. (2007). *Neoliberalism*. Oxford: Oxford University Press.

Harvey, David. (2003). *The New Imperialism*. Oxford: Oxford University Press.

Harvey, David. (1982). *The Limits to Capital*. Chicago: University of Chicago Press.

Hayek, Friedrich. A., & Hamowy, R. (2011). *The Constitution of Liberty*. Chicago: University of Chicago Press.

Hayek, Friedrich. A., & Klein, P. (1992). *The Fortunes of Liberalism*. Chicago: University of Chicago Press.

Hayek, Friedrich. A. (1973). *Law, Legislation and Liberty: A New Statement of the Liberal Principles and Political Economy. Volume 1: Rules and Order*. London: Routledge.

Hayek, Friedrich. A. (1944). *The Road to Serfdom*. Chicago: University of Chicago Press.

Heilbroner, Robert L. (2011). *The Worldly Philosopher*. New York; Simon and Schuster.

Heilbroner, Robert. (1990). Analysis and Vision in the History of Modern Economic Thought. *Journal of Economic Literature*, *28*(3), pp. 1097-1114.

Hume, David. (1961). *A Treatise of Human Nature*. Garden City, New York. Doubleday.

Hume, David. (1894). *An Enquiry Concerning the Human Understanding*. Oxford: Clarendon Press.

Hume, David. (1752). *Political discourses*. Edinburgh: Printed by R. Fleming, for A. Kincaid and A. Donaldson.

Hunt, Emery. K., & Lautzenheiser, Mark (Third Edition). (2015). *History of Economic Thought: A Critical Perspective*. New York: Routledge.

Hutchinson, Marjorie. G. (2016). *Early Economic Thought in Spain 1177-1740*. Indiana: Liberty Fund.

Hyman, David. N. (1992). *Economics* (Second Edition). Homewood, IL and Boston. MA: IRWIN.

Ibn Khaldun (tr. by Franz Rosenthal, 1967). *The Mucaddimah, an Introduction to History*. Princeton: Princeton University Press.

Islahi, Azima. (2014). *History of Islamic Economic Thought*. UK: Edward Elgar Publishing.

Jevons, Stanley. W. (1883). *Methods of Social Reform* and other papers, edited by Harriet A. Jevons. London: Macmillan and Co.

Jevons, Stanley. W. (1876). *The Future of Political Economy*. Fortnightly Review. November 1, vol. xx, pp. 617-31.

Jevons, Stanley. W. (1875). *Money and the Mechanism of Exchange*. New York: D. Appleton

Jevons, Stanley. W. (1871). *The Theory of Political Economy.* Reprint. Harmondsworth: Penguin Books.

Jevons, Stanley. W. (1866). *Brief Account of a General Mathematical Theory of Political Economy*. InJournal of the Royal Statistical Society.Vol. xxix., 29. pp. 282-287.

Kaplan, Steven. (1976). *Bread, Politics and Political Economy in the Reign of Louis XV*. The Hague: Martinus Nijhoff.

Kates, Steven. (2013). *Defending the History of Economic Thought.* UK: Edward Elgar Publishing.

Keynes, Maynard. J. (1890). *The Scope and Method of Political Economy*. Ontario: McMaster University Archive for the History of Economic Thought.

Keynes, Maynard. J. (1965). *A Treatise on Money*. New York: Harcourt, Brace and company.

Keynes, Maynard. J. (1936). *The General Theory of Employment, Interest and Money.* London: Macmillan and Co.

Keynes, Maynard. J. (1926). *The End of Laissez-faire*. London: L. & Virginia Woolf.

Kozul-Wright., & Rayment, P. (2007). *The Resistible Rise of Market Fundamentalism: Rethinking Development Policy in an Unbalanced World.* London: Zed Books and Third World Network.

Krugman, Paul. (2013). *End This Depression Now.* New York: W.W. Norton & Company, Inc.

Krugman, Paul. (2007). *The conscience of a liberal.* New York: W.W. Norton & Company.

Krugman, Paul., Wells, R., & Graddy, K. (2008). *Economics.* New York: Worth Publishers.

Lee, Frederic. S. (2009). *A History of Heterodox Economics: Challenging the Mainstream in the Twentieth Century.* NY: Routledge.

Letwin, William. (1963). *The Origins of Scientific Economics: English Economic Thought, 1660-1776-177.* London: Methuen & Co., 1963.

Lipsey, Richard. G, & Chrystal, K. A. (1995, Eighth Edition). *An Introduction to Positive Economics.* ELBS: Oxford University Press.

Locke, John. (1990). *Questions Concerning the Law of Nature.* In: Robert Horwitz et al. *Questions Concerning the Law of Nature.* Ithaca: Cornell University Press.

Locke, John. (1969). *Two Treatises of Government.* London: C. and J. Rivington.

Locke, John. (1692). *Some Considerations of the Consequences of the Lowering of Interest and Raising the Value of Money.* London: Printed for Awnsham and John Churchill.

Malthus, Thomas. R. (1951). *Principles of Political Economy.* New York: Kelley.

Malthus, Thomas. R. (1824). *Political Economy. Quarterly Review* 30 (60). pp. 297 –334.

Malthus Thomas. R. (1798). *An Essay on the Principle of Population.* Reprint. Oxford World's Classics.

Mandeville, Bernard. (1733). *The Fable of the Bees.* London: J. Roberts.

Marcuzzo, Maria. C. (2008). Is History of Economic Thought a "Serious" Subject? *Erasmus Journal for Philosophy and Economics, 1*(1), pp. 107-123.

Marx, Karl. (1872). *Das Capital.* Hamburg: Otto Meissner.

Marx, Karl. (1867). *A Critique of Political Economy.* Reprinted. New York: Penguin Books.

Marx, Karl. *Capital: A Critical Analysis of Capitalist Production. Volume 1-* Translated by Samuel Moore and Edward Aveling. (General Editor: Tom Griffith). Hertfordshire: Wordsworth Editions Limited.

Marx, Karl., & Engels, F. (1848). *The Communist Manifesto.* New York: Penguin group.

Medema. Steven G., & W.J. Samuels (eds.) (2013). *The History of Economic Thought.* A Reader (Second Edition), New York: Routledge.

Medema, Steven. G. (2011). Presidential Address: The Coase Theorem Lessons for the Study of the History of Economic Thought. *Journal of the History of Economic Thought*, *33*(01), pp. 1-18.

Menger, Karl. (1979). *Selected papers in Logic and Foundations, Didactics, Economics*. Dordrecht: D. Reidel Pub. Co.

Menger, Karl. (1973). *Austrian Marginalism and Mathematical Economics. In: Hicks, J. R. and Weber*, W.(Eds.)-*Carl Menger and the Austrian School of Economics*. Oxford: Oxford University Press.

Menger, Karl. (1967). *The Role of Uncertainty in Economics. In: Shubik*, M. (Ed.) *Essays in Mathematical Economics in Honor of O. Morgenstern*. Princeton: W. Schoellenkopf and W. G. Mellon.

Menger, Karl. (1938). *An Exact Theory of Social Groups and Relations*. American Journal of Sociology. 43. pp. 790-798.

Mill, James. S. (1848).*Principles of Political Economy* London: Longmans, Green and Co.

Mises, Ludwig von. (1960; 1976). *Epistemological Problems of Economics*. New York: New York University Press.

Mises, Ludwig von. (1957; 1969). *Theory and History: An Interpretation of Social and Economic Evolution*. New Rochelle, N.Y.: Arlington House.

Mises, Ludwig von. (1949; 1966). *Human Action: A Treatise on Economics*. Chicago: Henry Regnery.

Mitchell, Wesley. C. (1966). *Lecture Notes on Types of Economic Theory*. New York, A. M. Kelley, 1949; monographic text.

Monroe, Arthur E. (1945). *Early Economic Thought: Selections from Economic Literature prior to Adam Smith*. Fifth Edition. Cambridge (Mass.): Harvard University Press.

Moore, Thomas. (1840a). *Thoughts on Mischief. Morning Chronicle,* May 2 1840.

Moore, Thomas. (1840b). *Religion and Trade. Morning Chronicle,* June 1 1840.

Moss, Laurence. S. (ed.). (2013). *Joseph A. Schumpeter: Historian of Economics: Perspectives on the History of Economic Thought*. NY: Routledge.

Murakami, Yasusuke., & Yamamura, Kozo. (1999). *An Anticlassical Political-Economic Analysis: A Vision for the Next Century*. California: Stanford University Press.

Murray, Thomas. ([1962/1970] 2004. *Man, Economy, and State: A Treatise on Economic Principles with Power and Market: Government and the Economy*. Scholar's Edition. Alabama: Ludwig Von Mises Institute.

Nelson, Richard. R., & Winter, Sidney. G. (2009). *An Evolutionary Theory of Economic Change*. Massachusetts: The Belknap of Harvard University Press.

Nembhard, Jessica. G. (2014). *Collective Courage: A History of African American Cooperative Economic Thought and Practice*. University Park, PA: Penn State Press.

Nicholas, Georgescu R. (1971). *The Entropy Law and the Economic Process*. Cambridge, Massachusetts: Harvard University Press.

North, Dudley-S. (1691). *Discourses upon Trade*. A Reprint of Economic Tracts in 1907. Baltimore: The Johns Hopkins Press.

Oatley, Thomas. (2015). *International Political Economy*. London: Routledge.

Owen, Robert. (1813). *A New View of Society, or, Essays on the Principle of the Formation of the Human Character, and the Application of the Principle to Practice*. London: Cadell and Davies.

Pearl, J., & D. Mackenzie. (2019). *The Book of Why. The New Science of Cause and Effect*. UK: Penguin Books.

Perkins, John. (2003). *Macroeconomics*. (Sixth Edition). Pearson Education, Inc.

Petty, William. (1691). *The Political Anatomy of Ireland*. New edition (1971). Irish Univesity Press.

Petty, William. (1690). *Political Arithmetic, etc.* London: R. Clâvel.

Petty, William. (1662). *A Treatise on Taxes and Contributions*. London: Obadiah Blagrave.

Piketty, Thomas. (2014). *Capital in the Twenty-First Century*. The Belknap Press of Harvard University.

Plato. (2000). *The Republic*. (Ferrari, G. and Griffith, T. Trans.) Cambridge: Cambridge University Press.

Polanyi, Karl. P. (1944). (published paperback 1957). *The Great Transformation*. New York: Farrar & Rinehart Inc.

Pomeroy Sarah. B. (1995). *Xenophon Oeconomicus NY*: Clarendon Press.

Ponsard, Claude. (2012). *History of Spatial Economic Theory*. New York: Springer Science & Business Media.

Porter, Theodore. (1995). *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life. Princeton*: Princeton University Press.

Pressman, Steven. (1999). *Fifty Great Economists. London and New York*: Routledge.

Quesnay, Francoise. (1758). *Tableau économique. Akademie-Verlag, 1965*; Free Press, 1817.

Ricardo, David. (1817). *On the Principles of Political Economy and Taxation*. London: John Murray.

Rima, Irene H. (1972). *Development of Economic Analysis. The Irwin series in economics*. Revised edition.

Robbins, Lionel. (2000). *A History of Economic Thought*. Princeton: Princeton University Press.

Robbins, Lord. (1970). *The Evolution of Modern Economic Theory: and Other Papers on the History of Economic Thought*. UK: Palgrave Macmillan

Robbins, Lord. (1976). *Political Economy of Past and Present: A Review of Leading Theories of Economic Policy*. UK: Palgrave Macmillan.

Roll, Eric. (1992). A *History of Economic Thought*. London: Faber and Faber Limited.

Roncaglia, Alessandro. (2005). *The Wealth of Ideas: A History of Economic Thought*. Cambridge University Press.

Rothbard, Murray. N. (1995). *Economic Thought Before Adam Smith*. Edward Elgar Publishing Ltd.

Rothbard, Murray. N. (2006). *An Austrian Perspective on the History of Economic Thought*: Classical Economics.Vol. 2. Alabama: Ludwig Von Mises Institute.

Rovins, Lord. (2016). *An Essay on the Nature and Significance of Economic Science*. UK: Palgrave Macmillan.

Rodrik, Dani. (2016). *Economic Rules. The Rights and Wrongs of the Dismal Science*. NY: W. W. Norton & Company.

Roll, Eric. (1956). *A History of Economic Thought*. Third edition. NJ: Prentice-Hall Englewood Cliffs.

Saad-Filho, A., & Johnston, D. (2005). *Neoliberalism – A Critical Reader*. London: Pluto Press.

Samuels, Warren. J., Biddle, Jeff. E., & Davis, John. B. (eds.). (2008). *A Companion to the History of Economic Thought*. New York: John Wiley & Sons.

Samuelson, Paul., & Barnett, W. (2007). *Inside the Economist's Mind*. Malden, MA: Blackwell Pub.

Samuelson, Paul., & Nordhaus, W. D. (2005). *Economics* (Eighteenth Edition). New York: McGraw Hill.

Sandmo, Agnar. (2011). Economics *Evolving: A History of Economic Thought* Princeton: Princeton University Press.

Sargent, Thomas J., & Wallance, N. (1976). Rational Expectations and the Theory of Economic Policy. *Journal of Monetary Economics*. 2.

Say, Jean-Baptiste. (1880; 1971). *A Treatise on Political Economy: or the Production, Distribution and Consumption of Wealth*. New York: Augustus M. Kelley.

Say, Jean-Baptiste. (1936). *Letters to Thomas Robert Malthus on Political Economy and Stagnation of Commerce*. London: G. Harding's Bookshop Ltd.

Schumpeter, Joseph. A. (1954). *A History of Economic Analysis*. New York: Oxford University Press.

Schumpeter, Joseph. A. (1987). *Capitalism, Socialism and Democracy,* 6th edition. London: Unwin Paperbacks.

Scott, Meikle. (1997). Aristotle'*s Economic Thought.* Oxford: Oxford University Press.

Screpanti, Ernesto., & Stefano Zamgni (2005). *An Outline of the History of Economic Thought.* Oxford University Press.

Sen, Amartya. K. (1999). *Development as Freedom*. New York: Alfred A. Knopf, Inc.

Sen, Amartya. K. (1987). *On Ethics and Economics*. Oxford: Basil Blackwell.

Smith, Adam. (1759). *The Theory of Moral Sentiments*. London: A. Miller.

Smith, Adam. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations (The Wealth of Nations),*London: J.M. Dent &Sons; New York: E.P. Dutton.

Spen Gler, Joseph. J. (1964). *Economic Thought in Islam: Ibn Khaldun*. In Comparative Studies in Society History. Vol 6, No. 3. (April 1964).

Spencer, Herbert. (1864). *The Survival of the Fittest. In: SPENCER*, H.*The Principles of Biology*. London: Williams and Norgate.

Spiegel, William. H. (1991, 3rd ed.). *The Growth of Economic Thought*. Durham, North Carolina: Duke University Press.

Sraffa,Piero. (1955). *The Works and Correspondence of David Ricardo: Biographical Miscellany. Cambridge:* Cambridge University Press.

Stark, Werner. (1944). *The Ideal Foundations of Economic Thought: Three Essays on the Philosophy of Economics (Ed. Mannheim, Karl.)*. First Edition. Oxford: Oxford University Press.

Stiglitz, Joseph. E. (2002). *Globalisation and Its Discontents*. Penguin Books.

Stiglitz, Joseph. E. (2013). *The Price of Inequality*. Penguin Books.

Tawny, Richard. H. (1947). *Religion and the Rise of Capitalism*. New York: Harcourt, Brace Inc.

Taylor, Overton. H. (1960). *A History of Economic Thought*. New York: Mc Grow-Hill Book Co.

Todd, Buchholz, G. (2007). *New Ideas from Dead Economist; An Introduction to Modern Economic Thought*. Plume, New York: Penguin Group.

Toynbee, Arnold. J. (1935). *A Study of History*. Oxford: Oxford University Press.

Turgot, Jacques. A.R. (1795). *Reflections on the Formation and Distribution of Wealth*. London: Printed by E. Spragg.

Turgot, Jacques. A.R., & Groenewegen, P. (1977). *The Economics of A.R.J. Turgot*. The Hague: Martinus Nijhoff.

Turgot, Jacques. A.R., & Meek, R. (1973). *Turgot on Progress, Sociology and Economics*. Cambridge: Cambridge University Press.

Veblen, Thorstein. (1954). *The Theory of the Leisure Class. New York: Macmillan*, 1899. New York: New American Library, Mentor Edition.

Veblen, Thorstein. (1904). *The Theory of Business Enterprise*. Reprint edition. New York: Charles Scribner's Sons.

Ver Eecke, Wilfried. (1998). The Concept of a "Merit Good" the Ethical Dimension in Economic Theory and the History of Economic Thought or the Transformation of Economics into Socio-economics. *The Journal of Socio-Economics*, *27*(1), pp. 133-153.

Vermeij, Geerat. J. (2009). *Nature: an economic history*. New Jersey: Princeton University Press.

Walras, Leon., & Jaffe, W. (1965). *Correspondence of Leon Walras and related papers*. Amsterdam: North-Holland Pub. Co.

Warsh, David. (2007). *Knowledge and the Wealth of Nations: A Story of Economic Discovery*. NY: W.W. Norton & Company.

White, Lawrence. H. (2012). *The Clash of Economic Ideas*. Cambridge: Cambridge University Press.

Williamson., John. (1990). *What Washington Means by Policy Reform*. In: Williamson, J. (Ed.). Latin American Adjustment: How much Has Happened? Washington, DC: Institute for International Economics.

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What is the Impact of E-banking on the Performance of Commercial Banks in Bangladesh? Evidence from Panel Data Analysis

Bhishan Chandra Barman*
Md. Abdul Wadud**

Abstract

This article investigates the impact of e-banking on the performance of commercial banks in Bangladesh using balanced panel data from 12 Bangladeshi commercial banks covering ten years from 2009 to 2018. The performance of banks is measured by banks' return on assets (ROA). We use ROA as a dependent variable and a proxy of e-banking, bank-specific variables, and macroeconomic variables as independent variables. Fixed effects model (FEM) and random effects model (REM) are applied to run regression based on the performance measure of ROA. The Hausman test is performed to select an appropriate model between FEM and REM, and REM is found appropriate. The generalised method of moments (GMM) is also applied to examine the relationship between e-banking and banks' performance to control heterogeneity effects. Results from both REM and GMM reveal that e-banking has a positive and significant impact on the banks' performance at 5% and 10% significance levels, respectively. Empirical findings indicate that the higher is the experience of e-banking, the greater extent and significance is the performance of the banks. The study suggests that the Government policymakers should take policies to introduce electronic banking in the banking industry and provide adequate knowledge

* Research Fellow, Department of Economics, University of Rajshahi, E-mail: bhishan.econ@gmail.com

** Professor, Department of Economics, University of Rajshahi. E-mail: wadud68@gmail.com

and information about these technologies with appropriate use to employees and customers to improve the performance of the banking sector.

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1. Introduction

Nowadays, the banking sector is highly influenced by Information and Communication Technology (ICT), known as electronic banking (e-banking). In Bangladesh, the number of scheduled commercial banks is 57 (Bangladesh Bank, 2018). Generally, most private commercial banks (PCBs) are busy maximising their profit by serving attractive modern technologies to their clients. Information and technological revolution motivates banks to spend more on technology to maximise return and attract more customers who would not accept less than above-average services (Al-Smadi and Al-Wabel, 2011). Modern technologies have been accepted by both the banks and their clients in Bangladesh. We see that bank clients in Bangladesh are increasing, and transaction velocity is also increasing. E-banking has a higher potentiality, though the concept of e-banking is not so old in Bangladesh. (Ahmed et al., 2011). Many banks that use electronic banking now offer sophisticated tools, including rate alerts, account aggregation, stock quotes and portfolio managing programs to help manage all assets more effectively (Vila et al., 2013).

E-banking is a process that enables bank's customers to access accounts and general information on bank's products and services through electronic means like using web technology, telecommunications networks, other electronic devices, computers and cellular phones. A customer can carry out banking transactions electronically without physically entering a bank or financial institution (Simpson, 2002). It is a type of banking where assets are moved through a trade of electronic signals instead of through a trade of money, checks, or different sorts of paperdocuments.E-banking resembles traditional payment, inquiry, and data handling frameworks, varying in that it uses an alternate conveyance channel. Any choice to receive e-banking is regularly affected by various factors. This incorporate client care improvement and focus costs, all of which persuade banks to survey their electronic business strategies (Kondabagil, 2007). Banking through the internet has emerged as a strategic resource for achieving higher efficiency, control of operations, and cost reduction by replacing paper-based and labour-intensive methods with automated processes, thus leading to higher productivity and profitability (Malhotra and Singh, 2009).

In Bangladesh, foreign commercial banks (FCBs) play an innovative role in hosting e-banking with modern technology in retail banking. At the same time, the state-owned commercial banks (SCBs) and the private commercial banks (PCBs) adopt e-banking services in the late 1990s. The performance of banks is that banks are significantly affected by adopting e-banking to the respective banks. Therefore, there is a crucial relationship (positive/negative) between the performance of banks and the adoption of e-banking. Many studies have been found considering the impact of e-banking and the performance of banks, but they have found different results and findings.

E-banking affects positively on the performance of banks in terms of return on equity (ROE), return on assets (ROA) and net interest margin (NIM) with a time lag of two years, while a negative impact is observed in the first year of adoption because of associating higher costs in the preliminary stage (Siddik et al., 2016, Oyewole et al., 2013). E-banking influences significantly and positively on the performance of banks (Sarker et al., 2015, Ngango et al., 2015, Aduda and Kingoo, 2012, Abdullai and Micheni, 2018). Yang et al. (2017) observe that e-banking improves the Chinese bank performance in terms of return on equity (ROE), return on assets (ROA) and operating margin (OM). On the contrary, Onay and Ozsoz (2011), Khrawish and Al-sa'di (2011), Malhotra and Singh (2009), and Abaenewe et al. (2013) report a negative impact of e-banking on the performance of banks. So, it is clear that there is mixed empirical evidence for the impact of e-banking on the performance of banks.

In addition, there is a relative dearth of empirical studies that provide quantitative evidence on the impact of e-banking on banks' performance in Bangladesh, although the rate of adoption of e-banking by Bangladeshi commercial banks is increasing. It is, therefore, relevant for supervisors, bankers, bank regulators and researchers to understand how the performance of commercial banks in Bangladesh is affected by e-banking. To provide a systematic analysis of the impact of e-banking on the performance of Bangladeshi banks is the primary purpose of this study, and this study uses a sample of 12 commercial banks of Bangladesh that have adopted e-banking.

2. Literature Review

2.1 Concept of E-Banking

Electronic banking is known as e-banking. The term e-banking can be explained differently from different perspectives, whereas researchers across the world have made extensive efforts to provide a precise and all-inclusive concept of e-banking (Siddik et al., 2016). E-banking is a system through which financial service providers, individuals, customers, and businesses can access their accounts, do transactions and obtain the latest information on financial products and services from public or private networks, such as the internet. E-banking is a harmless, fast, proficient and straightforward electronic service to perform online banking services 24 hours a day and seven days a week. It is also a form of banking in which funds are transferred through an exchange of electronic signals instead of cash, checks, or other types of paper documents. The funds are transferred through electronic banking when someone takes cash from an automated teller machine (ATM) or pays for fares using a debit card.

E-banking is time-saving, fast and efficient than traditional banking. In modern busy days, people are finding it challenging to spend time on personal banking. There are different types of e-banking services that we can use for various bank transactions such as: PC banking includes internet banking and online banking, mobile banking (Bkash, Rocket, Ucash, among others, in Bangladesh), tele-banking, automated teller machines (ATMs), point of sale (POS), electronic funds transfer (EFT), TV banking, electronic clearing services (ECS), ATM cards and others. Internet banking is a boon for all such clients.

2.2 Previous Empirical Studies

Oyewole et al. (2013) observe the e-banking and banks performance in Nigeria using panel data of eight banks that have adopted e-banking from 2000 to 2010. The pooled OLS estimations indicate that e-banking influences banks' performance in terms of ROA and NIM with a time lag of two years, while a negative impact is observed in the first year of adoption. Hernando and Nieto (2007) explore the impact of internet banking on banks' financial performance. The study uses a sample of 72 commercial banks operating over the period 1994-2002. The results reveal an improvement in banks' profitability, which becomes significant after one and a half years in terms of ROA and after three years in terms of ROE.

Hossein (2013) examined the impact of e-banking on bank profitability in some selected Asian countries. The results indicate that internet banking starts contributing to banks' ROE with a time lag of three years while a negative impact is observed for one year lagged.

Baten and Kamil (2010) estimate the economic prospects of e-banking and explain the present scenario of banking sectors in Bangladesh. The study results show that e-banking supports several advantages to the Bangladeshi banking sector whereas, the Bangladeshi customers have not enough knowledge regarding e-banking which is understood by the banking sector in Bangladesh. Migdadi (2012) identifies the impact of adopting e-banking on branches operations strategy in developing economies from 1999 to 2008 using 15 local banks in

Jordan. The results reveal that branches are still the main channels of conducting banking transactions, and e-banking is parallel with branches.

Hassan et al. (2013) examine the impact of e-banking products on the performance of Nigerian deposit money banks using the listed twenty-one (21) Nigerian deposit money banks (DMBs) over the period from 2006 to 2011. The study results reveal that the adoption of electronic banking products (E-mobile and ATM transactions) has strongly and significantly impacted the performance of Nigerian banks. Khrawish and Al-sa'di (2011) investigate the impact of E-banking on bank profitability using primary data from 2000 to 2009 in Jordan. The study results indicate that there is no significant effect of E-banking services on the profitability of recent adopters' banks in terms of ROE and ROA, but it is significantly affected by E-banking services in case of interest margin.

Musa et al. (2015) explore the impact of online banking on the performance of the Nigerian banking sector. The study uses 21 commercial banks in Nigeria covering two specified periods: pre-consolidation (2000-2004) and post-consolidation (2005-2009). The study reveals that e-banking has revolutionised the banking industry by scaling borders and bringing about new opportunities. Al-Smadi and Al-Wabel (2011) analyse the impact of E-banking on the performance of Jordanian banks using panel data of 15 Jordanian banks for the period 2000-2010. The results show that the costs associated with adopting electronic banking are still higher than revenues from provision provided by electronic services.

Malhotra and Singh (2009) examine the impact of internet banking on bank performance and risk in India using panel data of 85 commercial banks from 1998 to 2006. The results show that internet banking has no significant impact on the profitability of banks. At the same time, there is a significant negative association with the risk profile of the banks in internet banking. Onay and Ozsoz (2011) evaluate the impact of internet banking on Brick and Mortar branches in Turkey using a panel of eighteen (18) retail banks that operate in Turkey from 1990-2008. The study results indicate that the adoption of internet banking has a negative impact on bank profitability after two years of adoption as internet banking increases competition and, therefore, lower interest income.

The earlier literature has some lacking which creates scope to conduct a further study for examining the impact of e-banking on the performance of banks. In most cases, the earlier studies are descriptive, considering the impact of e-banking on the performance of banks. To fill these gaps that are found in earlier studies, this study is an effort. Again, to estimate the relationship between e-banking and the performance of banks, the regression techniques such as, fixed effects model (FEM), random effects model (REM) along with generalised method of moments (GMM) have not been used in earlier studies. Such crucial regression techniques (FEM or REM and GMM) to examine the impact of e-banking on the performance of commercial banks in Bangladesh are employed in our study. And this study is valued electronic banking in terms of the number of experience years of adopting e-banking by banks which have been not found in earlier studies. It is relevant to conduct a research to estimate the impact of e-banking considering the number of experience years by banks, since most of the banks in developed and developing countries like Bangladesh have already adopted e-banking technology.

3. Methodology

3.1 Research Design

The study uses panel data consisting of cross-sectional information, which captures individual variability, and time-series information, which captures dynamic adjustment. The study analyses the collected data statistically, and fixed effects model (FEM), random effects model (REM) and generalised method of moments (GMM) regression techniques are employed to examine the relationship between e-banking as well as other control variables and the performance of commercial banks.

3.2 Data Sources and Description

Twelve commercial banks were selected. Among them, 3 are the state-owned commercial banks (SCBs), and 9 are the private commercial banks (PCBs). We collect two types of data such as: primary data and secondary data. We collect primary data through personal visiting to the selected banks' branches at Rajshahi. Interviews are taken directly from the branch managers using questionnaire with respect to the first adopting year e-banking. We collect secondary data from the respective bank's Annual Reports covering the period from 2009 to 2018. Finally, macroeconomic data were collected from the 'World Data Atlas' website from 2009 to 2018.

3.3 Variables

3.3.1 Dependent variable

We take the banks' performance as the dependent variable. We use return on assets (ROA) as a proxy variable for the bank's performance. ROA is considered the primary measure of banks' profitability, and the net profits are expressed as a percentage of total assets. It illustrates the profits earned per taka of assets and indicates how effectively the authority manages the bank's assets to generate revenues (Jahan, 2012; Golin, 2001). This measure is used by Dey (2014), Abaeenewe et al. (2013), Khrawish and Al-Sa'di (2011), Oyewole et al. (2013) and Siddik et al. (2016). To compute ROA, we calculate profit after taxations divided by total assets.

3.3.2 Independent Variable

This research is conducted to investigate the impact of e-banking on the performance of commercial banks in Bangladesh. Hence, e-banking is considered the sole independent variable. E-banking takes value from the number of experienced years of adopting e-banking by respective commercial banks. Mapharing and Basuhi (2017), Yang et al. (2018), Siddik et al. (2016) and Oyewole et al. (2013) point out that e-banking influences positively on banks' performance indicating the higher is the number of experience of adopting e-banking, the greater is the profitability of banks. We expect a positive sign for e-banking.

3.3.3 Control Variables

To control other variables, it is necessary to use them in the literature as possible determinants of banks' performance to isolate the effect of e-banking on banks' performance. Two sets of control variables are expected to influence banks' performance: the bank-specific and the macroeconomic determinants. The set of bank-specific variables are as follows:

Capital Adequacy: Capital adequacy (CAPTL) is a critical determinant of a bank's performance which plays a vital role in supporting the safety and soundness of banks (Flamini et al., 2009). A bank with a higher capital to assets ratio needs lower external financing, as external financing thereby reduces high cost, which provides higher profitability for banks (Naceur and Goaied, 2001). As a proxy of bank capital (CAPTL), we use the equity capital ratio to total assets and expect a positive sign for this variable.

Bank Size:The size (SZE) of the bank, as a control variable, is included to account for size-related economies and diseconomies of scale. According to Flamini et al. (2009), modern financial intermediation theory predicts the efficiency benefits of a bank's size, implying that larger banks may experience higher due to economies of scale. We compute the total assets in the Billion Taka of banks to measure the size.

Liquidity: How much a bank can meet the short term obligations is indicated by liquidity (LQDTY). A lower rate of return is observed in the case of liquid assets. High liquidity would negatively affect the bank's profitability (Guru et al., 2000 and Siddik et al., 2016). On the other hand, Samad (2015) reports a significant positive impact of liquidity on the bank's profitability. We use the ratio of total loans to total deposits to measure liquidity (LQDTY).

Credit Risk:Another critical determinant of a bank's performance is Credit risk (CRRK). Bank profitability decreases if credit risk increases. Banks can improve their profitability by minimising the credit risk level through improving their appropriate lending policies (Al-Smadi and Al-Wabel, 2011, and Siddik et al., 2016). To measure credit risk (CRRK), we use the ratio of nonperforming loans to total loans, and a negative sign is expected for this variable.

Earnings per Share:An important determinant of bank performance is Earnings per share (EPS). Earnings per share are calculated as a bank's profit divided by the outstanding shares of its common stock. To measure earnings per share, we use the ratio of a bank's profit to the outstanding shares of its common stock. We expect a positive sign for this variable.

Operating Efficiency:Operating efficiency (OPE) is another significant determinant of banks' performance. Naifer (2010) finds that the bank with the higher operating efficiency, the lower the bank's profit. To measure operating efficiency (OPE), we use the ratio of total operating expenses to total operating income. A negative sign is expected for this variable. Besides the above bank-specific variables, two macroeconomic variables are used as control variables. The macroeconomic variables are as follows:

Economic Growth: As a control variable, economic growth (RGDP) impacts the bank's performance. During economic slowdowns, banks' lending could reduce and deteriorate credit quality, lowering the bank's performance (Athanasoglou et al., 2008). We measure economic growth by real GDP growth and expect a positive sign for this variable.

Inflation Rate: The relationship between inflation and the bank's performance relies on whether the inflation rate in the future is anticipated or not (Flamini et al., 2009). Trujillo-Ponce (2013) shows a positive relationship between inflation and banks' return on assets (ROA). To measure the inflation rate (INF), we use the current inflation rate of the country. We expect a positive sign for this variable. The calculating procedures and the explanations of these variables are summarised in Table 1.

Table 1: Summary of variables and their specification used in this study

Variables			Acronym	Measurement	Expected Sign
Dependent variable		Return on Asset	ROA	Net profit (after tax) / total assets	N/A
Independent variable		Electronic Banking	E-BANK	Number of experience years of adopting e-banking by banks	+
Control variables	Bank-specific variables	Capital Adequacy	CAPTL	Equity capital / total assets	+
		Bank Size	SZE	Total assets	+ / -
		Liquidity	LQDTY	Total loans / total deposits	+ / -
		Credit Risk	CRRK	Nonperforming loans / total loans	-
		Earnings per Share	EPS	(Net income-Preferred dividends) / Weighted average common shares outstanding	+
		Operating Efficiency	OPE	Total operating expenses / total operating incomes	-
	Macroeconomic variables	Economic Growth	RGDP	Real GDP growth rate	+
		Inflation Rate	INF	Current period inflation rate	+

3.4 Regression Techniques and Model Specification

Random effects model (REM) and fixed effects model (FEM), and generalised method of moments (GMM) is applied to determine the relative importance of independent and each control variable in influencing the banks' performance.

3.4.1 Fixed Effects Model (FEM)

A fixed-effects model is a statistical model whose parameters are fixed or non-random quantities in statistics. The fixed effect is because each bank's intercept does not vary over time, i.e., time-invariant though the intercept may differ across the selected banks. (Adeusi *et al.*, 2014). However, fixed effects models help with controlling for unobserved heterogeneity when this heterogeneity is constant over time. The individual-specific effects are correlated with the independent variables is an assumption of fixed effect. The basic equation for the fixed effects model (FEM) is:

$$Y_t = \alpha_i + \beta_1 X_t + \varepsilon_t \qquad (1)$$

$$[For\ t = 1\ldots,T \text{ and } i = 1,\ldots,N]$$

Where, $Y_{\_it}$=the dependent variable observed for individual i and time t; $X_{\_it}$= the independent variable; β_1= the coefficient for independent variable;α_i = the unknown intercept for individual effect; ε_{it} = the error term.

3.4.2 Random Effects Model (REM)

A random-effects model, also known as the variance components model, is a statistical model where the model parameters are random. The random-effects model helps control unobserved heterogeneity when the heterogeneity is time-invariant and not correlated with independent variables. The constant variance of the individual-specific effect is also an assumption of the random-effects model. Random effects then are efficient and should be used (over fixed effects) if the assumptions are satisfied. The basic equation for the random-effects model (REM) is:

$$Y_t = \alpha_0 + \beta_1 X_t + \mu_i + \varepsilon_t \qquad (2)$$

Where, Y_{it} = the dependent variable for individual i and time t; X_{it} = the explanatory variable for individuali and time t; β_1 = the coefficient of explanatory variable; μ_i = the individual time-invariant effect of i; ε_{it} = the error term; α_0 = the constant/intercept term. The random-effects model adds the term μ_i, but this term does not appear in the fixed-effects model.

3.4.3 Generalised Method of Moments (GMM)

Generally, Pooled OLS, Fixed Effects and/or Random Effects models are employed for panel data considering the banking literature. However, when a lagged dependent variable is important, particularly in a few periods and many observations, a difficulty arises with these models (Nickell, 1981). If there is a correlation between the independent variables and the lagged dependent variable to some degree, the coefficients may also be seriously biased (Heffernan and Fu, 2014). In this case, the dynamic panel data analysis based on the generalised method of moments (GMM) is mainly used to solve this problem. The solutions to the problems of endogeneity of the variables, simultaneity bias, reverse causality and omitted variables are provided by the GMM. System GMM estimator to combine the first difference in equations with equation at the level in which the variables are instrumented by their first differences is proposed by Blundell and Bond (1998). The basic equation for the system GMM approach is:

$$Y_t = \alpha_0 + \gamma_1 Y_{t-1} + \beta_1 X_t + \mu_i + \varepsilon_t \qquad (3)$$

Where, Y_{it}= the dependent variable for individual i and time t; $Y_{(it-1)}$ = the lag dependent variable for individual i and time t; X_{it} = the explanatory variable for individual i and time t; γ_1= the lag coefficient; μ_i= unobserved individual time-invariant effect; ε_{it} = the error term; α_0= the constant term.

3.4.4 Empirical Model Specification

The fixed effects method (FEM) or random-effects method (REM) is taken after the Hausman test to estimate the relationship between the dependent and explanatory variables. To make the estimates more appropriate and relevant, the generalised method of moments (GMM) is also applied to establish the relationship between dependent and explanatory variables. The empirical Model 1, Model 2, and Model 3 are shown for FEM, REM and GMM, respectively, concerning our study.

$$
\begin{aligned}
Model\,1{:}\,ROA_{it} &= \alpha_i + \beta_1 EBANK_{it} + \beta_2 CAPTL_{it} + \beta_3 SZE_{it} + \beta_4 LQDTY_{it} \\
&+\beta_5 CRRK_{it} + \beta_6 EPS_{it} + \beta_7 OPE_{it} + \beta_8 RGDP_{it} \\
&+\beta_9 INF_{it} + \varepsilon_{it} \qquad (4)
\end{aligned}
$$

$$
\begin{aligned}
Model\,2{:}\,ROA_{it} &= \alpha_0 + \beta_1 EBANK_{it} + \beta_2 CAPTL_{it} + \beta_3 SZE_{it} + \beta_4 LQDTY_{it} \\
&+\beta_5 CRRK_{it} + \beta_6 EPS_{it} + \beta_7 OPE_{it} + \beta_8 RGDP_{it} \\
&+\beta_9 INF_{it} + \mu_i + \varepsilon_{it} \qquad (5)
\end{aligned}
$$

$$
\begin{aligned}
Model\,3{:}\,ROA_{it} &= \alpha_0 + \gamma_1 ROA_{it-1} + \beta_1 EBANK_{it} + \beta_2 CAPTL_{it} + \beta_3 SZE_{it} \\
&+\beta_4 LQDTY_{it} + \beta_5 CRRK_{it} + \beta_6 EPS_{it} + \beta_7 OPE_{it} + \beta_8 RGDP_{it} \\
&+\beta_9 INF_{it} + \mu_i + \varepsilon_{it} \qquad (10)
\end{aligned}
$$

Where, ROA_{it} = return on assets of bank i for year t; $EBANK_{it}$= number of experience years of adopting e-banking of bank i for year t; $CAPTL_{it}$ = capital adequacy ratio of Banki for year t; SZE_{it} = total asset size of bank i for year t; 〖 $LQDTY_{it}$= liquidity of bank i for year t; $CRRK_{it}$= credit risk of bank i for year t; EPS_{it} = earnings per share of bank i for year t; OPE_{it} = operating efficiency of bank i for year t; DPA_{it} = deposit to asset ratio of bank i for year t; RGD_{it} = GDP growth rate for year t; INF_{it}= inflation rate for year t; t = period (years); i= cross-sectional observations (Banks); $\beta_1, \ldots\ldots, \beta_9$= coefficients; $\varepsilon_{(it\,)}$= error term.

4. Empirical Results and Discussions

4.1 Correlation Analysis

A widely used statistical estimation technique to determine the degree of relationship between two explanatory variables is correlation analysis, shown in Table 2.

The correlation matrix (shown in Table 2) indicates the degree of relationship between the explanatory variables. It is seen from Table 3, the largest value of the correlation coefficient is 0.565 between earnings per share (EPS) and credit risk (CRRK). There is no multicollinearity problem if the correlation coefficient is low. Gujarati (2004) reports that multicollinearity may be a serious problem if a high pair-wise correlation coefficient exists between two explanatory variables,

Table 2: Matrix of Correlations between Independent Variables

Variables	EBANK	CAPTL	SZE	LQDTY	CRRK	EPS	OPE	RGDP	INF
EBANK	1.000								
CAPTL	-0.050	1.000							
SZE	-0.039	-0.260	1.000						
LQDTY	0.352	-0.115	-0.353	1.000					
CRRK	-0.185	0.002	0.178	-0.148	1.000				
EPS	-0.440	-0.052	0.120	-0.379	0.565	1.000			
OPE	-0.051	0.041	-0.009	-0.008	-0.034	0.017	1.000		
RGDP	0.448	0.087	0.436	0.270	0.048	-0.383	0.071	1.000	
INF	-0.220	-0.059	-0.199	-0.024	-0.087	0.046	-0.069	-0.223	1.000

say, over 0.8. However, in our analysis, the highest correlation coefficient is 0.565, which is lower than 0.8. So, the multicollinearity problem does not appear between explanatory variables.

4.2 Hausman's (1978) Specification Test

Hausman test is a crucial specification test that helps decidė between random effects model (REM) and fixed effects model (FEM). The random-effects model is biased, and the fixed effects model is the appropriate estimation procedure if the Hausman test rejects the null hypothesis. However, if the Hausman test accepts the null hypothesis, the random-effects model is more appropriate than the fixed effects model. The hypotheses are as follows:

Null: Random effects is appropriate

Alternative: Fixed effects is appropriate

Table 3 shows the output of the Hausman test for one dependent variable, ROA. Here, the null hypothesis is accepted as the Probability$>\chi^2$value is 0.0568which is greater than 5%. It indicates that the random-effects model (REM) is appropriate rather than the fixed effects model (FEM). So, it is relevant to estimate the Model 2: ROA rather than Model 1: ROA between the two models.

Table 3: Output of Hausman's Specification Test

Hausman Test	Model 1: ROA (FEM)	Model 2: ROA (REM)
χ^2		15.12
Probability> χ^2		0.0568

4.3 Regression Results

Table 4 shows the REM and GMM results for ROA, where R^2 indicates that the explanatory variables explain 28.73% variability in the dependent variable (Return on Assets). The Sargan test p-value is 0.8443, which accepts that the hypothesis of over-identifying restrictions is valid. ROA is also positively and

Table 4: REM and System GMM Regression Results for Model 2 and Model 3

Explanatory Variables	REM Results for Model 2: ROA			System GMM Results for Model 3: ROA		
	Coefficient	t-value	p-value	Coefficient	t-value	p-value
ROA (L1)				0.1517179*	1.83	0.067
EBANK	0.0007695**	2.00	0.046	0.0021237*	1.81	0.070
CAPTL	0.0320802*	1.83	0.067	0.0520488**	2.13	0.034
SZE	0.0000104	0.59	0.554	0.0000162	0.71	0.477
LQDTY	0.0248017	1.34	0.180	-0.0180384	-0.61	0.545
CRRK	-0.023955***	-4.43	0.000	-0.029188***	-4.69	0.000
EPS	0.0001166	1.45	0.147	0.0003322***	2.88	0.004
OPE	-0.0016404	-1.53	0.126	-0.0007874	-0.67	0.505
RGDP	-0.0051722	-1.31	0.189	0.0015587	0.28	0.783
INF	0.0031145***	3.47	0.001	0.0057674***	4.28	0.000
Constant	-0.0094543	-0.42	0.676	-0.0615263**	-2.12	0.034
Overall R^2		0.3400				
R^2 between		0.5345				
R^2 within		0.2873				
Wald χ^2		54.55			74.49	
Prob>χ^2		0.0000			0.0000	
Sargan test (p-value					33.7009 (0.8443)	

Note: *, ** and *** indicate 10, 5 and 1 percent significance levels respectively significantly related to the lagged value of ROA proxied by ROA (L1), which reveals that banks with a high level of ROA in the previous year earn more ROA in the current year.

E-banking (EBANK) has a significant positive impact for both results (REM and GMM) on the performance of commercial banks in terms of return on assets (ROA). EBANK positively influences ROA at the significance levels 10% and 5% for Model 2 and Model 3, respectively. If the number of years of experience of adopting e-banking by commercial banks in Bangladesh increases, the banks' ROA improves, and thus, the profits of commercial banks in Bangladesh improve. This result is similar to the studies by Yang et al. (2018), Siddik et al. (2016), Oyewole et al. (2013), Akram and Allam (2010), Hernando and Nieto (2007), Mapharing and Basuhi (2017) and Ngango et al. (2015) who find that e-banking has a positive and significant effect on performance in terms of ROA for studied banks.

Capital adequacy has a significant positive impact on the performance of commercial banks in Bangladesh in terms of ROA for both models (Model 2 and Model 3). The result implies that the higher the equity to assets ratio, the higher the Bangladeshi commercial banks' profits in terms of return on assets. This result is consistent with studies by Rahman et al. (2015), Oyewole et al. (2013), Malhotra and Singh (2009), San and Heng (2013), and Tam et al. (2017), who find a significant positive relationship between capital adequacy and banks' ROA.

Both the REM and GMM results show a significant [at 1% significance level] negative relationship between banks' return on assets and credit risk. An increase in banks' credit risk is associated with a decline in the profitability of commercial banks in Bangladesh. This result is similar to the findings by Athanasoglou et al. (2008), Flamini et al. (2009), Al-Smadi and Al-wabel (2011), Siddik et al. (2016), Oyewole et al. (2013) and Tam et al. (2017).

The GMM results reveal that earning per share has had a significant [at 1% significance level] positive effect on the banks' ROA. Thus, an increase in earnings per share improves banks' performance, which is consistent with the finding by Saeed and Tahir (2015). Inflation has a significant [at 1% significance level] positive impact on the performance of commercial banks in Bangladesh for both results (REM and GMM). This result is similar to the finding of the studies by Goddard et al. (2004), Tam et al. (2017), Malhotra and Singh (2009) and Athanasoglou et al. (2008). Whereas bank size, liquidity, operating efficiency and GDP growth rate have insignificant effects with mixed direction on the performance of banks in terms of return on assets.

5. Conclusions and Recommendations

E-banking is one of the critical determinants to affect the performance of commercial banks in Bangladesh. Various other factors affect the banks' performance as well. The main objective of this research is to investigate the impact of e-banking technology on the performance of commercial banks in Bangladesh. Applying simple random sampling and based on data availability, this study selects 12 commercial banks covering the period from 2009 to 2018. The findings of the study are more comprehensive since this study employs two different regression techniques, namely random effects model (REM) and system generalised method of moments (GMM), to estimate the relationship between e-banking (electronic banking) and the performance of commercial banks in Bangladesh along with other bank-specific and macroeconomic factors.

Empirical results show that e-banking has a gradual significant positive impact on banks' performance being proxied by banks' return on assets (ROA). Results from REM and GMM further reveal that e-banking affects the performance of commercial banks in Bangladesh at the significance levels of 5% and 10%, respectively. The empirical results show that except for e-banking, control variables such as capital, credit risk, earnings per share, and inflation have had a significant impact on the banks' performance with a positive or negative direction. Though we find a significant positive impact of e-banking on the performance of commercial banks in Bangladesh measured by ROA, e-banking is valued by considering the first adopting year with any form of e-banking services by respective commercial banks in Bangladesh. It is recommended that banks should adopt all forms of e-banking services to improve their performance. Since all the commercial banks in Bangladesh have not yet ensured all sorts of e-banking services, this study suggests that banks management should invest more to setup comprehensive e-banking technologies in their banks as well as arrange to provide required knowledge about using e-banking to their employees and clients in order to receive higher profitability. We believe that future researchers would concentrate on confirming our findings by conducting more research on this issue.

References

Abaenewe, Z. C., Ogbulu, O. M., & Ndugbu, M. O. (2013). Electronic banking and bank performance in Nigeria. West African Journal of Industrial and Academic Research, 6(1): 171–187.

Abdullai, H. M., & Micheni, E. M. (2018). Effect of Internet Banking on Operational Performance of Commercial Banks in Nakuru County, Kenya. International Journal of Economics, Finance and Management Sciences, 6(2): 60-65.

Adeusi, S. O., Kolapo, F. T., & Aluko, A. O. (2014). Determinants of Commercial Banks' Profitability Panel Evidence from Nigeria. International Journal of Economics, Commerce and Management, 2(12): 1-18.

Aduda, J., & Kingoo, N. (2012). The relationship between electronic banking and financial performance among commercial banks in Kenya. Journal of Finance and Investment Analysis, 1(3): 99–118.

Ahmed, S. M. S., Rayhan, S. J., Islam, M. A., & Mahjabin, S. (2011). Problems and prospects of mobile banking in Bangladesh. Journal of Information Engineering and Applications, 1(6): 16-35.

Akram. J. K., & Allam, M. H. (2010). The Impact of Information Technology on improving Banking Performance Matrix: Jordanian Banks as Case Study. European Mediterranean and Middle Eastern Conference on Information System, April 12th –13th, Abu Dhabi, UAE.

Al-Smadi, M. O., & Al-Wabel, S. A. (2011). The impact of e-banking on the performance of Jordanian banks. Journal of Internet Banking and Commerce, 16(2): 1–10.

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. Journal of International Financial Markets, Institutions and Money, 18(2): 121–136.

Baten, M. A., & Kamil, A. A. (2010). E-banking of economic prospects in Bangladesh. Journal of Internet Banking and Commerce, 15(2): 1–10.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87(1): 115-143.

Dey, M. (2014). Profitability of commercial banks in Bangladesh: a multivariate analysis. IOSR Journal of Business and Management, 16(4): 92–95.

Flamini, V., Schumacher, L., & McDonald, C. A. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa. IMF Working Paper No. 09/15. International Monetary Fund. Hall, M.; Weiss, L. 1967. Firm size and profitability. The Review of Economics and Statistics, 49(3): 319–331.

Goddard, J.A., Molyneux, P., &Wilson, J. (2004). The profitability of European banks: a cross-sectional and dynamic panel analysis. The Manchester School 72: 363–381.

Golin, J. (2001). The Bank Credit Analysis Handbook: A Guide for Analysts, Bankers and Investors. John Wiley & Sons (Asia) Pre Ltd.

Gujarati, D. N. (2004). Basic Econometrics, 4th Edition, Tata Mc-Graw-Hill Publishing Company Limited, New Delhi, India.

Hassan, S. U., Mamman, A., & Farouk, M. A. (2013). Electronic banking products and performance of Nigerian listed deposit money banks. American Journal of Computer Technology and Application, 1(10): 138-148.

Hefferman, S. A., &Fu, X. (2014). Determinants of financial performance in Chinese banking. Applied Financial Economics, 20(20): 1585-1600.

Hernando, I., &Nieto, M. J. (2007). Is the Internet delivery channel changing banks' performance? The case of Spanish banks. Journal of Banking & Finance, 31(4): 1083–1099.

Hossein, S. M. (2013). Consideration of the effect of E-Banking on Bank Profitability; Case Study Selected Asian Countries. Journal of Economics and Sustainable Development, 4(11): 112-117.

Hausman, J. A. (1978). Specification Tests in Econometrics. Econometrica, 46 (6): 1251–1271.

Jahan, N. (2012). Determinants of bank's profitability: evidence from Bangladesh. Indian Journal of Finance, 6(2): 32–38.

Khrawish, H. A., & Al-Sa'di, N. M. (2011). The impact of e-banking on bank profitability: evidence from Jordan. Middle Eastern Finance and Economics, 13: 142–158.

Kondabagil, J. (2007). Risk management in electronic banking: concepts and best practices. Singapore: John Wiley & Sons, 454: 75–90.

Malhotra, P., &Singh, B. (2009). The impact of internet banking on bank performance and risk: the Indian experience. Eurasian Journal of Business and Economics, 2(4): 43–62.

Mapharing, M., & Basuhi, E. (2017). Electronic Banking and Bank Performance: Botswana Context. Journal of Accounting, Business and Finance Research, 1(1): 84-93.

Migdadi, Y. K. A. A. (2012). The Developing Economies' Banks Branches Operational Strategy in the Era of E-Banking: The Case of Jordan. Journal of Emerging Technologies in Web Intelligence, 4(2): 189-197.

Musa, A., Kurfi, S. A., & Hassan, H. (2015). The Impact of Online Banking on the Performance of Nigerian Banking Sector. ICoEC 2015 (20-22 October), 63-68.

Naceur, S. B., & Goaied, M. (2001). The determinants of the Tunisian deposit banks' performance. Applied Financial Economics, 11(3): 317–319.

Naifer, N. (2010). The determinants of bank performance: an analysis of theory and practice in the case of an emerging market. International Journal of Business Environment, 3(4): 460-470.

Ngango, A., Mbabazize, D. M., & Shukla, D. J. (2015). E-Banking and Performance Of Commercial Banks In Rwanda A Case Of Bank Of Kigali. European Journal of Accounting Auditing and Finance Research, 3(4): 25-57.

Nickell, S. (1981). Biases in dynamic models with fixed effects. Econometrica, 49: 1417–1426.

Onay, C., & Ozsoz, E. (2013). The impact of internet banking on brick and mortar branches: the case of Turkey. Journal of Financial Services Research, 44(2): 187–204.

Oyewole, O. S., Abba, M., &El-maude, J. G. (2013). E-banking and bank performance: Evidence from Nigeria. International Journal of Scientific Engineering and Technology, 2(8): 766-771.

Rahman, M. M., Hamid, M. K., &Khan, M. A. M. (2015). Determinants of Bank Profitability: Empirical Evidence from Bangladesh. International Journal of Business and Management, 10(8): 135-150.

Saeed, J. T., &Tahir, J. H. (2015). Relationship between Earning Per Share and Bank Profitability. International Journal of Novel Research in Humanity and Social Sciences, 2(2): 4-13.

Samad, A. (2015). Determinants of bank profitability: Empirical evidence from

Bangladesh commercial banks. International Journal of Financial Research, 6(3): 173 - 179

San, O. T., & Heng, T. B. (2013). Factors affecting the profitability of Malaysian commercial banks. African Journal of Business Management, 7(8): 649-660.

Sargan, J. D. (1958). The Estimation of Economic Relationships Using Instrumental Variables. Econometrica. 26 (3): 393–415.

Sarker, M. N. I., Islam, M. S., & Rahman, M. M. (2015). Effects of electronic banking on performance of banks in Bangladesh. International Journal of Applied Research, 1(1): 28-34.

Siddik, M. N. A., Sun, G., Kabiraj, S., Shanmugan, J., & Yanjuan, C. (2016). Impacts of E-Banking on Performance of Banks in a Developing Economy: Empirical Evidence from Bangladesh. Journal of Business Economics and Management, 17(6): 1066-1080.

Simpson, J. (2002). The Impact of the Internet in Banking: Observations and Evidence from Developed and Emerging Markets. Telematics and Informatics, 19: 315-330.

Tam, L. T., Trang, P. X., & Hanh, L. N. (2017). Determinants of Bank Profitability: The Case of Commercial Banks Listed on Vietnam's Stock Exchange. Journal of Business Sciences (JBS), 1(2): 1-12.

Trujillo-Ponce, A. (2013). What determines the profitability of banks? Evidence from Spain. Accounting & Finance, 53(2): 561–586.

Vila, J. A., Serna-Olvera, J., Fernandez, L., Medina, M., & Sfakianakis, A. (2013). A professional view on E-banking authentication: Challenges and recommendations. 2013. 9th International Conference on Information Assurance and Security (IAS). doi:10.1109/isias.2013.6947731.

Yang, S., Li, Z., Ma, Y., & Chen, X. (2018). Does Electronic Banking Really Improve Bank Performance? Evidence in China. International Journal of Economics and Finance, 10(2): 82-94.

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Economic Appraisal of Banana Production in Kushtia District: A Field-Based Study

Kazi Mostafa Arif*

Abstract

Banana is one of the major fruit crops in Bangladesh. The cultivation of bananas has changed the fate of many farmers in six Upazilas of Kushtia district. This study aims to estimate the cost and returns of banana cultivation of banana cultivating farmers in Sadar Upazila of Kushtia district in Bangladesh. This study also analyses the socio-economic characteristics of banana cultivating farmers, and this study detects the problems of banana cultivation. Primary data were collected from 90 banana cultivating farmers from Kushtia Sadar Upazila using purposive sampling. Both descriptive and econometric techniques have been utilised to analyse the collected data. The findings show that a large part (51%) of banana growers are 41 years and above. Thirty-five per centof banana farmers have no schooling. Fifty percent of banana farmers solely depend on agriculture. Most farmers (46%) have small families, i.e., four or below members exist per family. Above 44 percent banana cultivating farmers' monthly income is between the range of BDT 10,000-15,000. One of the third farmers cultivates their land. Major parts (33%) of farmers have experienced more than twenty years. It indicates a good sign for banana cultivation. The Benefit-Cost Ratio(BCR) on a full-cost basis is 3.24, and the return over cost is more than double, indicating that banana cultivation is a highly profitable business. The co-efficient of human labour, land preparation, irrigation, and fertiliser costs are significant at a 5% level. Despite the positive effect of sucker cost, pesticide cost, banana farming experience, and years of schooling on banana production, these are

* Professor, Department of Economics, Islamic University, Kushtia. E-mail: arifeconomics @yahoo.com

not statistically significant. Major problems of the banana cultivators are the higher price of fertiliser, disease and insect's infestation, low market price, financial problems, inadequate extension service. The crucial favourable factors affecting banana production in the study area are easy to access to the market, efficient transport facilities, and favourable weather. Lastly, there have been suggested some recommendations to uplift banana cultivation.

JEL Classification *Q12 · C81 · D18 · D24 · O13 · O22*

Keywords *Production of Banana · Banana Cultivation · Benefit-cost Ratio· Bangladesh*

1. Introduction

Bangladesh, a country of South Asia, stands on the delta of the Padma and Jamuna rivers in the north-western region of the Indian subcontinent. Bangladesh is a densely populated country globally, and the density of population is 1115.62 people per square kilometre. The estimated population is 163.05 million in 2019, making Bangladesh the 8th populous country globally. Bangladesh, currently, is the 92nd largest country in the world, spanning 147570 km2 in terms of surface area. Kushtia district is the 43r dmost prominent district of Bangladesh by area and thirty fourth-largest by population (BBS, 2015). Kushtia is predominantly an agricultural district. Various crops and fruits are grown in this district. The principal crops and fruits are paddy, wheat, mustard, potato, betel leaf, tobacco, mango, jackfruit, banana, litchi, guava. An eco-friendly agriculture system is essential for long-term food security and sustainable development in Bangladesh. For that reason, the present government has given the highest priority tothe overall development of the agriculture sector in the Seventh Five Year Plan and National Agriculture Policy.

Over the last few years, there has been an increasing trend in food production. Despite this increasing trend,Bangladesh stands on the 83rd position in the recently published Global Food Security Index-2019, the lowest among the South-Asian countries. Though Bangladesh has gained recognition as a lower-middle-income country in 2015, it secured the 83rd position in the case of food security. So, the government should consider the formation of a right to food law on a priority basis. Despite the increase in the income of people, the food quality is not good. A major part of citizensis still severely food insecure and malnourished. Based on the current population growth rate, a projected population will be over 200 million by 2050. This demographic pressure immensely affects food security. Roughly half of Bangladeshis are unable to access sufficient food to meet their needs(USAID, 2019)

Last year, World Food Day was observed in Bangladesh, emphasising food security for the people by increasing the production of healthy diets. The day was observed under the theme "Our Actions Are Our Future". Poor diets are now being a leading cause of illness, linked to one-fifth of all deaths worldwide. In this regard, all-out effort should be taken to tackle this food insecurity. Overall, consensus exists among policymakers and academicians that crop diversifications are necessary to fulfil this gap. Banana is one of the critical tropical agricultural products that can make up the nutritional deficit in our country, which is grown all over the year throughout the country.

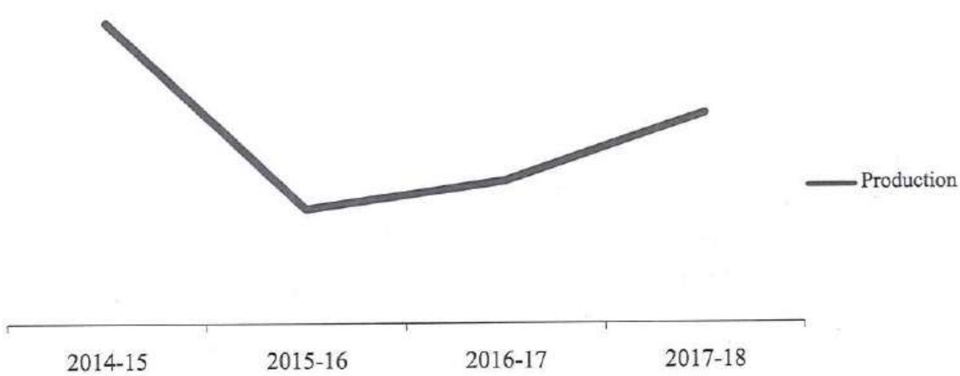
Moreover, which is cheap and covers significant nutritional value. Bananas represent 20% of all fruits crops produced in Bangladesh, with a domestic market share of 36%. Banana production provides suitable options for subsistence and income generation in Bangladesh. It is a commercial fruit, but in Bangladesh, it is grown in a limited area commercially. There are plenty of opportunities to cultivate bananas in the Kushtia district due to its geographical location and favourable weather. The country's total banana production, Kushtia, contributes 5% only (Agriculture Year Book, 2017-2018). The following table and graph show the scenario of banana production in Kushtia.

Table 1: Banana Production in Kushtia District

2014-15		2015-16		2016-17		2017-18	
Area (acres)	Production (M. Ton)	Area (acres)	Production (M. Ton)	Area (acres)	Production (M. Ton)	Area (acres)	Production (M. Ton)
3980	41193	3835	38592	3878	38988	3928	39914

Source: Agriculture Year Book, 2017-2018

Figure 1: Production of Banana



Under the above circumstances, the following questions try to be answered in this study.

- What is the socio-economic status of banana cultivating farmers in Kushtia?
- Is this cultivation beneficial or feasible through analysing the costs and benefits?
- What could be the appropriate recommendation for the improvement of banana cultivation?

This study is divided into six parts. The following section provides the objectives of this study. It is followed by a brief outline of the literature review-section four presents methodology. Then section five exhibits findings and discussion. The final section deals conclusion and recommendation.

2. Objectives

The main objective is to study the economic profitability of banana cultivation in the Kushtia district. The specific objectives are

- To assess the socio-economic status of banana growing farmers in the study area
- To study the cost and returns of bananas in the study area
- To explore the problems of banana cultivation and offer a development strategy for producing bananas.

3. Literature Review

In this section,a few works of literature were reviewed related to banana cultivation in Bangladesh. Notable analysis of Prodhan et al. (2017), Mukul and Rahman (2013), Kamal et al. (2014), Kamal (1996), Roy (1996), Nargis (1997) have been reviewed here. While reviewing the literature, it is noticed that district-wise analysis is very limited in Bangladesh though many works have been done around the world.

Mukul and Rahman(2013) conducted a study in the Narsingdi district from January to March 2013 based on primary data collected from 20 farmers, ten wholesalers, and ten retailers to assess banana production's relative profitability benefitting cost ratio for producers, wholesalers and retailers, respectively. They found that profits for the producer, wholesaler and retailer in banana production were Taka 55002.8 per Hectare, Taka 59.08 per Chari, and Taka 122.67 per Chari, benefit-cost ratio for producers, wholesalers, and retailers were 1.40, 1.30 and

1.41 respectively. One thing is that the sample size which is small to decide any general conclusion. Moreover, this study considers only the profitability of banana production. From a different angle, Prodhan et al. (2017) performed a study on knowledge, adoption, and attitude on banana cultivation technology of the banana growers of Bangladesh from a random sample of 100 banana growers of Salmara village Gaibandha district. They explored that most banana growers had a medium knowledge, adoption, and attitude towards banana cultivation technology. The 62% of banana growers belong to a medium level of adoption of banana cultivation technology, whereas 21 % of banana growers had a high level of adoption, and 17% of them had a low level of adoption. The economic appraisal was absent in this study. Kamal et al. (2014) aimed to determine the socio-economic status of banana growers in Bangladesh. They collected information from 60 loanee farmers were selected from four villages of Shibganj Upazila in Bogra district. They found that the average family sizes were 6.78, 4.71, 6.67 and 5.80 for small, medium, large and all farms, respectively. About 50.93 % of farm owners belong to the age group of 31 to 40 years. Only 12.67 % of banana growers were illiterate. About 62 % of farm owners dealt with agriculture as their primary occupation. The overall average farm size was 237.29 decimal. However, the farm sizes were 83, 224 and 405 decimals for small, medium and large farms. Family income derived from non-farm sources was more significant than that from farm income. The overall annual income was Taka 55414.7, in which banana farming contributed 35.32 %. They identified several problems in their study. Among them, problems of credit, non-availability or insufficiency of credit, high-interest rate and loan transaction cost, low prices of output, high prices of inputs, lack of sucker/seed of banana, high prices of fertiliser and insecticides, lack of storage facilities are a significant problem faced by the farmers in the study areas. The short come is the tiny sample size for their study. Kamal (1996) surveyed some selected areas of Joypurhat and found that banana production was more profitable than sugarcane. He explored that per hectare net income of bananas was Taka 67650.10, whereas sugarcane Taka 10980.66. Roy (1996) studied comparative economic analysis of banana and other crops production in Mymensingh district. His work considered the cost and return and the relative profitability of banana growers for comparison in that district. He detected that per hectare gross expense of banana production with intercrops was Taka 65583.13, while per hectare total return was Taka 111191297.24. The net return was Taka 12514.11. It can be seen that Roy(1996) also did not analyse the socio-economic characteristics of banana growers in that region. Nargis (1997) carried a comparative study on banana cultivation with other vegetables in some selected areas of Muktagacha Thana. The study's major findings were that per hectare production cost of banana Taka 121438 and other vegetables Taka 92011, respectively. This study was done on the economic aspects of banana cultivation.

Most of the works have been done on banana cultivation, only considering the cost and returns of banana production. Moreover, limited studies have been performed to analyse the socio-economic characteristics of banana growers. However, no study has been carried out to assess the economic profitability of banana cultivation and the socio-economic characteristics of banana cultivating farmers in the Kushtia district. For that reason, a field-based study is needed to assess the cost and returns of banana cultivation andthe socio-economic conditions of banana cultivating farmers in the Kushtia district.

4. Methodology

4.1 Sampling and Data Collection

A sum of 90 banana cultivating farmers has been selected purposively from the Abdulpur, Harinarayanpur and Jhaudia Unions under Sadar Upazila of Kushtia district. The following table shows the sampling unions and the selected sample number in each union. Questions were both open-ended and close. Data were collected from the study area from June 2019 to August 2019.

Table 2: Sample Size and Distribution

Name of District	Name of Upazila	Name of Union	Number of Samples
Kushtia	Sadar	Abdulpur	30
		Harinarayanpur	30
		Jhaudia	30
Total	1	3	90

Source: Author's Compilation, 2019

4.2 Calculation of Cost and Return

In order to calculate the net return of banana production,the gross value of the production of bananas and total costs were taken into account. The input variable costs such as labour, sucker, fertiliser, irrigation, and pesticide are the considerable main costs required for calculating banana production.

a) Net Return

Net profit = TR-TC

Where,

TR= Total Revenue
TC=Total Cost.

b) Benefit-cost ratio (BCR):
The Benefit-Cost Ratio (BCR) of bananas has been used to identify whether banana cultivation is profitable or not. Here,
BCR =Gross Return /Total Cost.

4.3 Functional analysis

Cobb Douglas Production Function has been utilised to estimate the effects of variables on the production of bananas. The following specification of the model has been applied.

$$Y_i = \beta_0 \ X_1^{\beta_1} X_2^{\beta_2} X_3^{\beta_3} X_4^{\beta_4} X_5^{\beta_6} X_6^{\beta_6} X_7^{\beta_7} X_8^{\beta_8} e^{u_i}$$

In linear form

$$Y_i = \beta_0 + \beta_1 ln\ X_1 + \beta_2 ln\ X_2 + \beta_3 ln\ X_3 + \beta_4 ln\ X_4 + \beta_5 ln\ X_5 + \beta_6 ln\ X_6 + \beta_7 ln\ X_7 + \beta_8 ln\ X_8 + u_i$$

Where Y is the dependent variable, β_0 is the intercept, X_i=X_1 to X_8 are independent variables, $\beta_i = \beta_1$ to $\beta_{(8)}$ are coefficients, and ui is the disturbance term in the production function and ln=natural logarithm.

5. Findings and Discussion

a. Distribution of Banana Cultivating Farmers by Age

According to the agricultural census of Bangladesh, a farm household is classified into three categories such as small (up to 2.4 acres), medium (2.5 to 7.4 acres), and large (7.5 acres or more) (BBS 2011). In the field survey, no banana farmer has been recognised as a large farm in the study area. Following Kamal et al. (2016), three age groups have been categorised for explaining the distribution of

Table 3: Age Distribution of Banana Cultivating Farmers

Age of Group	Small		Medium		Large		All	
(Years)	No.	%	No.	%	No.	%	No.	%
20-30	12	14.5	2	28.6	-	-	14	14
31-40	23	27.7	2	28.6	-	-	25	25
41 to above	48	57.8	3	42.8	-	-	51	51
Total	83	100	7	100			90	100

Source: Author's Compilation Based on Field Survey, 2019 banana cultivating farmers for this study. The age distribution of banana cultivating farmers is presented in table 3. The table shows that the highest number of banana growers (57.8 %) belonged to the age group 41 and above years for small farm while medium farm represents 42.8. It also reveals that the lowest number of banana growers belonged to 20-30 years (14 %) while the highest proportion represents 31-40 years (51%).

b. Education Level of the Banana Cultivating Farmers

To present the educational status of banana cultivating farmers, years of schooling has been utilised, i.e., (i) 0 year, (ii) 1 to 5, (iii) 6 to 10 and (iv) 11 and above.The following table 4 exhibits the educational status of the banana cultivating farmers. The table shows that most banana growers had never gone to school, which indicates they are illiterate. Moreover, the illiterate groups' percentage was 36 and 29 for the small and medium farms, respectively. Fifteen percent of small farm holders were 1 to 5 years of schooling, and no medium farms owner are in this category. The overall picture of educational status is that 34.4 % of banana growers were illiterate and 13.3 % had 1 to 5 years of schooling, 32.2 % had 6 to 10 and 20 % of 11 and above.

Table 4:Education Status of the Banana Cultivating Farmers

Years of Schooling	Small		Medium		Large		All	
	No.	%	No.	%	No.	%	No.	%
0	29	36	2	29	-	-	31	34.4
1 to 5	12	15	0	0	-	-	12	13.3
6 to 10	26	29	3	42	-	-	29	32.2
11 and above	16	20	2	29	-	-	18	20.0
Total	83	100	07	100			90	100

Source: Author's Compilation Based on Field Survey, 2019

c. Occupation of the Banana Growers

Large parts of banana cultivators are occupied in agriculture. Forty-eight percent of small farm owners are engaged in agriculture, while in the case of medium farm owners, it is 72%. Only four percent of small farm owners are involved in service besides agriculture and there is no participation in service for medium farm owners. It can be seen that 46%, 14% of small and medium farm owners have been continuing business with agriculture. A tiny part of small and medium farm owners, i.e., 2% and 14%, run agriculture with other occupations. Since there have not been found large farm owner farmers, that group's percentage is empty here.

Table 5:Occupational Status of Banana Growers

Particulars	Small		Medium		Large		All	
	No.	%	No.	%	No.	%	No.	%
Agriculture	40	48	5	72	-	-	45	50
Agriculture cum Service	3	4	0	0	-	-	3	3
Agriculture cum Business	38	46	1	14	-	-	39	43
Agriculture cum others	2	2	1	14	-	-	3	3
Total	83	100	07	100			90	100

Source: Author's Compilation Based on Field Survey, 2019.

d. Family Type

In this study, family types are categorised based on family members who live in the same household and take a meal from the same kitchen under the administration of the same head of the family. Family is classified into three categories like small, medium and large in the study. The following table 6 shows that 46 percent of farmers have small families, 26 percent of farmers have medium family and 28 percent of farmers have large family respectively. It shows that most of the people belong to small size family.

Table 6:Family Type of the Banana Cultivating Farmers

Particulars	Small		Medium		Large		All	
	No.	%	No.	%	No.	%	No.	%
Small family ≤4	40	48	1	14	-	-	41	46
Medium Family =5	21	25	2	29	-	-	23	26
Large Family ≥6	22	27	4	57	-	-	26	28
Total	83	100	07				90	100

Source: Author's Compilation Based on Field Survey, 2019

5.5 Monthly Family Income

The average monthly income of the banana cultivating farmers has been considered from the earnings of banana cultivation and various income-generating activities during the study period. Selected farmers are grouped into five categories according to the level of total monthly income. The following table shows that 44.4 percent of farmers have the income level of Taka 10001-15000 and it is the highest percentage of farmers. Then 23.4 percent 15.5 percent farmers have the income level of Taka 15001-25000 and Taka 35001-45000 respectively. Only 5.6 percent have Taka 45001 and above earnings. The major part of monthly income is between the first categories due to the large portion of the sample consisting of small farm owners.

Table 7:Monthly Income of the Banana Cultivating Farmers

Farm Type	Monthly Income (in Thousand Taka)					
	10001-15000	15001-25000	25001-35000	35001-45000	45001 and above	Total
Small	40	19	13	8	3	83
Medium	0	2	1	2	2	7
Large	-	-	-	-	-	-
%	44.4	23.4	15.5	11.1	5.6	100
Total						90

Source: Author's Compilation Based on Field Survey, 2019

5.6 Ownership Pattern of Land

Three different categories have been classified for land ownership, i.e., own land rented and leased. Other lands like pond and homestead areas have not been accounted for land ownership except for agricultural land. Tables 8 shows the ownership pattern of land. Most farmers, 74 percent of farmers, have their own land. Eight percent of farmers have cultivated rented land, and 18 percent of land are leased from others.

Table 8:Ownership Pattern of the Banana Growing Farmers

Land Type	Small		Medium		Large		All	
	No.	%	No.	%	No.	%	No.	%
Own	62	75	5	71	-	-	67	74
Rented	7	8	0	0	-	-	7	8
Leased	14	17	2	29	-	-	16	18
Total	83	100	07	100			90	100

Source: Author's Compilation Based on Field Survey, 2019

5 .7 Banana Farming Experience of the Farmers

Farming experience is considered a critical factor in agriculture. The farming experience is expressed in the following table. It shows that 33 percent of farmers have experience 20 to 24 years. Furthermore, 19 percent of farmers have experienced between the ranges 15-19. The same percentage of farmers have experienced between 25 years and above. It can be seen that most of the farmers have enough experience in cultivating bananas.

Table 9:Banana Farming Experience of the Farmers

Experience Range (Years)	Frequency	Percentage
5-9	14	16
10-14	12	13
15-19	17	19
20-24	30	33
25 and above	17	19
Total	90	100

Source: Author's Compilation Based on Field Survey, 2019

5.10 Cost and Return from Banana Cultivation

All variable costs incurred for hired labour, land preparation, cost of sucker, fertilisers, pesticides, and irrigation are considered for calculating the cost of banana cultivation. Family labour was not included here due to data unavailability. While collecting data, it was seen that sucker cost was meagre because maximum banana cultivating farmers extracted sucker from their own land.

Table 10: Cost and Return from Banana Cultivation in the Study Area

Items	Total Amount (BDT) per Bigha
Cost	Amount (BDT)
Labor	5,410
Land Preparation	1,806
Sucker/Seedling cost	143
Irrigation	1,633
Pesticide	403
Fertilizer	5,510
Total Cost	14,905
Total Revenue	63,480
Net Profit	48,375
Benefit Cost Ratio	3.24

Source: Author's Compilation Based on Field Survey, 2019

Net Profit: Net profit is calculated by subtraction from total revenue to the total cost. Total revenue is Taka 63,480 and total cost is Taka 14,905 per Bigha. So the net profit is Taka 48,375.

Benefit-Cost Ratio:Benefit-cost ratio is calculated from the above table by dividing total revenue and total cost on the full cost basis. Total revenue is Taka 63,480 and total cost is Taka 14,905 per Bigha. So the Benefit-Cost Ratio (BCR) on the full cost basis is 3.24.

5.11 Result from Estimation of Cobb-Douglas Production Function

The relationship between input and output of banana cultivation is estimated using the Cobb-Douglas production function. Several explanatory variables are taken into consideration to analyse the productivity of bananas. The effects of the variables on the yield of the banana cultivation are interpreted in table 11.

Table 11:Estimation of Production Function

Explanatory Variables	Coefficients	Std. Err.	p-value
Human Labor (X_1)	-3.50	1.158	0.003
Land Preparation Cost(X_2)	11.76	2.772	0.000
Sucker/Seedling Cost(X_3)	9.12	8.815	0.303
Irrigation Cost(X_4)	13.84	3.456	0.000
Pesticide Cost(X_5)	11.11	8.449	0.192
Fertilizer Cost(X_6)	3.34	0.782	0.000
Banana Farming Experience(X_7)	303.82	793.595	0.702
Years of Schooling(X_8)	2130.89	1294.111	0.103
Constant	-15760.96	20921.78	0.453
F-Value	28.74		0.000
R-squared	0.74		

Dependent variable: Total Revenue, Number of Observation=90

The estimation results show that the co-efficient of human labour, land preparation, irrigation, and fertiliser costs are significant at a 5% level. The coefficient of multiple determinations R-squared is 0.74,which means the explanatory variables considered in the model can explain 74 percent of the variation in banana production. It implies that the variation in banana production mostly depends upon the explanatory variables included in the model. Despite sucker cost, pesticide cost, banana farming experience, and years of schooling positively impacting banana production, their influences are not statistically significant.

The estimated human labour co-efficient is -3.5, indicatinga 1% increase in human labour with the other factor remaining constant would decrease the total revenue by 3.5%. The value of production co-efficient for land preparation cost is 11.76. It reveals that with other factors remaining constant, it would increase the total revenue by 11.76. The value of production co-efficient for irrigation cost is

13.84. The estimated co-efficient reveals that a 1% increase in irrigation cost in the pre-harvesting period with other factors remaining constant would increase the gross return by 13.84 percent. The co-efficient of fertiliser cost is 3.34. It means that a 1% increase in fertiliser cost in the pre-harvesting period with other factors remaining constant would increase the gross return by 3.

5.12 Problems of the Banana Growers

Banana cultivating farmers confront several problems throughout the year in the study area. In this part, a modest attempt has been drawn to identify the most crucial problems of banana cultivating from the opinion of banana growers. Ninety-five percent of farmers responded about the higher price of fertiliser. It was reported that bananas were seriously affected by disease and insect's infestation. Ninety-four percent of farmers reported that they had been suffered from disease and infestation.

Secondly, 42 percent farmers claimed that they do not get competitive market price for banana. The same percentage farmer replied they faced financial problem to cultivate banana. They don't receive any financial facility from government. 40 percent farmers informed that lack of technical knowledge, i.e., inadequate extension service, which hampered their production. Additionally, the high price of insecticides and fertiliser creates a burden to overcome this problem.Along with these lack of quality sucker, credit problem and lack of efficient transport facilities are also important causes of banana cultivation.

Table 12: Problems Faced in the Banana Cultivation

Problems	Frequency	Percentage
Lack of Quality Seed/Sucker	14	16
Credit Problem	15	17
Financial Problem	38	42
Lack of Technical Knowledge	36	40
Low Market Price	38	42
Lack of Efficient Transport Facilities	13	14
Disease and Insects Infestation	85	94
High Price of Fertilizer	86	95

Source: Author's Compilation Based on Field Survey, 2019

5.13 Advantageous Factors of Banana Cultivation

The positive factors for banana cultivation are considered the factors that are beneficial for farmers to cultivate bananas. Usually,a friendly environment, high profit, availability of input are factors that facilitate cultivating bananas. The following table depicts the perception of banana growing farmers about advantageous factors.

The above table reveals that the most advantageous factors are easy to access to market, efficient transport facilities, low input cost, and favourable weather respectively in terms of percentage. The least advantageous factors are easy to access to technical support, available training and adequate support from NGOs.

able 13:Advantageous Factors of Banana Cultivation in the Study Area

Advantageous Factors	Percentage of Responses
Easy Access to Market	93
Easy Access to Technical Support	17
Favourable Weather	68
Low Input Cost	72
Access to Credit	28
Available Training	.03
Adequate Support from NGOs	.07
Efficient Transport Facilities	88

Source: Author's Compilation Based on Field Survey, 2019

6. Conclusion and Recommendations

In this study, an attempt was made to assess the cost and returns of banana cultivation, the socio-economic condition of banana cultivating farmers, and explore problems associated with banana production in Sadar Upazila of Kushtia district in Bangladesh. Primary data were collected from 90 bạnana cultivating farmers from Kushtia Sadar Upazila. Both tabular and econometric techniques were used to analyse the collected data. The study findings reveal that the highest proportion (51%) of banana growers age 41 years and above. Almost 35% of banana farmers have no formal education. One of the main reasons is that most banana growers in this study are small size farm owners. Fifty percent of banana farmers solely depend on agriculture, and then 43 percent of farmers' occupation carrying agriculture with business. The family structure of most farmers (46%) have a small family, i.e., four or below members per family. Most of the banana cultivating farmers' monthly income is between the ranges of Taka 10000-15000. Seventy-four percent of farmers cultivate their own land in the study area. A major part (33%) of farmers have experienced more than twenty years. Itis indicative of a good sign for banana cultivation. The Benefit-Cost Ratio(BCR) on a full cost basis is 3.24, and the return over cost is more than double, indicating that banana cultivation is a highly profitable business. The co-efficient of human labour, land preparation, irrigation, and fertiliser costs are significant at a 5% level.

On the other hand, despite the positive effect of sucker cost, pesticide cost, banana farming experience, and years of schooling on banana production, these are not statistically significant. Major problems of the banana cultivators are the higher price of fertiliser, disease and insect's infestation, low market price, financial problems, inadequate extension service. The crucial favourable factors affecting banana production in the study area are market access, efficient transport facilities, and favourable weather.

Based on the findings of the study, the following recommendations may be forwarded for the development of banana cultivations:

1. To increase banana production sufficient supply of fertiliser ata fair price should be ensured.
2. Pure pesticide and pest management knowledge should be available to banana growers. Moreover, cheap and effective pesticides should be provided.
3. Smallholders dominate the country's farm sector, but the small and marginal farmers have the least access to the state's credit and agricultural extension services. Credit facilities should be updated. Government should take necessary steps in this respect.
4. Fair market prices should be ensured to encourage banana production. The role of intermediaries and local agents should be controlled strictly.
5. Effective agriculture extension services are needed to fulfil the gap of technical knowledge of banana growers.
6. Educational status needs to be improved so that banana farmers can be conscious of using modern techniques correctly.
7. Above all, the traditional value chain of banana production should be developed to get quality and safe bananas that can bring more revenue.
8. Further research can be directed on the development of the value chain of banana cultivation.

References

BBS (Bangladesh Bureau of Statistics). (2017-2018). Yearbook of Agricultural Statistics of Bangladesh. Bangladesh Bureau of Statistic, Statistic and Informatics Division, Ministry of Planning, Government of the People Republic of Bangladesh, Dhaka, Bangladesh.

BBS (Bangladesh Bureau of Statistics). (2015). Statistical Year Book of Bangladesh, Ministry of Agriculture, Government of the People's Republic of Bangladesh, Dhaka, Bangladesh.

Kamal, M.S., Ali, M.A., & Alam, M.F. (2016). Socio-economic Status and Problems of Banana Growers in Bangladesh, International Journal of Natural and Social Sciences, Vol.3 (1), pp.94-99.

Kamal, M.K. (1996). An economic Study on Banana Production in Some Selected Areas of Joypurhat district.

Mukul, A. Z. A., & Rahman, M. A. (2013). Production and Profitability of Banana in Bangladesh-An Economic Analysis. International Journal of Economics, Finance and Management Sciences. Vol. 1, No. 3, pp. 159-165.

Nargis, K. (1997). A Comparative Economic Study of Banana and Sugarcane Production in a Selected Area of Meherpur District.

Prodhan, AZM.,S. Sarkar, M.N.I., Sultana, A., &Islam, M.S. (2017). Knowledge, adoption and attitude on banana cultivation technology of the banana growers of Bangladesh, International Journal of Horticultural Science and Ornamental Plants Vol. 3(1), pp. 047-052.

Roy, B. (1996). A Comparative Economic Analysis of Banana and Other Crops Production in an Area of Mymensingh District. An MS Thesis, Department of Agricultural Economics, BAU, Mymensingh.

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Graduation of Bangladesh from LDC Group: Challenges and Opportunities

Md. Bakhtiar Uddin*

Abstract

This paper discusses the development path of Bangladesh, particularly the process and prospects of graduation from the LDC category and the challenges and benefits associated with the graduation. This paper is based on reviews of secondary literature related to graduation and development performances of Bangladesh. Data from secondary sources such as World Bank and United Nations have been utilised. Bangladesh has been maintaining steady progress, measured in terms of social and economic indicators, despite the initial doubt of not keeping pace with development. It has been possible, inter alia, because of stable growth rate for an extended period, vibrant private sector, especially the RMG, international remittances sent by the Bangladeshi diaspora worldwide, falling fertility and mortality rate and thereby increasing life expectancy and increasing literacy rate. For the first time, Bangladesh has met the initial criteria of graduation in 2018. If these present conditions continue, by 2024, Bangladesh will officially graduate. However, the path of graduation is not smooth. Even the development path will be bumpier after graduation since most preferential support measures enjoyed being in LDCs, will be withdrawn. Both graduation and development afterwards require well-orchestrated policies.

JEL Classification *O11 · R58 · O19 · F63*
Keywords *LDC · Development · Graduation · HDI*

* Associate Professor, Department of Economics, Jatiya Kabi Kazi Nazrul Islam, Trishal, Mymensingh. E-mail: bakhtiareco@gmail.com

1. Introduction

Recently, Bangladesh has made tremendous improvements in socio-economic indicators of development. Her progress has been eulogised by donor agencies, supranational organisations, international think tanks and international media. Belying all kinds of scepticisms and criticisms, Bangladesh has been moving forward with her head held high since its independence in 1971. Immediate after the independence, Bangladesh was seen as an 'international basket case'. It was satirically dubbed 'bottomless basket'.[1] Aid donors, diplomats and international media started to call Bangladesh by this name. Two renowned economists, Just Faaland and John Richard Parkinson, in their book 'Bangladesh: The Test Case for Development' (1976), had seen a slight chance of development in the newly born country. They argued, 'If development could be made successful in Bangladesh, there can be little doubt that it could be made to succeed anywhere else. It is in this sense that Bangladesh is the test case for development. However, the world community has observed how Bangladesh has falsified Faaland and Parkinson's dire predictions in recent years.

In 2011, Bangladesh entered into the medium human development group from the low human development group classified by UNDP. In 2015, Bangladesh graduated to a 'lower middle income' country classified by The World Bank. On 16 March 2018, Bangladesh was declared to meet all requirements to graduate from Least Developed Country (LDC) classified by the United Nations. Bangladesh performed excellently in meeting Millennium Development Goals set by the United Nations as well. The rate of poverty has fallen gradually over the years since its independence. Female empowerment is on the rise. In terms of the gender gap, Bangladesh ranks first among all South Asian Countries. In every standard after the independence, Bangladesh was lagging behind Pakistan, its former ruler, but recently it overtook Pakistan by almost all standards.

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1 It is commonly believed that Henry Kissinger, then US Secretary of States, called Bangladesh as 'bottomless basket' during the official visit to Bangladesh in 1974. However, there is no record to support this statement. Actually, on December 6, 1971, the so called 'international basket case' came from the conversation of a meeting of interdepartmental Washington Special Actions Group (WSAG) to discuss the situation in South Asia. According to the minutes of that meeting, Maurice J. Williams, who was answering Kissinger, was then the deputy administrator of the US Agency for International Development (USAID) and also chairman of the Interdepartmental Working Group on East Pakistan Disaster Relief. Ural Alexis Johnson, a career foreign service officer and under-secretary of state for political affairs at that time, interjected in between Henry Kissinger and Maurice Williams with his infamous 'international basket case' comment. To predict the consequences of projected famine in 1972, Ural Alexis Johnson commented that Bangladesh would be an 'international basket case' but in reply Henry Kissinger said 'But not necessarily our basket case' (Bari, 2008).

This paper will delve into Bangladesh's graduation from LDC and the challenges to face in the aftermath of graduation. Light will also be shed on the opportunities to come from graduation to the next level of development. This paper is based on the review of literature on Bangladesh's development performances. For data, secondary sources have been used. The rest of the paper is structured as follows. Section 2 describes the country classification set by different organisations and the criteria associated with these classifications. Section 3 is devoted to discussing the graduation process from the LDC group. Section 4 shows Bangladesh's development path; how she reached to next level of development. Section 5 analyses the possible challenges that Bangladesh is likely to face after graduation from the category of LDC. Section 6 consists of discussing the possible opportunities to come after graduation. Finally, section 7 concludes with some recommendations.

2. Country Classifications

There are many classifications of countries in the world. These classifications are made on various grounds, i.e. level of income, stock of human capital, development, location, stage of industrialisation, indebtedness, the endowment of natural resources. However, the primary yardstick of classification has been the level of development. Traditionally, the level of development is measured by national income. The high the level of income of a country, the more the country is developed. Variations of the population in countries make country comparison difficult with the level of income. For example, India's national income is much larger than the Netherlands, but India has a vast population. Therefore, India's overall development is much lower than the Netherlands has. In this regard, per capita income makes the comparison more rational. To enhance development through per capita income, industrialisation would prioritise maximum welfare through the'trickle-down[2] effect. However, with the passes of time, the measure of development has been evolved.

During the 1960s and 1970s, many countries enjoyed considerable growth in per capita income, but the lives of mass people did not change significantly (Todaro and Smith, 2012). Then in the development measure, reducing income inequality and poverty got the main priority. Noble laureate economist Amartya Sen criticised the income-based measurement of development. According to him,

2 Trickle-down theory states that financial benefits given to big business will in turn pass down to smaller business and consumer. For example, tax breaks for corporation and wealthy will stimulate investment thereby enhancing economic growth. Consequently, all members of the society will be benefited from the growth.

'Economic growth cannot be sensibly treated as an end in itself. Development has to be more concerned with enhancing the lives we lead and the freedoms we enjoy (Sen, 1999:14). Sen argues that there are many disparities between income and actual advantages that people can enjoy. The sources of disparities may lie in individual heterogeneity, i.e. illness, disability, gender; environmental diversities; variations in social climate, i.e. law and order situation of the country; distribution of wealth within the family; and differences in relational perspectives, i.e. what is needed for a person standing at a particular position in the society. For the abovementioned cases, only a higher level of income cannot ensure a higher level of development. To incorporate criticisms of Sen and others United Nations Development Programme (UNDP), in 1990, introduced an alternative holistic approach to measure development, the so-called Human Development Index (HDI). In HDI calculation and income, two other indicators (health and education), which can positively affect human lives, have been incorporated (UNDP, 2016).

Table 1: Country Classifications by Different Organisations

Organizations	Category			
	1	2	3	4
World Bank	Lower Income Country	Lower Middle Income Country	Upper Middle Income Country	High Income Country
UNDP	Low Human Development Country	Medium Human Development Country	High Human Development Country	Very High Human Development Country
United Nations	Developing Economies	Economies in Transition	Developed Economies	

Source: World Bank, UNDP, UN

Table 1 presents country classifications by different organisations. World Bank classifies countries into four categories: Lower Income Country (LIC), Lower Middle Income Country (LMIC), Upper Middle Income Country (UMIC) and High Income Country (HIC). The basis for this classification is per capita Gross National Income (GNI) measured in the current US dollar. According to the last update of the World Bank (July 2017), countries with lower than \$ 1,005 GNI per capita are classified as LIC, those with between \$1,006 and \$ 3,955 as LMIC, those with between \$3,956 and \$ 12,235 as UMIC, and those whose GNI per capita is above \$ 12,235 as HIC.

UNDP groups countries into four categories based on calculated HDI value. HDI value ranges from 0 to 1.[3] According to Human Development Report 2016, countries with HDI values below 0.550 fall into the low human development group, those with between 0.550 and 0.699 into medium human development, those with between 0.700 and 0.799 into high human development, and those having 0.800 and above into very high human development group.

According to World Economic Situation and Prospects (WESP) report 2018 by United Nations (UN), countries are classified into three broad categories: Developing Economies, Economies in Transition, and Developed Economies. Besides these classifications UN, based on recommendations made by the Committee for Development Policy (CDP), classifies some developing countries with a low level of development as the Least Developed Country (LDC). The primary criteria for inclusion require that certain thresholds be met about per capita GNI, a Human Assets Index (HAI) and an Economic Vulnerability Index (EVI). Detail descriptions of these criteria are discussed in the following section.

3. History of LDC Classification

The origin of the LDC category dates back to 1964 when the first session of the United Nations Conference on Trade and Development (UNCTAD I) was held in Geneva. In that session, member countries recognised that special attention to be "paid to the less developed among them [the developing countries], as an effective means of ensuring sustained growth with equitable opportunity for each developing country" (CDP, 2015). In 1969, the United Nations General Assembly acknowledged the need to alleviate the problems of underdevelopment in the less developed countries to draw full benefits from the Second United Nations Development Decade (IDS-II). The General Assembly requested the Secretary-General to find out the challenges those impoverished countries face and the extraordinary measures needed to address their problems. Later, the assembly invited the Committee for Development Planning (the predecessor of the current Committee for Development Policy, CDP) to identify such countries. After the extensive investigations on country backwardness, 25 countries were classified as LDC in 1971.

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3 HDI is the geometric mean of three indices namely life expectancy index, education index and GNI index. Life expectancy index is constructed with the life expectancy at the birth reflecting the position of long and healthy life. Education index is the average of expected years of schooling for children of school entering age and mean years of schooling for adults aged 25 years and more to reflect the level of knowledge in a society. GNI index is constructed taking the logarithm of GNI per capita (PPP$) to reflect the level of standard of living of a society.

3.1 LDC Inclusion and Graduation Criteria

LDC inclusion and graduation criteria have been changing over time since its commencement in 1971. In the first review of CDP in 1971, a threshold of GDP per capita ($100 or less), adult literacy rate (20% or less), the share of manufacturing in GDP (10% or less) were considered for LDC inclusion. After the continued change over the periods, in the last review in 2018, those criteria reached GNI per capita, Human Asset Index (HAI), and Economic Vulnerability Index (EVI). Figure 1 gives details of the change in LDC criteria that take place over time. The rationale for including GNI per capita is that it provides information on the income status and the overall level of resources available to a country. The HAI is a weighted average of 5 indicators grouped into a health and education sub-index. Weights of different sub-indices and indicators are shown in parentheses. For health index under-five mortality rate (1/6), percentage of the population undernourished (1/6) and maternal mortality ratio are considered.

On the other hand, gross secondary school enrolment ratio (1/4) and adult literacy rate (1/4) are considered. The rationale for HAI is that the higher the value of HAI, the higher the level of human capital a country possess. Low levels of human assets (low HAI) indicate major structural impediments to sustainable development.

The EVI measures the economic vulnerability of a country. It is composed of eight weighted indicators grouped into various sub-indices. Firstly, EVI is composed of exposure index (1/2) and shock index (1/2). Secondly, the exposure index is composed of size (1/8), location (1/8), economic structure (1/8), and environment (1/8) sub-indices. Size sub-index contains several populations (1/8), the location contains information regarding remoteness, the economic structure takes merchandise export concentration (1/16), and a share of agriculture, hunting, forestry, and fishing in GDP account. Finally,the environmental sub-index considers the share of the population in low elevated coastal zones (1/8). The shock index is composed of trade shock (1/4) and natural shock (1/4) sub-indices. The trade shock sub-index considers instability of exports of goods and services (1/4). The natural shock sub-index considers victims of natural disasters (1/8) and instability of agricultural production (1/8). The rationale for considering EVI is that EVI is a measure of structural vulnerability to economic and environmental shocks. High vulnerability indicates major structural impediments to sustainable development. A higher EVI represents a higher economic vulnerability.

Before 1991 the graduation rules were not established. According to the graduation rule, an LDC may be considered to be statistically qualified for graduation if it achieves the threshold levels of two of these three indicators--GNI per capita, HAI and EVI--or (since 2006) if its GNI per capita is at least double the threshold level. The latter is referred to as income-only graduation.

The latest triennial review in 2018 sets the following thresholds for LDC inclusion and graduation. The inclusion threshold is set at the three-year average of the level of GNI per capita of $ 1,025. The graduation threshold is set at $ 1,230 (20 per cent above the inclusion threshold). The income-only graduation threshold is set at $ 2,460 (twice the graduation threshold). The HAI inclusion threshold is set 60 (since 2015), and for graduation, it is 66 (10 per cent above of inclusion threshold). The EVI inclusion threshold is set at 36 (since 2015), and for graduation, it is 32, 10 per cent below the inclusion threshold.

If any country meets the graduation conditions in at least two consecutive triennial reviews, the CDP recommends graduating to the Economic and Social Council (ECOSOC). Then the ECOSOC endorses the recommendations taking account of country circumstances and the likely impact of graduation, and it sends its decision to United Nations General Assembly. Finally, the General Assembly takes the final decision on graduation. Generally, after three years of the final decision taken by the General Assembly, graduation becomes effective. However, a different grace period (maximum three years) may be granted (UNCTAD, 2016).

The number of LDCs doubled from its original list of 25 in 1971 to a peak of 50 between 2003 and 2007, declining only to 47 in 2018. So far, five countries have graduated from the LDC group to 'other developing countries. They are Botswana (1994), Cabo Verde (2007), Maldives (2011), Samoa (2014) and Equatorial Guinea (2017) (CDP, 2018).

4. Bangladesh's Graduation to Next Level of Development

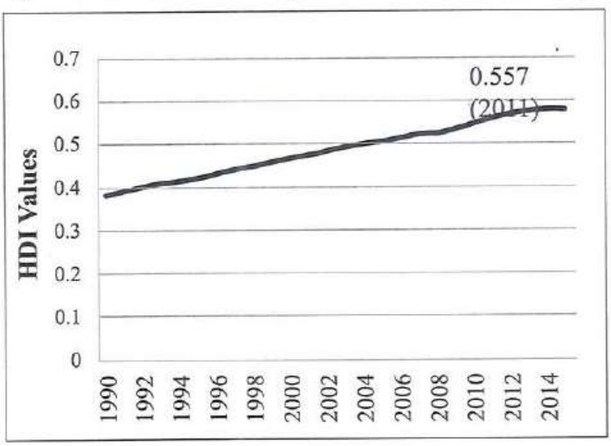
In the triennial review in 2018, Bangladesh is declared by CDP meeting statistical conditions of graduation from LDCs. Although Bangladesh was the fertile soil of progress and prosperity from the time immemorial, a stigma of least development was attached to it because of exploitation and deprivation of British rule of 200 years and later 25 years of Pakistan. During the period of Mughal Emperor Aurangzeb (in 1700), undivided India accounted for 27 per cent of world GDP in which Indian cotton industry was one of the principal heads. At that time, East Bengal (now Bangladesh) was famous for its fine Muslin, which was traded to the Middle East and Europe. Colonial adverse policy destroyed Muslin along with cloth production in Bengal. They were saying she has it that British authority chopped off the thumbs of skilled weavers in the Bengal not to produce the fine cloth (Tharoor, 2016). The next wave of deprivation came during the Pakistan rule. Pakistani rulers systematically exploited then East Pakistan (now Bangladesh) in every aspect. They developed the West at the cost of the East. The East lagged behind the West in terms of per capita income, employment, private and public investment, infrastructural and agricultural development (See Maddison, 1971). After the four decades of Independence, Bangladesh started to come out from the stigma of least development. Recently, Bangladesh has restored its position in the cloth industry. In the fiscal year 2010-11, Bangladesh was declared the second largest RMG exporter after China. Bangladesh is still maintaining its second position over the years. About 81 (in the fiscal year 2016-17) per cent of total export comes from this sector (BGMEA, 2018).

4.1 Graduation to Medium Human Development Group

For the first time, the news of Bangladesh's graduation to the next level of development came in 2011 when Bangladesh entered into the group of medium human development from the low human development group. In 1990, when UNDP published the Human Development Report for the first time, the HDI value for Bangladesh was only 0.386 and then gradually increased to reach 0.579 in 2015. In 2011, Bangladesh's HDI values reached 0.557, crossing the threshold level of 0.550 for a low Human Development country (Figure 1).

4.2 Graduation to Lower Middle Income Country

Figure 1: Human Development Index (1990-2014)



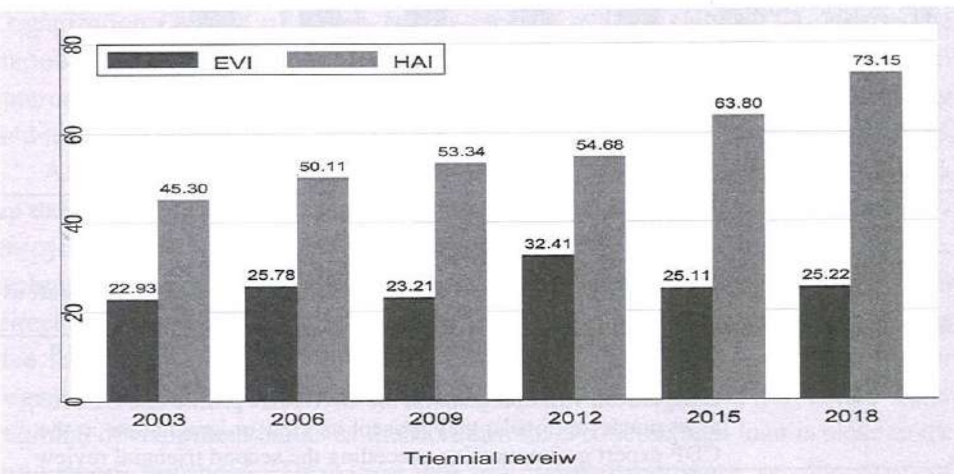
Source: UNDP, 2018

Figure 2 shows GNI per capita based on World Bank's atlas method. In 1973, GNI per capita was only $ 120, which gradually increased to reach $ 1330 in 2016. After 2000 GNI per capita increased at a higher rate than that of the previous period. In 2015, Bangladesh crossed the threshold of a low-income country to become a lower-middle-income country.

4.3 Graduation from LDC

Bangladesh has been on the list of least developed countries since 1975, when it was included in the list. Figure 2 shows EVI and HAI values in different triennial reviews of CDP from 2003-2018. Over this period, Bangladesh attained the graduation threshold level of EVI (below 32). In 2003, the EVI value was 22.93, and it slightly increased to 25.22 in 2018. However, the HAI was lagging behind the graduation threshold (66). The HAI value increased, over the period, to reach 73.15 in 2018 from 45.30 in 2003. For the first time, the health and education index value crossed the graduation threshold in 2018.

Figure 2: EVI and HAI in Different Triennial Reviews (2003-2018)



Source: CDP, 2018

The GNI per capita also was lagging behind the threshold amount. In the review of 2003, the triennial average GNI per capita was only 363, but over the reviews,the triennial average of GNI per capita increased (Figure 2). The review of 2018 reached $1,274, which crossed the graduation threshold ($ 1,230). For LDC graduation, a country must meet at least two of the three criteria set by the United Nations. For the first time, Bangladesh meets all of the criteria. If Bangladesh meets these criteria in the following triennial reviews (until 2021), it will be recommended to ECOSOC for graduation from LDC. After the endorsement by the ECOSOC, United Nations General Assembly will set the time for graduation. If nothing untoward happens, in 2024, Bangladesh will officially graduate to 'other developing countries (Table 2). If something disastrous happens--that may baffle the economic development-- up to three years of the grace period will be allowed to rip the benefits of being LDC.

Figure 3: Triennial Average GNI Per Capita in Different CDP Reviews (2003-2018)

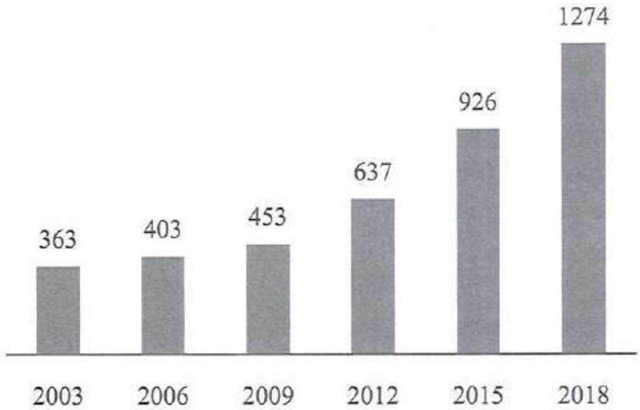


Table 2: Bangladesh's Graduation Process and Time Frame

2018 (First triennial review)	**CDP** finds Bangladesh eligible for the first time (eligibility needs to be reconfirmed at the following triennial review in 2021) **DESA** notifies Bangladesh about the first finding **UNTACD** will prepare a vulnerability profile and provide a draft to Bangladesh
2018-2021	**DESA** will prepare an ex-ante impact assessment and provide a draft to Bangladesh **Bangladesh** will comment on the UNCTAD profile and DESA assessment (optional); may present its view on graduation at the CDP expert group meeting preceding the second triennial review
2021 (Second triennial review)	**CDP** will confirm eligibility criteria (second finding); review reports and country inputs; recommend graduation **ECOSOC** will take action on the CDP recommendation General Assembly will take note of CDP recommendation Bangladesh will establish a consultative mechanism; prepare a transition strategy; report to CDP on the preparation of strategy (voluntary)
2021-2024	**UNDP** will facilitate consultative groups; provide support (if requested) **UN System**will provide targeted assistance and capacity-building (if requested) **CDP** will monitor development progress during the period, report to the Council.
2024	Graduation becomes effective, Bangladesh will no longer be on the list of the LDC group

Source: Compiled from CDP, 2018

5. Challenges Ahead

"Graduation from LDC is not the winning post, but rather the first milestone in the race of development" (UNCTAD, 2016). The graduation criteria are the holistic indicators of development, even broader than that of HDI. Indicators related to EVI is absent in HDI. Therefore, graduation is viewed as a move from dependence to self-reliance in every aspect. After graduation, a county advances on its own strengths and international markets, enabling the upgrade of the country's productive capacities and economic activities, thereby helping resilience to an exogenous shock. However, in LDC graduation, a least developed country enjoys many benefits under the International Support Measure (ISM). After the official graduation in 2027, Bangladesh will incur economic costs due to the loss of access to the ISMs associated with LDC status.

There are 139 unique and different treatment (SDT) provisions benefiting developing countries (including LDCs) in the agreement of the World Trade Organization (WTO), of which 14 are specific to LDC (UNTACD, 2016). The various LDC support measures can be grouped into three main areas: (i) international trade; (ii) development assistance, including development financing and technical cooperation; and (iii) general support and other forms of assistance.

After the effective graduation in 2027, during the 'smooth transition' period, up to the next nine years (until 2036), Bangladesh will gradually lose the currently enjoying ISMs. Bangladesh will lose facilities, especially in finance, trade, technical assistance, and technology-related intellectual property rights. Foreign direct investment (FDI) may decrease due to the loss of preferential market access due to graduation. There will be no concessional loan from multilateral donor organisations like the International Development Association (IDA) and other regional development banks as their criteria for a concessional loan is close to the graduation threshold. This loss will put upward pressure on the cost of development finance since the interest rate on loans will go up. As far as the World Bank is concerned, if per capita income of a country remains above $ 1,400 for three consecutive years, the rate of interest will become 2 percent in contrast to 0.75 per cent.

As an LDC, Bangladesh enjoys preferential market access to more than 40 countries, including the European Union (EU), Canada, Japan and the US. In FY 2015-16, the value of export from Bangladesh to preference granting countries was US$ 24.7 billion, which accounted for 72% of total export. After graduation, Bangladeshi exports will face an additional tariff of 6.7 percent, which will make Bangladeshi commodities dearer abroad and consequently, Bangladesh will face an estimated export loss of around $2.7 billion each year (8% of 2015 exports). The United Nations Conference on Trade and Development (UNCTAD) estimates that exports may fall 5.5% to 7.5% (ERD, 2018). According to the Center for Policy Dialogue (CPD), the private think-tank of Bangladesh, 54 percent of Bangladesh's shipments are headed to the EU, and it is the largest preferential treatment granting market. After graduation, Bangladesh's exports will face 8.7 percent tariffs which will erode the competitiveness of Bangladesh in this market.

The most significant shock will come to the Ready Made Garment (RMG) sector as it will lose preferential market access to the European Union, which will pose asignificant threat to export earnings since RMG accounts for about 81 percent of export earnings. As far as intellectual property right is concerned, Bangladesh will not benefit from the relaxation in this provision after graduation. For example, the pharmaceuticals industry in Bangladesh has witnessed staggering growth because of waive in Trade-related Aspects of Intellectual Property Rights (TRIPS). By 2033, this industry will have to invest a lot to innovate new medicine without copying the formula of companies in developed countries and thereby, local companies will lose their competitiveness.

Graduation from the LDC category will strain the budget since graduation will double Bangladesh's assessed contribution to the United Nations regular budget and other UN-related organisations, operations, funds, and programs. As an LDC, Bangladesh enjoys various international organisations fund support for scholarship, fellowship, participating in special training programmes, various meetings and workshops, conducting research, policy analysis and advocacy, and support for relevant inter-governmental processes. These benefits will be withdrawn after graduation (ERD, 2018).

6. Opportunities

Bangladesh is at the pace of development, and her progress is seen in every indicator of development. In some aspects, it is moving forward with a more incredible speed compared to her neighbouring countries. Social transformation due to female empowerment, social and economic infrastructural development because of public investment and burgeoning the private sector are the major factors that played a significant role in achieving this milestone. The gradation from LDC may open a new window to reach the goal of a developed country.

Once Bangladesh graduates from LDC, her credit rating will be higher. Although there is doubt that FDI may decrease due to LDC graduation in fear of losing preferential market access to developed countries, there is a possibility of attracting further investment. The economy's capacity will enhance through human capital gain, especially in education and increased productivity, which will give investors a positive signal to invest. Usually, international investors do not want to invest in an LDC because of various impediments faced by LDC. Consequently,the investment will increase as the cost of borrowing goes down.

Although rare, there is a chance of non-LDC countries reverting to the LDC group, or the graduated country may be caught in the 'middle-income trap'. Thus, there is always pressure for the government to take appropriate policies to cope with new challenges of being in a new situation. In preparation for graduation with momentum, Bangladesh will undergo many more reformations and structural changes to further development.

7. Conclusion and Recommendations

The paper focuses on the development journey of Bangladesh from her satirical position of 'basket case of development'. This study is mainly based on secondary literature on LDC graduation and the development performance of Bangladesh. Data from different secondary sources have been utilised. Falsifying all the negative speculation, Bangladesh has been keeping pace with development. Meeting almost all development indicators set by different international organisations, Bangladesh is on the development highway. For the first time, Bangladesh met all three criteria of LDC graduation in the review of 2018. If she can maintain the status quo for the following two triennial reviews, she will graduate from the LDC group in 2024.

Many more factors stand out in paving the way for this success. Bangladesh consistently maintained a stable growth rate over the long period and achieved remarkable success in poverty alleviation. Over the past four decades, fertility declined remarkably to about 2.2 from 6.8 children per woman. At the same time, there has been a rapid increase in life expectancy, going up to 72 years from as low as 49 years (Razzaque, 2018). The mortality of children, especially under the five-year mortality rate, has gone down significantly. There has been significant growth in export earnings, mainly from the apparel sector. The apparel sectors generated millions of employment opportunities for women, which is essential in female empowerment. Continuous outflows of international migration and inflows of remittances ease the problem of unemployment and improve countries international reserves. However, the bumpy road is ahead; many more challenges to face on the way to graduation. Perpetuation of development depends on appropriate preparations.

Since Bangladesh will face higher costs for development after graduation as ISMs will be withdrawn, policymakers should take appropriate policies to translate the challenges into opportunities. Policies should be focused on specific vulnerabilities and weaknesses.

Bangladesh will require a broader transformation in diverse sectors. It includes supply-side capacity building through investing in human capital. Effective investment is required in quality education and health. Because of the lack of expert labour force every year,much foreign currency goes abroad. According to US-based Pew Research Centre, foreigners working in Bangladesh repatriate $2 billion a year through the formal channel (see Prothom Alo, 2018). If sending remittances through the informal channel is considered, the amount would be much higher.

On the other hand, the creation of employment opportunities for domestic labour is at a slow rate. A study by Raihan (2018) confirms that Bangladesh is experiencing 'Jobless Growth' since the job creation is not following GDP growth, which negatively impacts poverty and human capital acquisition. Transformation in technology up-gradation, skills endowment, productivity enhancement and increased economic competitiveness is crucial for smooth graduation (Rahman and Bari, 2018).

Bangladesh must diversify its export basket for graduation with momentum since RMG accounts for almost 81 percent of export volume. Any internal and external shock to this sector will take a heavy toll on the export earnings. Diversification in this sector is also required for going to high value-added garments from the lower one. Targeted investment in skill development for the RMG workers is significant to increase labour productivity associated with increased international competitiveness. To increase value addition in this sector, a solid backward linkage industry should be established. It is imperative to search new markets for export to reduce the risk associated with external shocks and diversify export markets.

Bangladesh still lags behind its potential competitors in the export markets regardingthe cost of doing business. Various regulatory policies would need to be more business and trade-friendly by reducing the cost of doing business and exporting from Bangladesh. Special arrangement is quite likely in improving road and power infrastructure as well as up gradating port facilities.

Necessary steps are planned to avail the preferential treatment for the 'other developing countries' and raise investment funds from the capital market. Our capital market is not developed so far and has little international linkage in raising long term funds. Structural and other impediments in this market need to be removed to give local enterprises more expansive access to funds. After graduation, the improved credit rating would allow more international portfolio investments in the capital market. In raising funds, non-residential Bangladeshi (NRB) can play a significant role. Through various instruments like NRB bonds, sovereign bond NRB participation could be enhanced. After graduation Bangladesh will lose technical support from developed countries and international organisations, thereby developing a technical gap. NRB knowledge and expertise could bridge the gap if they are appropriately incorporated into the domestic development process.

Bangladesh may learn from the experience of the already graduated country in tackling the challenges faced after graduation. Botswana pursued policies to diversify its economy from over-dependence on diamond mining; Cabo Verde, which did not have any mineral resources pursued prudent macroeconomic management and harnessed the power of the private sector through the development of the tourism sector, encouraging remittance flows and attracting FDI (Rahman, 2018; UNCTAD, 2016). Therefore, Bangladesh needs to identify its vulnerabilities and weaknesses and plan strategies to overcome the upcoming challenges of the next level of development, relying on her capacity.

References

Bari, M. R. (2008). The Basket Case.Forum- The Daily Star, Vol. 3, Issue 3, March, viewed 30 April 2018, The Daily Star database.

BGMEA. (2018). Official website of BGMEA: Bangladesh Garments Manufacturer and Exporter's Association.

CDP. (2018). Official website of CDP: Committee for Development Policy, United Nations.

CDP. (2015).Handbook on the Least Developed Country Category: Inclusion, Graduation and Special Support Measures,(2ndEdition), United Nations Department of Economic and Social Affairs, United Nations: Committee for Development Policy.

ERD. (2018). LDC Transition: Turning Challenges into Opportunities' paper presented in the Bangladesh Development Forum, January 17-18, 2018, Ministry of Finance: Economic Relation Division.

Faaland, J. and J. R. Parkinson.(1976).Bangladesh: The Test Case for Development, C Hurst & Co Publishers Ltd.

Maddison, A. (1971).Class Structure and Economic Growth: India and Pakistan since the Moghuls.Routledge: New York.

Prothom Alo. (2018). Foreigners in Bangladesh formally remit $2b a year, 17 April 2018, English version, viewed 24 August 2018, Prothom Alo database.

Raihan. (2018). Anatomy of 'jobless growth' in Bangladesh, The Daily Star, 8 May 2018, viewed 24 August 2018, The Daily Star database.

Rahman, M. and E. Bari. (2018). Bangladesh's Graduation from the LDC Group: Pitfalls and Promises, Mapping Out a Strategy,The Daily Star, 24 March 2018, viewed 24 August 2018, The Daily Star database.

Rahman, M. (2018). Graduating out of LDC group with momentum,The Daily Star, 20 February 2018, viewed 24 August 2018, The Daily Star database.

Razzaque, M. A. (2018). The Tipping Point: Bangladesh's Graduation from the Group of Least Developed Countries,Harvard International Review, VOL. XXXIX NO. 3

Sen, A. (1999).Development as Freedom, Oxford University Press. p. 14.

Tharoor, S. (2016).An Era of Darkness: The British Empire in India, Aleph Book Company: New Delhi.

Todaro, M. P., & S. C. Smith. (2012).Economic Development, (11th ed.), Addison-Wesley.

UNCTAD. (2016).The Least Developed Countries Report 2016, United Nations: United Nations Conference on Trade and Development.

UNDP. (2018). Official website of UNDP: United Nations Development Programme, United Nations.

UNDP. (2016).Human Development Report 2016, United Nations: United Nations Development Programme.

WESP. (2018).World Economic Situation and Prospects 2018, United Nations.

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Present Crime Scenario and Its Relationship with Socio-economic Condition: A Case Study on Kushtia District, Bangladesh

Debashish Sharma*
Khurshida Zaman**

Abstract

Economic conditions of a country influence criminality to a considerable extent. At present, economic factors like poverty, unemployment, inequality, illiteracy are the most important causes of crime in the study area and Bangladesh. As the inhabitants of the developing country, a portion of the population in the study area lives under the line of poverty. Here, the criminals are mainly from the poor classes, and their primary motive forthe crime is monetary gain. When the economic distress of the poor villagers knows no bounds, crimes like theft, robbery and dacoity increase in villages. In Bangladesh, population explosion, industrialisation, and urbanisation stimulated many rural people to migrate to the industrial urban areas for employment. Though the shifting of the population is going on, it is too little to cope with the situation, and most live in rural and slum areas. Here, the poor condition of life and the lack of income create an inability to maintain an adequate standard of living and consequently trigger crime like drug abuse, trafficking, hijacking, prostitution, and juvenile delinquency to gain income. Besides, unemployment among the young generation also leads to excess leisure and its leads to spending in socialising with others in similar circumstances or committing crimes when others are working. The employment of women and their outdoor activities have enhanced the opportunities for female criminality in Bangladesh. Now a day's money is

* Professor, Department of Economics, Islamic University, Kushtia. E-mail: aroy@bu.ac.bd
** Post Graduate Student, Department of Economics, Islamic University, Kushtia

the paramount consideration to assess the social status in our society. Therefore, people involvement in economic activity and their socio-economic condition is essential for social stability and harmony.

JEL Classification *O17 · Z13 · Y5 · Y80*

Keywords *Causes of Crime · Triggers of Crime · Criminal and Class · Crime and Unemployment*

1. Introduction

The word crime is derived from the Latin word "krinoss", which mean to accuse. In a general sense, crime violates laws, rules, and regulations that harm or destroy human society and create problems in human life. It covers those acts which are against social order and deserve disapprobation and condemnation of society.

The word Crime has not been defined in the Bangladesh Penal Code in its broad sense. However, it may be explained as an act of commission or omission that is harmful to society. However, all acts tending to prejudice the community are not crimes unless they are punishable.

Crime accompanies social life from its very beginning. It occurs in every society and every stage of its development, regardless of its structure, system or historical period. Undoubtedly, crime is a consequence of many social and economic problems which constantly change.

Regardless of whether we like it or not, crime is a constant component of our life. Lots of factors namely socio-economic condition, influence the crime level.

2. Background of the study

Crime is generally regarded as the violation of criminal law where intention, motive, knowledge, innocence, mistake of fact, mistake of law are mental components (Ratanlal and Dhirajlal, 2012).

Crime is an act or default that tends to the community's prejudice and criminal law on pain of punishment inflicted at the suit of the State. In its legal sense, therefore, a crime includes such offences being acts or defaults which have been made punishable by the Bangladesh Penal code.

Radical criminologists argue that crime is a violation of criminal law and the violation of social relationships. The breakdown of such relationships destroys society's harmonic nature and creates more crimes (Khan, 2015).

It is apparent from the above that there is nothing which by itself is a crime unless the legislature has declared it as punishable. Different factors may trigger the criminal activities and the socio-economic situation of the offender.

Statistics confirm a strong connection between social and economic conditions and the level of crime (Szczepaniec et al., 2011). Maria Szczepaniec focuses on law and economics, claiming that "the crime rate is essentially explained by studying how the changes in costs and profits from criminal activity influence the decision to commit a crime. According to the economic theory of crime, an individual will be willing to commit an offence if the expected profit from the criminal behaviour will be higher than the profit resulting from the engagement in its legal alternative".

Since Bangladesh is one of the third world countries, it has many problems like poverty, illiteracy, unemployment, overpopulation. Like other similar countries, Bangladesh is striving for reducing its crime rate for bringing it to a satisfactory level. All the regions of this country are not equally crime-prone; the likelihood of crime varies with geographic variation, seasonal changes and socio-economic factors (Cohn, 1990). So, many cases of crimes are related or created to this problem, such as theft, robbery, dacoity terrorism, juvenile delinquency, smuggling, drug addiction, land grabbing, fraud, violence against women and children, violation of human rights, toll collection, illicit trafficking in women and children, murder and kidnapping, Illegal drug manufacturing, illegal possession and use of firearms.

3. Objectives

The main objective of this study is to identify the present crime scenario of Kushtia city through understanding the crime trends and patterns and establishing the relationship with existing socio-economic factors of the area, which will be helpful for the national level policy formulation and be usable by other stakeholders.

The specific objectives of the study are

- To identify the present crime trends and patterns of the study area.
- To identify the socio-economic and demographic situation of the study area.
- To identify the socio-economic and demographic factors which influence unlawful activities.
- To identify the relationship between criminal activities and socio-economic factors to improve the present scenario.

4. Rationale and Literature

This study will investigate the present crime scenario in the study area at Kushtiaand its relationship with the existing socio-economic condition. It is essential to understand the criminal activities, patterns, and socio-economic conditions in the study area. Moreover, the identified relationship between crime patterns and the socio-economic condition is significant to make an important decision that will be helpful to formulate government policy and necessary implementation strategy.

By investigating studies concentrated on analysing the relationship between crime and macroeconomic variables, Diaw, Lobonț, and Moldovan (2014) note the record of some contradictory results related to the relationship between economic conditions and crime.

The scale and diversity of the crime phenomenon make necessary the analysis and identification of threats developed on the background of the deterioration of living standards, family environment and educational system degradation, relevant indicators to the proposed study. Increasing the economic gap between some geographical regions regarding living standards can generate social rejection and changes in crime (Lobontet al., 2017). Some statistics and studies are currently trying to provide a solution about personal connections between socio-economic and demographic variables and crime, indicating that the current crisis has much weight on the social environment and, therefore, on the offence factors that increase criminal behaviour. According to social disorganisation theory, many studies reveal that social segregation in the urban environment creates fragile environments. These are directly associated with high crime rates, according to Cahil (2004), Bjerk (2009), Raphael and Sills (2006).

Gümüş (2004) uses data from 75 large US cities from 1989–1991 to empirically examine the determinants of crime in urban areas. Using an ordinary least squares (OLS) regression technique, the obtained results indicate that the unemployment rate, police expenditure, income level, population, and primarily black communities are significant determinants of crime in urban areas.

There are different mechanisms through which unemployment can affect crime: alcohol consumption, substance abuse, drug dependence,income inequality, the availability of theft-worthy goods (Buonanno&Montolio, 2008; Gümüş, 2004; Omotor, 2009).

However, we find that the study of crime and its determinants are closely related to other variables, such as social exclusion, educational level, cultural dimension, family background, religion (Lobontet al., 2017).

A recent study (Traxler&Burhop, 2010) confirms the strong positive effect of poverty on property crime and a substantial negative impact on violent crime by using panel data methodology for Prussia from 1882 to 1910 and the rye price as a proxy for poverty. Moreover, by using binary choice models, Anderson (2002) finds a negative effect of poverty on crime, using as crime indicators assault, robbery, rape, murder and abduction in South Africa. The models use nine independent variables as the determinants of crime. These variables are respectively: income, inflation rate, Gini coefficient, unemployment rate, economic growth level, the total population in Romania, the total population in Romania rural areas, the total population in Romania urban areas and the enrolment rate in Romanian universities (Lobont et al., 2017).

5. Overview of Crime in Bangladesh

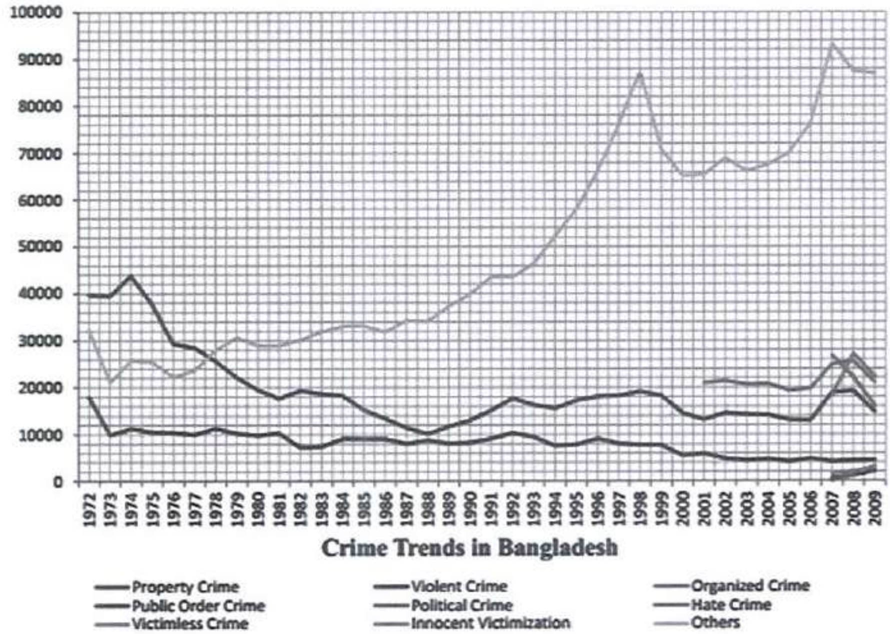
Bangladesh has been facing the problems of crime, criminality and corruption with its diversified forms from the very beginning of the country's independence. Khatun M. N. and Islam M J (2018) conducted research to depict the comprehensive and holistic historical crime analysis in contemporary Bangladesh with particular references to crime trends and their associated causations. The study was mainly descriptive, and the data of the study has been collected from various secondary sources like police statistics, books, journals, periodicals and related literature. The crime data from 1972-2009 were analysed. The significant findings showed that the crime rate increased steadily from 2003-2008, and the highest number of crimes were committed in 2008 (1.58 lakh), though; it decreased a little in 2009. It also indicates the committed crime of the years (2003- 2007) where 1.27 lakh crime was committed in 2003, 1.20 lakh in 2004, 1.26 in 2005, 1.30 in 2006, and 1.57 in 2007. It is a matter of concern that the statistics represented only the crimes reported to the police.

The other significant findings of the study stated that most of the common crimes were economic crimes; however, the trends of non-economic crimes, especially political crimes, are alarming. Besides, the authors also proposed various effective measures, including public awareness, effective laws and policy, police reform, proper justice system to reduce the criminal activities of Bangladesh.

The trend in reported crime in Bangladesh since the liberation war has been increased with slight fluctuation. According to police statistics, the number of total offences for both violent and property crimes hasdecreased slowly. In 1972, there were approximately 18000 violent offences. In 2009 the violent offences were only 4331- a massive decrease.

Property crimes have decreased at a similarly effective rate. In 1972, the total number of property offences was 39633. By 2009the number of offences had fallen to 14689 property crimes. We know that the rate of crime in Bangladesh is increasing day by day. However, in police statistics, we see the number of crimes is decreasing due to the non-reporting tendency of crime. This fact demonstrates the failure and shortcomings of the criminal justice system of Bangladesh in

Figure 1: Patterns and Trends of Crime in Bangladesh



Source: Khatun and Islam, 2018

reporting crimes by the victims. In effect of this deficiency, the police organisation cannot record the exact number of crimes and construct appropriate crime typologies (Khatun and Islam, 2018).

There are many reasons for the non-reporting of crimes: (i). Victims may consider the crimes insignificants and hope to avoid the offender's embarrassing situation (ii). Wish to avoid the publicity and inconvenience of calling the police, (iii) have agreed to the crime, as in gambling and some sexual offences, (iv) may be intimidated by the offender (Bohm& Haley, 2002: 39). Due to unscientific classification methods used by the police, other categories of crime was highest in Bangladesh after the liberation period. According to police statistics, in 1972, the number of total other crimes was 32306. On the other hand, the number of reported other offences was 87022 in 2009- a massive increase.

Khan MBU (2015)studied the present trend and patterns of crimes in Dhaka city. The study was conducted based on the data which DMP has collected from January to July 2015. The data were presented in some pre-designed structures where the categories of crimes have been defined according to the Penal Code, 1860 of Bangladesh.

The trend line shows that the criminal tendency among the city people is not any constant issue. This trend shows a fluctuating curve and directs police for becoming more alert in a specific period when the criminal tendency increases and more crimes are recorded and vice-versa (Figure 1).

6. Approach and Methodology

The study was conducted in Kushtia Sadar and Mirpur Upazila of Kushtia District under Khulna Division.

Two types of data, namely (i) primary and (ii) secondary data, were collected to conduct the research. Primary data was collected from different sources like legal authorities, law enforcing authorities, local government and discussion with legal practitioners, local elites, relevant researchers and immoral individuals. Secondary data was collected from various journals, the Bangladesh Bureau of Statistics, Government, published reports, books, university library and websites.

Both quantitative and qualitative methods were being used to collect data from the areas. Questionnaires and FGD were conducted to collect the primary data for this study. Mixtures of semi-structured and open-ended questionnaires were used schedule interviews, and Key Informants Interview (KII) were conducted with law enforcing officials.

A questionnaire was developed considering the following information:

1. Socio-economic and demographic characteristics of the study area;
2. Current living conditions, financial situation and livelihood activities of the immoral persons of the study area;
3. Perception and practical experiences regarding the relationship between crime and socio-economic profile.

This study was based on basically secondary data where all data was collected from the official source of Kushtia and Mirpur Police Station and other relevant stakeholder's offices. However, few interview sessions were performed with local government officials, representatives from law enforcement agencies and local elites.

All the collected data and information from secondary sourcesand questionnaires were checked for any wrong and incompleteness, and additional work will be done if needed. Data entry was done following standard procedure. Processed data has been analysed by using statistical operations and displayed with graphical aided computer software.

7. Socio-Economic Description of the Study Area

Socio-Economic characteristics, including basic demography, settlement and housing, public utilities, economy and employment status in the study area, are shown in this section. This information helps to conceptualise the Socio-Economic condition of the study area. The findings of this chapter are prepared based on secondary and primary data and information. The secondary information was collected from the Population and Housing Census 2011, Bangladesh Bureau of Statistics (BBS), 2012 and the primary information from the field visit.

Kushtia district consists of six (06) Upazila. Among these, KushtiaSadar and MirpurUpazila are considered as areas for the proposed study. Some major demographic and socio-economic features are presented below.

The study area comprises 202870 households with a total population of 832370includingan average household size of 4.06. 419028 males and 413342females in the study area with an average density of 1330 people per kilometre (Table2).

Analysis of age structure shows that about 49% of the total population are in depending age group (age ranges up to 14 years and 65+ years old), 51% of the total population are (age ranges from 15 to 64 years) regarded as potential earning

Table 1: Location and Area of the Study Area, Kushtia district

Upazila	Total area (sq. km)
Kushtia Sadar	318.22
Bheramara	153.71
Daulatpur	468.76
Khoksa	104.85
Kumarkhali	258.18
Mirpur	305.06

people or economically contribute to the family. The following Figure 0.2shows that the highest 21% of people are from the age group 30-49 years old considered

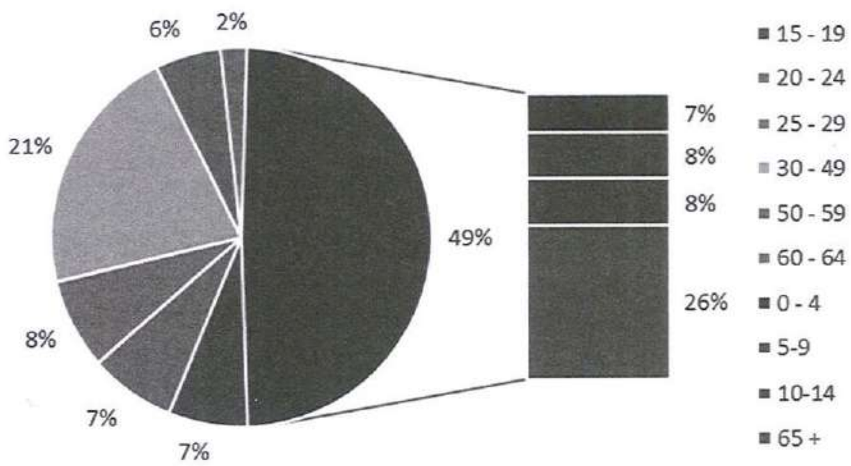
Table2: Demographic Scenario of the Study Area

Upazilas	Total HHs	Total Population	Male	Female	Sex Ratio	Population Density (sq.km)
Kushtia Sadar	1,20,087	502255	253499	248756	102	1578
Mirpur	82,783	330115	165529	164586	101	1082
Total/Average	202870	832370	419028	413342	101.5	1330

Source: Population and Housing Census 2011 the most potential workforce.

The BBS, 2012 shows that a maximum of 59% of households resided in Kucha houses madeof mud, straw, corrugated iron sheet (tin). Followed by 32% belongs to Semi Pucca houses made by the Brick wall, concrete floor and concrete/tin shed roof. Only 8% of the houses are recorded as Pucca. The type of housing condition is presented in the following Figure 3

Figure 2: Age Structure of the Studied Population



Source: Population and Housing Census 2011,

According to the BBS 2012, the majority of the households (94%) resided in their own houses. It ensured that a significant percentage of people reside within the study area (Figure4).

The literacy rate is reported for the population aged seven years and above with a definition of "ability to write a letter in any language". In this context, the overall literacy rate of the study area showed much lower than the national level both for males and females. It indicates that people of the study area are not well aware of ensuring a better future for their family and social involvement.

People aged over seven years old and having scope of employment are considered for figuringout the status of occupation and livelihood. About 37.77% of the total population are economically active, of which about 37.8% are employed, and the remaining 62.2% are household workers and looking for work as well. Traditionally, females are found to be highly engaged in household work

Figure 3: Type of Housing Structure in Study Area

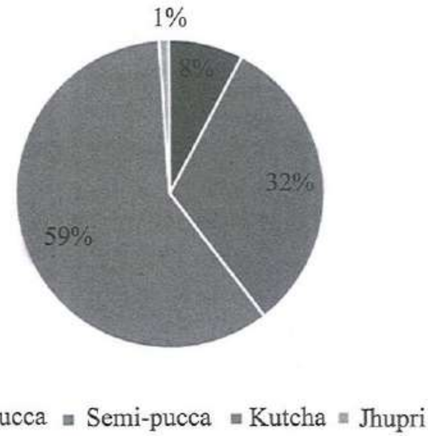
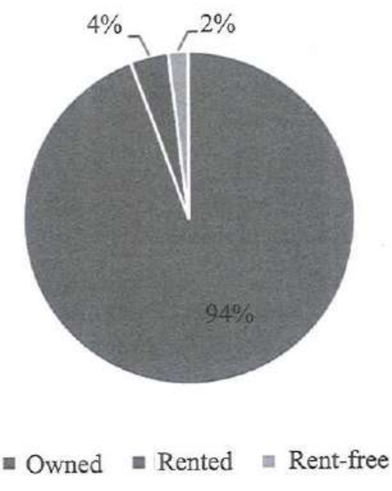


Figure 4: Housing Tenancy in the Study Area

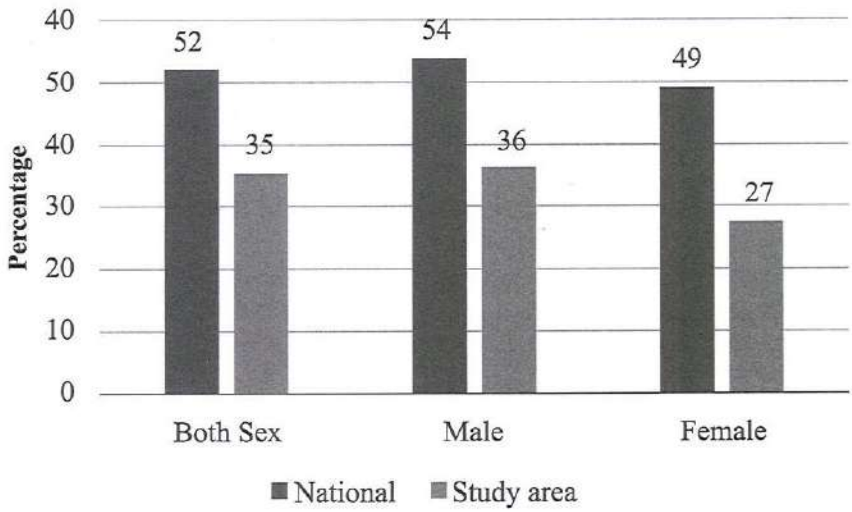


Source: Population and Housing Census 2011, BBS 2012

in the study area. The employment status of the study area is detailed in the following figure by sexes.

As per the reference of Population and Housing Census, 2011, distribution of occupation shows that highest 40.9% of the employed people are engaged in

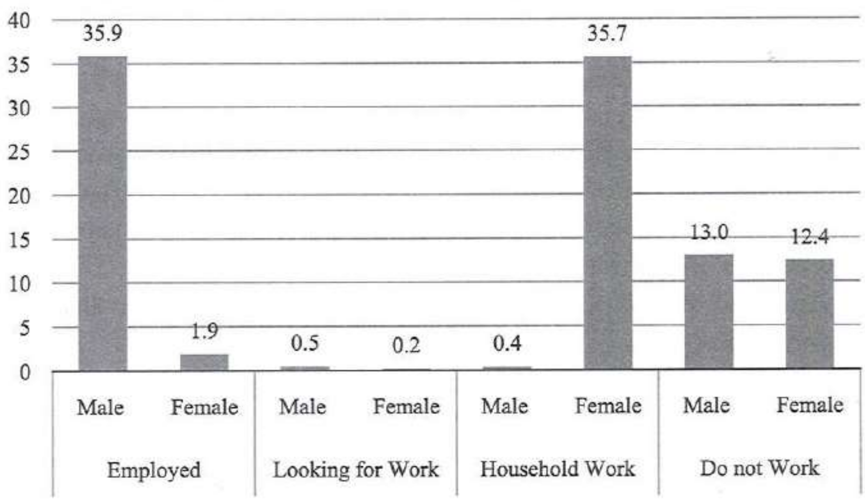
Figure 5: Distribution of Household by Literacy Rates



Source: Population and Housing Census 2011, BBS 2012

agricultural activity, followed by 32.6% in services and only 10.1% in industrial activities(Figure 7).Therefore, it has been found that industrial activities dominate the study area.

Figure 6: Proportionate Distribution of Employment in the Study Area

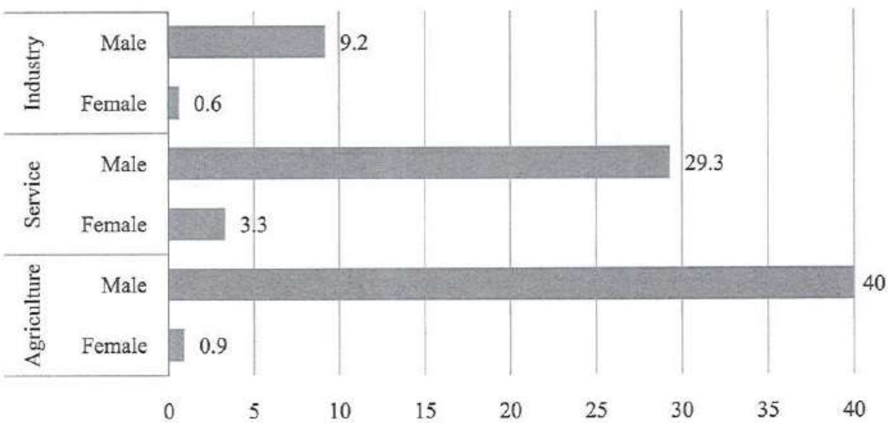


Source: Population and Housing Census 2011, BBS 2012

8. Results and Discussion

The analysis of the present crime scenario and all their associated factors concerning crime has been analysed. All the relevant data have been analysed here for a proper understanding of the associated factors, including the socio-economic condition of the criminal. The significant findings of the study have been presented and discussed below.

Figure 7: Proportionate Distribution of Population by Field of Activity



Source: Population and Housing Census 2011, BBS 2012

8.1 Existing crime scenario

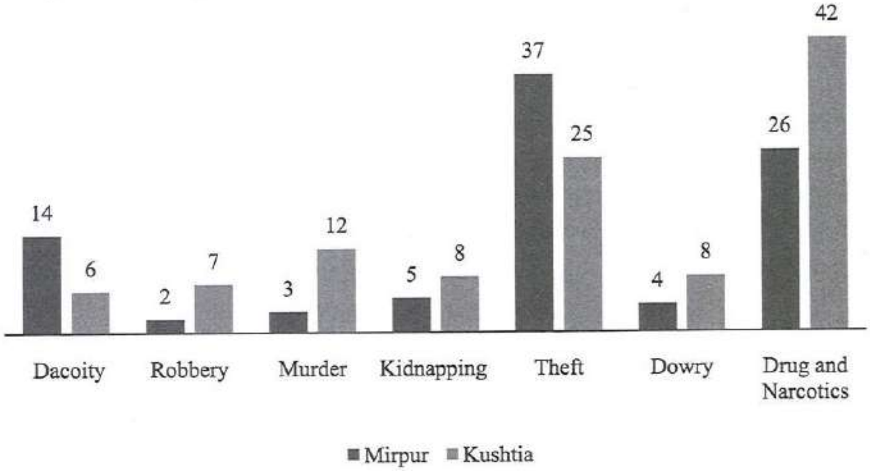
The crime data recorded by the Mirpur and Kushtia police station from January to July 2019 has been presented. Analysis indicates that the police most frequently face crimes related to narcotics abuse and the illegal trades of such substances in the study area. Findings also show that crimes conducted in the Kushtia Sadar area are relatively higher than the Mirpur area, which is comparatively less developed than the city. The following most recorded crime in the study area during the studied period was theft. The subsequent frequent crimes after these are dacoity, murder, robbery, kidnapping and dowry.

Considering the crime pattern in the study area, women and children repression receive the maximum percentage in both study areas.

8.2 Causes of Crime in the Study Area

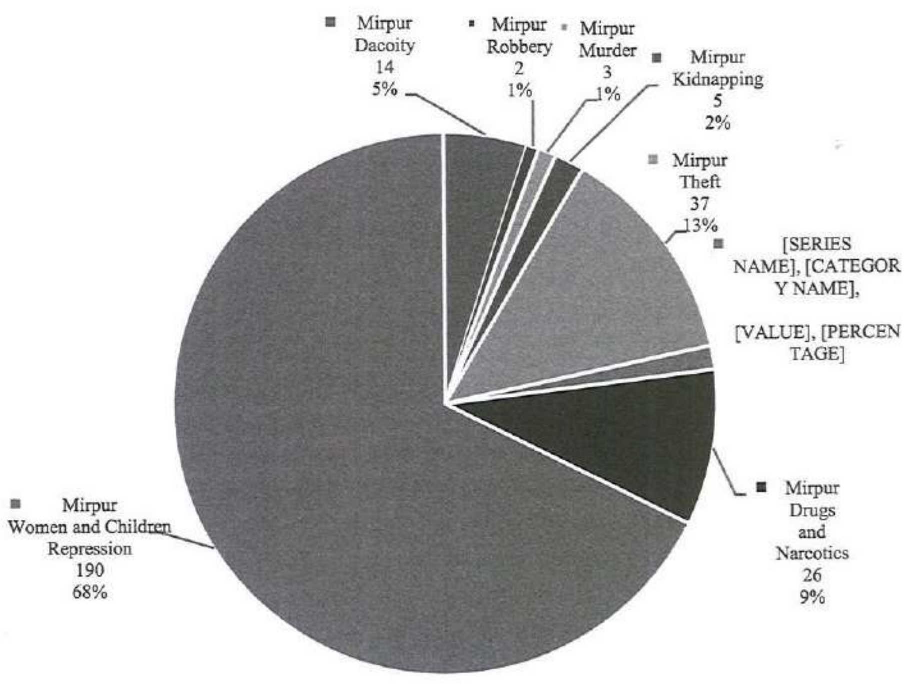
Crime can be defined in many different ways. Different societies may also choose to define crimes differently. However, in general, crime can simply be defined as the breach of laws laid down by the ruling authority of the land. It is a constant endeavour of governments and policing organisations worldwide to bring down

Figure 8: Existing crime scenario in the Study Area (January to September 2019)



crime rates so that the world becomes a safer place to live in. The fight against crime is not a new one in humanity, and it has, since the establishment of society, tried to bring crimes down. Let us now attempt to look at some of the causes of crimes identified through observations and evidence.

Figure 9: Existing crime pattern in Mirpur Upazila (January to September 2019)



Victim of unfair rulings and the correction system (prison system)

Victims of unfair or incorrect rulings from court often cause people to enter a life of crime. It often happens that a person is a victim of chance and happens to fall into crimes. Besides that, people are also often falsely accused of committing crimes resulting in a court conviction. Jails or prisons often make worse criminals out of people because of the conditions that exist there. Corrections anywhere do not involve significant rehabilitation for criminals, and more often than not, they end up being thrown in overpopulated jails full of people who are either victims or perpetrators of crimes more severe than their own. The declassification of people in prisons is also a leading cause of crime creation.

Depression and other social and mental disorders

Depression is also a significant cause of crime. Other than depression, people with severe mental disorders also end up committing crimes. Such people should be treated before their tendencies, and ailments get out of hand. A person under depression or some other severe mental disorder can also easily cause harm to themselves.

Family conditions

Many things go on in families that often cause people to get into a life of crime. Here again, there are a lot of different conditions that lead a person into crime. Abuse during formative years from family members and other such acts also instigate a person into a life of crime. People who are neglected by their families and do not get the love and attention they desire also get into criminal activities. Family violence and other issues are also related to crime in many ways.

Regionalism

Regionalism is a major cause of crime and unrest among people. People and the administrative bodies often ignore this fact as they are caught up in classifications of people by region. Such people that harbour such regionalist feelings often go to great lengths to commit crimes against other communities. It is often that a victim of such regionalism gets influenced and enters the world of Crimes.

Racism

Discrimination based on race is a serious issue all around the world. All humans are in a way racist towards some people in some part of the world or another.

Racism has contributed much unrest to many places worldwide, and it is primarily because of one or two idiots that such crimes are given birth to. It is a sad fact of the world that we live in that we end up discriminating against something that is the same flesh and blood underneath even though the external appearance and the origins may be different.

Politics

Politics is often a cause of crime. It is seen that many political associations all around the world have their own mafias running, which they use to manipulate and subjugate people. Political power is often misused to take advantage of weaker groups, and people and the dissidence that rises out of such situations often forces the victims to commit crimes. Politics is more related to crime on a much significant and much heinous level than anything else.

Poverty

Economic deprivation or simply poverty is a significant cause of crime all around the world. People are often driven to great lengths of desperation by poverty, which is a major cause of crime worldwide. Such frustration is problematic for society as global inflation has risen significantly over the last few years. However, it does seem that in our world today, the rich get richer, and the poor get poorer.

Overpopulation

An increase in population is the most significant cause of crime and much of the world's worries. Although population increase is related to each cause mentioned here, it still needs to be looked at as a cause of crime. The increase of population triggers a dynamo effect in society, leading to the creation of more people with some form of frustration or resentment towards society as such.

Parental Relations

Children who are neglected or abused are more likely to commit crimes later in life than others. Similarly, sexual abuse in childhood often leads these victims to become sexual predators as adults. Many inmates on death row have histories of some kind of severe abuse. The neglect and abuse of children often progress through several generations. The cycle of abuse, crime, and sociopath keeps repeating itself. Children who are neglected or abused commit substantially more crimes later in life than others

Heredity and Brain Activity

Searching for the origins of antisocial personality disorders and their influence over crime led to studies of twins and adopted children in the 1980s. Identical twins have the same genetic makeup. Researchers found that identical twins were twice more likely to have similar criminal behaviour than fraternal twins with similar but not identical genes, just like any two siblings. Other research indicated that adopted children had more remarkable crime rates to their biological parents than to their adoptive parents. These studies suggested a genetic basis for some criminal behaviour.

Education

Conforming to Merton's earlier sociological theories, a survey of inmates in state prisons in the late 1990s showed low levels of education. Many could not read or write above elementary school levels, if at all. The most common crimes committed by these inmates were robbery, burglary, automobile theft, drug trafficking, and shoplifting. Because of their poor educational backgrounds, their employment histories consisted of primarily low wage jobs with frequent periods of unemployment. Employment at minimum wage or below living wage does not help deter criminal activity. Even with government social services, such as public housing, food stamps, and medical care, the income of a minimum wage household still falls short of providing basic needs. People must choose between continued long-term low income and the prospect of profitable crime. Gaining further education, of course, is another option, but classes can be expensive and time-consuming. While education can provide the chance to get a better job, it does not always overcome the effects of abuse, poverty, or other limiting factors.

Peer Influence

A person's peer group strongly influences a decision to commit a crime. For example, young boys and girls who do not fit into expected academic achievement standards or participate in sports or social programs can sometimes become Crack cocaine pipes displayed by police. Drugs and alcohol impair judgment a reduce inhibitions, giving a person more incredible courage to commit a crime. Children of families who cannot afford adequate clothing or school supplies can also fall into the same trap. Researchers believe these youths may abandon schoolmates favouring criminal gangs since membership in a gang earns respect and status differently. In gangs, antisocial behaviour and criminal activity earn respect and street credibility.

Drugs and Alcohol

Some social factors pose a powerful influence over a person's ability to make choices. Drug and alcohol abuse is one such factor. The urge to commit a crime to support a drug habit influences the decision process. Both drugs and alcohol impair judgment and reduce inhibitions (socially defined rules of behaviour), giving a person more incredible courage to commit a crime. Deterrents such as lengthy prison sentences have little meaning when a person is high or drunk. Criminologists estimate that alcohol or drug use by the attacker is behind 30 to 50 percent of violent crimes, such as murder, sexual assault, and robbery. In addition, drugs or alcohol may make the victim a more vulnerable target for a criminal by being less attentive to activities around and perhaps visiting a poorly lighted or secluded area not customarily frequented perhaps to purchase drugs.

9. Conclusions and Recommendations

9.1 Conclusions

Kushtia is a small district of Bangladesh. Due to its geographical location, Kushtia is essential for the regional development and national economic development of Bangladesh. However, economic development and criminal activity have vice versa relation between them. Therefore, this study was conducted to identify the relationship between crime and socio-economic conditions in the Kushtia district. Despite legal, social, psychological and penal measures for combating crime, the problem remains in alarming dimensions. With the change of time, new crimes are coming up, and traditional crimes are vanishing fast. Different types of criminal's activities deteriorated the economic growth of this Kushtia region. Therefore, it is necessary to understand the present scenario and implement necessary and applicable measures to control criminal activities. From the analysed data in this study, it has been indicated that the most common factors of crime like unemployment, lack of economic growth, corruption, natural calamity, poverty, and famine are triggered by the individuals' socio-economic condition. It has been observed that all these socio-economic factors have substantial control over the criminal activities in this area. However, the virtues of tolerance, mutual respect, and coexistence through social institutions such as religion, family, parental control help us live in social harmony.

9.2 Recommendations

The socio-economic environment can play an important role to combat a social problem like crime. It plays an influential role to combat the social problem differently. Some of them have been mentioned below.

Create awareness among the people

A social worker works at the root level of the community. So they have good communication with the community people if they can build awareness about a crime that will help to minimise crime.

Help to formulate crime-related policy

Local government can work to the root level people and know what types of policy can be needed for crime. So they can provide enough knowledge to the authority to formulate crime-related policy.

Building social movement

The local government can build up social movement against crime by buildingthe social movement against crime such as rape a burglary that will minimise crime.

Counselling

Government can provide counselling programmes to the victims and offenders. If they provide it correctly, that will minimise crime.

Correctional program

Government can provide a correctional programme to the offenders that will help to reform the offenders. It helps criminals to rectify their attitudes and mentality. Thus crime will be removed from society.

Provide Education

The local government can provide enough knowledge about the crime. They will realise that crime is breaking moral rules so that people will know about crime and avoid committinga crime.

It helps to find out the causes of crime

The local government can work at the community level to observe crime and criminal activities and find out the cause of crime that will help minimise crime by removing the causes of crime.

Research on crime

It is necessary to correctly identify crime patterns and crime trends in the study area. The local government can research crime which is changing day by day. Government can identify it and take adequate measures to control crime.

Create a negative image of criminal activities

The local government can create a negative image of the criminal to the people. People can provide a negative attitude to the criminal so criminals can realise it and avoid conducting crime.

Bibliography

Ahad, M.A., Chowdhury, M., Islam, M.B., &Alam, M.F. (2017). Socio-economic Status of Young Drug Addicts in Sylhet City, Bangladesh. IOSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 22, Issue 6, Ver. 2 (June. 2017) PP 84-91.

Anderson, M. (2002). The effect of poverty on crime in South Africa: A GMM and IV approach. Working paper. Retrieved from http://stage-cpe.ucsd.edu/assets /002/6932.pdf

Bjerk, D. (2009). Thieves, thugs, and neighbourhood poverty. IZA Discussion Paper No. 4470. Retrieved from http://ftp.iza.org/dp4470.pdf

Bohm, R. M., & Haley, K. N. (2002). Introduction to Criminal Justice, Glencoe: McGraw-Hill.

Buonanno, P., &Montolio, D. (2008). Identifying the socio-economic determinants of crime across Spanish provinces. International Review of Law and Economics, 28, 145–170.

Cahil, M. E. (2004). Geographies of urban crime: An intra-urban study of crime in Nashville, TN; Portland, OR; and Tucson, AZ. A Dissertation Submitted to the Faculty of the Department of Geography and Regional Development for the Degree of Doctor of Philosophy. Retrieved from https://www.ncjrs.gov/ pdffiles1/nij/grants/209263.pdf

Cohn, E.G. (1990). "Weather and Crime", British Journal of Criminology, 3 (1). 51-64.

Gümüş, E. (2004). Crime in urban areas: An empirical investigation. Akdeniz I.I.B.F. Dergisi, 4:98–109. Retrieved from http://ssrn.com/abstract=563226

Khan, M.B.U., &Kamruzzaman, M. (2010). "The Present Vulnerability to Female Suicide and Homicide in Bangladesh: An Analysis of Recent Cases". Empowerment, Vol, p.79-86.

Khan, M.B.U, Alam, M. A., & Faruk, M.O. (2014). "Modernisation and the Opportunity Factors of Crime: Dhaka City Experience", UITS Journal, 3(2), 45-64.

Khan, M.B.U. (2015). "Trends and Patterns of Crimes in Dhaka City: An Analysis of Recent Cases". International Journal of Humanities, Arts, Medicine and Sciences (BEST: IJHAMS) Vol. 3, Issue 10, 87-96.

NurjahanKhatun., & Mohammed Jahirul Islam. (2018). "Crime in Bangladesh: A Historical Overview" Social Science Review, Volume-35, No-2 (December)

Lobonț R O, Nicolescu A C, Moldovan N C., & Kuloğlu A. (2017). The effect of socio-economic factors on crime rates in Romania: a macro-level analysis, Economic Research-EkonomskaIstraživanja, 30:1, 91-111, DOI: 10.1080/1331677 X.2017.1305790

Office for National Statistics. (2014). User Guide to Crime Statistics for England and Wales. Retrieved from www.ons.gov.uk.

Omotor, D. G. (2009). Socio-economic determinants of crime in Nigeria. Pakistan Journal of Social Sciences, 6, 54–59.

Population and Housing Census (2011) of Bangladesh Bureau of Statistics (BBS)

Rehman, J. (2003). International Human Rights Law: A Practical Approach. Dorset, Great Britain: Henry Ling Ltd.

Raphael, S., & Sills M. (2006). Urban crime, race and the criminal justice system in the United States (Chapter thirty, pp. 515–535). Retrieved from http://socrates.berkeley.edu/~raphael/ACTC30.pdf

Ratanlal., & Dhirajlal. (2012). Indian Penal Code (33rd ed.). Haryana, India: LixisNexisButterworthsWadhwa Nagpur.

Traxler, C., &Burhop, C. (2010). Poverty and crime in 19th century Germany: A reassessment.

Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2010/35. Retrieved from http://www.coll.mpg.de/pdf_dat/2010_35online.pdf

Siegel, L. J. (1998). Criminology: Theories, Patterns and Typologies (6th ed.). USA: Wordsworth Publishing Company.

Shazzad M.N., Abdal S.J., Majumder M.S.M., Sohel J.U.A., Ali S.M.M., &Ahmed S. (2013). Medicine Today, 25 (2).

Terrill, R. J. (2009). World Criminal Justice Systems: A Survey (7th ed.). Matthew Bender & Company, Inc.

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A SWOT Analysis of E-Rickshaw Driving: The Biggest Informal Job Sector in Rajshahi City Corporation

Naznin Sultana*
Mohammad Selim Reza**
Mahmud Hossain Riazi***
Sihab Ahammed****
Renuka Sharmin*****

Abstract

Electric-rickshaws or e-rickshaws, also known as battery-driven auto-rickshaws, have changed the mode of the transportation system in metropolitan, urban and even peri-urban areas in Bangladesh. The major advantages of e-rickshaws, as transport, are that this sector employs many marginal city dwellers, unskilled rural migrant labour forces, is environmentally friendly, pollution-free, less fare and easy access on all roads and free from a fatal accident. This study has been done on e-rickshaws driving in Rajshahi City Corporation to investigate the strengths, weaknesses, opportunities and threats of this transport and informal job sector. The results show that e-rickshaws drivers' income is high compared to the last human pulled rickshaws, and at the same time, the income of personal e-rickshaws drivers (Tk. 26,668.83) is higher than rented e-rickshaws drivers (Tk.10279.41). Day by day, many people are involved in this informal job sector and drive e-rickshaws legally or illegally, which is

* Lecturer, Department of Economics, Varendra University, Rajshahi. E-mail: nslepa11@yahoo.com

** Associate Professor, Department of Economics, University of Rajshahi, Rajshahi. E-mail: msreza06@yahoo.com

*** Professor, Department of Economics, University of Rajshahi, Rajshahi.

**** Graduate Students, Department of Economics, Varendra University, Rajshahi

not a good sign for long-term sustainable development as it creates traffic jam and chaos on the streets and creates pressure on electricity consumption. Along with banning illegal e-rickshaws, a new job sector should be created for the unskilled, semi-skilled and skilled workforce of the Rajshahi city, as well as more research is needed to supply power from solar energy to the e-rickshaws.

JEL Classification *E24 · J46 · J24 · L91 · O18*

Keywords *E-rickshaws · Informal Job Sector · Employment · Environment · Development*

1. Introduction

1.1 Overview of e-rickshaw driving

Electric-rickshaws (e-rickshaws/easy bikes, also known as battery-driven auto-rickshaws) have changed the mode of the transportation system in metropolitan, urban and even peri-urban areas in Bangladesh. In the last decade, human-pulled rickshaws were gradually replaced by e-rickshaws running on batteries through electricity. At present, e-rickshaws and two-seated battery-driven e-rickshaws are operating in different cities except for Dhaka North and South city corporations where human-pulled rickshaws are still running. Pulling rickshaws are more environmental-friendly but need much human effort, need a long time to reach their destination, and create traffic jams and the pullers earn less money than e-rickshaws.

E-rickshaws make the city life faster as people can move quickly from one place (short distance) to another place with cheap cost and comfort. The major advantages of e-rickshaws, as transport, are that these employ a large number of unskilled rural migrant labour forces, environmental-friendly, pollution-free, less fare and easy access on all roads and free from a fatal accident. This new mode of transportation facilitates passengers and helps to expand business and trade as the small traders carry their goods by the e-rickshaws. More important insights of introducing e-rickshaws are reducing pollution originating from petrol, diesel or CNG (compact natural gas) auto-rickshaws and dependency on pulled rickshaws which needed much human effort. Electric-rickshaw has been becoming in some cities in Bangladesh since 2008which were imported from China. Nowadays, the Number of e-rickshaws and two-seated battery-driven e-rickshaws has increased since the local engineering workshops were able to manufacture them locally in Bangladesh.

According to the Country Report (2010), the informal job sector offered 88.5% of the total Number of jobs in the labor market, where rickshaw pulling was one of Bangladesh's largest informal job sectors. The data of the two Dhaka city corporations has shown that 79,554 licensed human pulled rickshaws were running in the capital city Dhaka, where the actual Number estimated around 1.1 million (Shafiq, 2017). Another study has shown that around 7,00,000 to 8,00,000 rickshaws were operating in Dhaka city in 2012 and employed more than 1 million people, and with the help of these rickshaws, 7 million passenger trips were made in Dhaka city over a distance of 11 million passenger miles (Rahman, 2013). Like Dhaka city, other divisional and big city dwellers' were more or less dependent on rickshaws from the very beginning.

As a divisional city, Rajshahi is known as the city of rickshaws, and many poor people have been involved in this informal sector since long ago. At present, e-rickshaws (easy bikes) and two-seated battery-driven auto-rickshaws dominate Rajshahi city's streets and have become the main reason for city traffic jams (The Financial Express, 2018). According to Rajshahi City Corporation (RCC), 8,862 licenses were issued for e-rickshaws and 8,400 licenses for two-seated battery-driven auto-rickshaws, and at the same time, around 6,000 drivers of those vehicles were issued licenses from RCC authorities. RCC cancelled the registrations of two-seated battery-operated auto-rickshaws in September 2015, but now almost 40,000 legal and illegal e-rickshaws and two-seated battery-driven auto-rickshaws are playing in the city streets (The Financial Express, 2018). The serious allegation is that many e-rickshaws and two-seated battery-driven auto-rickshaws were running by showing fake licenses and by forging the duplicate Number with the help of dishonest employees of RCC, importers and sellers of those vehicles (The Financial Express, 2018). Rajshahi is an agriculture driven region, and most of the people are directly and indirectly involved in the agriculture sector. The financial and formal job sectors are limited here as the industrial sector does not expand like other cities. Small and medium enterprises absorb a small fraction of skilled and semi-skilled labour forces, and the remaining unskilled labour forces engage in informal sectors like rickshaw pulling/driving, construction worker, day labour, huckster. Rickshaw pulling/driving is the largest sector that soaks up poor and marginal people among these informal job sectors in Rajshahi city. Being popular, profitable, and low investment cost, a large number of people have changed their occupation and are involved in e-rickshaws and two-seated battery-driven auto-rickshaws driving. City dwellers and migrants from periphery and other districts come in Rajshahi city and drive e-rickshaws. This informal job sector has positive and negative effects on city dwellers, the energy sector and the environment. Many e-rickshaws create a traffic jam in the city's most essential points, create pressure on energy demand, and attracts marginal people from rural areas, which cause development slam areas in Rajshahi city. Production, transportation, and distribution of batteries consume natural resources and emit exhaust and other pollutants into the atmosphere, contributing to an accelerating depletion of natural resources and greenhouse effects. At the same time, improper and careless handling of waste batteries and disposal of batteries in landfill sites can result in the release of corrosive liquids and dissolved metals that are toxic to plants, animals, groundwater and the environment (Merry, 2018).

Considering the present traffic jam in Rajshahi city, excessive consumption of electricity and the importance of e-rickshaws for city-dwellers and informal job market, this study tries to answer the following questions:

1) Are e-rickshaws or two-seated battery-driven auto-rickshaws driving the most significant informal job sector in Rajshahi city?
2) What are the strengths and opportunities of this informal sector?
3) What are the weaknesses and threats of this sector?

The popularity and Number of e-rickshaws in Rajshahi city have been increasing day by day due to less fare, less laborious and high speed, on the other hand, the Number of humans pulling rickshaws has been decreasing due to low speed, much laborious and low income (Basri et al., 2016). It is found that the average daily income of an e-rickshaw driver was Tk. 800 – Tk. 1000, where the human pulled rickshaw driver earned Tk. 300 –Tk. 400 or sometimes less than that. The previous rickshaw pullers changed their manual rickshaws to e-rickshaws, and at the same time, many poor and marginal people migrated to this job. The objectives of this paper are:

i) To investigate the strengths and opportunities of e-rickshaw driving in Rajshahi city;
ii) To identify the threats and weakness of this informal sector;
iii) To develop some policy recommendations to overcome the threats and weaknesses of this sector.

A recent study depicted that battery-driven auto-rickshaws have reduced the unemployment problem by about 2%, increasing income, social status, and comfort (Rahim et al., 2013). It is found that the battery-driven auto-rickshaw has consumed about ten kilo-watt energy per charging and can travel at an average distance of 150 km per charging. Rana et al. (2013) investigated that this mode of transportation creates pressure on the local electricity supply and is responsible for 1.53 hours of load shading a day, which happens at off-peak periods, such as between 11.00 pm to 7.00 am. It is referred that e-rickshaw is economically beneficial as the cost-to-income ratio of this mode of transport was 100:185 and currently the e-rickshaw drivers earn two to three times more money than their previous job (Rana et al. 2012). They also mentioned that 21% of the e-rickshaw drivers were previously unemployed and now engaged in this sector, and 38% of drivers decided to migrate to Dhaka if this mode of transport was not introduced in their city. Singh (2014) has surveyed socio-economic impacts and the technical characteristics of e-rickshaws in Delhi, India and found that this industry had a positive role in urban employment and income generation with some problems that affected the system. Mallik and Arefin (2018) emphasised redesigning the three wheeler auto rickshaw to make the key power source hybridised, which can take advantage of several sources of renewable energy, i.e. solar energy, wind energy. Solar energy and thermal energy can be used to drive the auto-rickshaw jointly using hybridisation, and in this case, solar energy is preferable as we get a massive amount of energy from the sun. Currently, the three-wheeler auto-rickshaws in Bangladesh are running on fuels (Compressed Natural Gas/Liquefied Petroleum Gas/petrol), non-renewable resources and the burning of petrol and natural gas and oils produce carbon dioxide that is responsible for global warming. Compared to other conventional vehicles, the researchers prefer micro hybridised vehicles consume less energy and produce much less greenhouse and toxic gases (Mallik and Arefin, 2018).

1.2 Significance of the study

The significance of this study is that very little research has been done on formal and informal job sectors in Rajshahi city. Rajshahi is known as a city of education, and every year, many students complete their higher study and migrate to Dhaka city to search for jobs. Since independence, the Rajshahi region has been deprived of the government's development allocation, and due to low investment and low public expenditure, the employment generation is feeble. In his election manifesto, the present city mayor declared that the employment generation would prioritise his development projects. The city mayor has plans to build an ICT (Information and Communication Technology) park and other industries in Rajshahi city, creating thousands of jobs for the people. Unfortunately, these projects do not progress, and the poor, unskilled and semi-skilled labour forces engage in e-rickshaw driving. This study investigates whether this informal job sector sustains for long-time or not and the barriers and threats involved in it.

1.3 Limitations of the study

At present, the total Number of auto-rickshaws is 15,000 (10,000 six seated and 5,000 two seated auto-rickshaws), where the Number of auto-drivers is 7,000 the beginning, SWOT analysis was first used to analyse businesses, but now it is often used by governments, non-profit organisations and individuals, including investors and entrepreneurs. Analysts present a SWOT analysis as a square with each of the four areas making up one quadrant which provides a quick overview of the company's position. The findings under a particular heading may not be of equal importance, but they all should represent critical insights into the balance of opportunities and threats, advantages and disadvantages and so forth (Shewan, 2019).

Table 2.1: Breaking down of SWOT analysis process

S Strengths	W Weaknesses	O Opportunities	T Threats
• Things the sector does well • Qualities that separate the sector from competitors	• Things that the sector lacks • Things other sectors do better than this sector • Resource limitations	• The emerging need for the product or service • Few competitors of the product or service • Excess or shortage of supply	• Changing regulatory environment • Changing customer attitudes • Emerging competitions

Source: Shewan, (2019)

Generally, the four elements of all SWOT analyses are common, but many organisations compartmentalise these elements into two distinct subgroups: inter and external (Shewan, 2019). Strengths and weaknesses are considered internal factors resulting from organisational decisions under the control of an organisation or team. Similarly, emerging competitors would be categorised as a threat in a SWOT analysis, but since there is very little to do about this, this makes it an external factor.

Table 2.2: Internal and external analyses or matrices

	Opportunities (external, positive)	Threats (external, negative)
Strengths (internal, positive)	**Strength-Opportunity strategies** which of the company's strengths can be used to maximize the opportunities you identified?	**Strength-Threats strategies** How can you use the company's strengths to minimize the threats you identified?
Weaknesses (internal, negative)	**Weakness-Opportunity strategies** What action(s) can you take to minimize the company's weaknesses using the opportunities you identified?	**Weakness-Threats strategies** How can you minimize the company's weaknesses to avoid the threats you identified?

Source: Shewan, 2019

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Source: Shewan, 2019

This study mainly focuses on internal factors and little on external factors that may work as strengths, opportunities, weaknesses, or threats. It is easy to control the internal factors with collaboration with city corporations and administration.

3. Results and Discussion

Rajshahi region is in a backward position both socially and economically. Bangladesh government, as well as local politicians, gave little attention to the development of this region. The previous mayor, who supported the central government (2008-2013), took many development projects like construction of roads, drain, footpath, supply of gas at the household level, and beautification. From 2013 to 2018, no development activities were seen in this city due to political instability and inefficiency of the authority of the city corporation. During that period, the industrial sector didn't expand since there was no permission to supply gas at industrial sector and due to this, there is no mentionable/worth-mentioning achievement in the employment sector of Rajshahi city. The present city mayor will take massive development projects related to employment generation, but the progress is not satisfactory. The noticeable progress has been seen in the e-rickshaws/auto rickshaws driving sector, where the skilled and unskilled young generation is involved. Primarily, this informal job sector creates some employment opportunities, but this does not support long-term sustainable development.

3.1 Demographic features of the respondents surveyed

3.1.1 Age of the respondents surveyed

Age plays a vital role in boosting up a household's economy. It means that the Number of more young members in a household results in more labour force and hence more income. The results in the following table show the age groups and percentages statistics of the respondents. The Age of the respondents is classified into five age groups, i.e.15-24, 25-34, 35-44, 45-54 and 55 – above. Most of the respondents (36.0%) are in the age group of 25-34 years. At the same time, 29.7% and 18.0% of respondents belong to the 35-44 and 45-54 groups, respectively. Therefore, it is clear that most of the respondents in the study area belong to the middle age group, which indicates that most of the respondents are directly involved in earning the group.

3.1.2 Level of Education

The level of education is an essential factor that positively impacts human behaviour and earning (Hasan, 1991). Education enhances the quality of the

Table 3.1: Age distribution of the respondents surveyed

Range of age	Frequency	Percentage
15-24	18	16.2
25-34	40	36.0
35-44	33	29.7
45-54	20	18.0
Total	111	100.0

Source: Field survey, 2019

respondents, which is helpful to diversify their income sources. In this study, the education level of the respondents is classified into six categories, i.e. class 1-5, class 6-9, S.S.C, H.S.C, bachelor, and masters. The findings show that among the educated respondents, 1.8 per cent of the households have education up to undergraduate level, followed by 34.2 per cent and 34.2 per cent are having S.S.C and H.S.C degrees, respectively. The rest of the households have completed either primary or secondary levels of education. It is alarming that highly educated people also involved in this low earning job sector.

Table 3.2: Education level of the respondents surveyed

Level of education	Frequency	Percentage
Class 1-5	11	9.9
Class 6-9	38	34.2
S.S.C	38	34.2
H.S.C	20	18.0
Bachelor's	2	1.8
Masters	2	1.8
Total	111	100.0

Source: Field survey, 2019

3.1.3 Number of family members of the respondents surveyed

Table 3.3 indicates the distribution of family members of the auto drivers. The average family size is 4.95 of the respondents surveyed in Rajshahi city, which is slightly higher than the national average of 4.44 in 2011 (The Independent, 2017), where 37.8 % respondents have 5 members 27.0% have 4 members in their families. The results have shown that still there are some joint families (5.4%) where family members exist between 8 and 14. Around 90.0% of respondents have a small family where family members vary between 3-6.

Table 3.3: Distribution of family members of the respondent's family surveyed

Number of a family member	Frequency	Percentages
3.00	15	13.5
4.00	30	27.0
5.00	42	37.8
6.00	15	13.5
7.00	3	2.7
8.00	2	1.8
9.00	1	.9
11.00	1	.9
14.00	2	1.8
Total	111	100.0
Average family member	4.95	

Source: Field survey, 2019

3.1.4 Number of school-going children of the respondent's family

The number of school-going children is very important to analyse the socio-economic conditions as the auto drivers have to bear the expense of children's education with low and limited income. Though female child gets some benefits from the government but not sufficient, sometimes the auto drivers cannot provide adequate educational facilities.

Table 3.4: Number of school-going children of the respondent surveyed

Number of school-going children	Frequency	Percentage
No school going children	8	7.2
1.00	35	31.5
2.00	57	51.4
3.00	10	9.0
4.00	1	.9
Total	111	100.0

Source: Field survey, 2019

3.1.4 Earning members of the respondent's family surveyed

The number of earning members is an important factor for the solvency of a household. Per-capita earning is very low which is not sufficient to maintain family expenditure. The households which have more than one earning members get some financial freedom. This study found that 64.0% households have one earning member and 31.5% have two earning members. Very few households (around 5.0%) have 3 to 5 earning members, indicating that these families live jointly. The members of the poor and marginal families involve in low-income jobs and works. In most cases, the e-rickshaws drivers' wives also involve informal job sectors to support family expenditure.

Table 3.5: Number of earning members of the respondent's family surveyed

Number of earning member	Frequency	Percentage
1.00	71	64.0
2.00	35	31.5
3.00	2	1.8
4.00	2	1.8
5.00	1	.9
Total	111	100.0
Average Number of earning member		1.44

Source: Field survey, 2019

3.2 Socio-economic features of e-rickshaw drivers

3.2.1 Main and previous occupation of the respondents surveyed

The households in the study area are involved in a variety of activities for earning their livelihood. In terms of occupation, they are grouped as auto driving, business and others. The respondents, along with auto driving, adopted some other occupations to supplement their income. It is found from Table 3.6 that 84.7% of respondents take auto driving as their primary occupation, whereas only 4.5 % of respondents do business as their primary earning source. It indicates that a significant portion of the respondents drives auto-rickshaws all day long. Around 12% of respondents were involved in other job sectors to earn and drive auto-rickshaws as their supplementary job.

Auto-rickshaw has introduced in Rajshahi city approximately one decade ago and getting popularity day by day. Table 8 has shown that 34.2 % auto drivers were involved in business but now driving e-rickshaws and 50.5% came from other jobs like construction work, day labour. Most of the respondents left their previous job and started auto driving as it is comfortable and income is also high.

Table 3.6: Main and previous occupation of the respondents surveyed

Main Occupation			Previous Occupation		
Category	Frequency	Percentage	Category	Frequency	Percentage
Auto Driving	94	84.7	Service	8	7.2
Business	5	4.5	Business	38	34.2
Others	12	10.8	Farming	9	8.1
Total	111	100.0	Others	56	50.5
			Total	111	100.0

Source: Author's own calculation,2019

3.2.3 Ownership of the auto-rickshaws of the respondents surveyed

The financial condition of the respondents of Rajshahi city is not well as there are no sufficient job opportunities and earning sources. It is difficult for them to manage Tk. 75,000-1,75,000 at a time to buy e-rickshaws or two seated battery driven auto rickshaws. Table 3.7 shows that 69.4 per cent of respondents have personal auto-rickshaws, whereas 30.6% drive rented auto-rickshaws. Though 70.0% of respondents have personal e-rickshaws, most of them have a loan in different organisations.

Table 3.7: Ownership of the auto-rickshaws

Type of ownership	Frequency	Percentage
Personal	77	69.4
Rental	34	30.6
Total	111	100

Source: Author's own calculation,2019

3.2.4 Producer of e-rickshaws answered by respondents

In the beginning, 100% of auto-rickshaws were imported from China, but now the scenario has changed. Now the local producers and technicians are efficient enough to manufacture auto-rickshaws locally. Due to local production, the price of the auto-rickshaws has been reduced and save foreign currency which was spent on buying them from abroad.

Table 3.8: Producer of e-rickshaws answered by respondents

Name of country	Frequency	Percentage
Bangladesh	96	86.5
China	13.5	13.5
Total	111	100

Source: Authors' calculation, 2019

3.2.5 Price of auto-rickshaws and income of auto drivers

The price of e-rickshaw (6 seated) and battery-driven two seated auto-rickshaw is not the same. Two seated battery-driven auto-rickshaw is manufactured locally, and the price varies between Tk. 70,000 to Tk. 1,00,000, where the price of six seated auto-rickshaw varies between Tk. 1,20,000 to Tk. 1,75,000. This study found that the respondents paid an average Tk. 123,116.90 for purchasing their e-rickshaw, where the minimum cost was Tk. 65,000.00, and the maximum cost was Tk. 175,000.00. The price of e-rickshaw is very high for poor and marginal drivers as this study found that 62.20% of auto drivers took credit for purchasing the e-rickshaw and the average loan amount was Tk. 74,637.68.

The average family income of the respondents was Tk. 21,418.92, and the minimum and maximum income were Tk. 17,000.00 and Tk. 50,000.00 respectively. The average earning members of the respondent's family were 1.44, where 62.20% family has one earning member, and 37.80% family has two earning members. Therefore, the e-rickshaw drivers were the principal earning members of the family. This study found a clear difference between the income of e-rickshaw drivers who have personal e-rickshaw and those who operate rented e-rickshaw. The average monthly income of e-rickshaws drivers who have personal e-rickshaws was 26,668.83, but the average monthly income of e-rickshaws drivers who have rented e-rickshaws was Tk 10,279.41 excluding the rent (Tk. 13,773.52), they have to pay the owners. More than fifty per cent of income goe s to the owner who operates rented e-rickshaws.

Table 3.9: Price of e-rickshaws and income of auto drivers

Income and expenditure (in Tk.)	Average	Minimum	Maximum	Frequency
Price of auto-rickshaw	123,116.90	65,000.00	175,000.00	77
Monthly family income	21,418.92	17,000.00	50,000.00	111
Monthly income from auto driving (personal auto-rickshaw)	26,668.83	15,000.00	27,000.00	77
Monthly income from auto driving (rented auto-rickshaw)	10,279.41	7,500.00	18,000.00	34
Monthly rent paid to the owner of auto-rickshaw	13,773.52	10,500.00	16,500.00	34

Source: Authors' calculation, 2019

4.2.6 Net income of e-rickshaws drivers

Table 3.10 indicates that the average total monthly income of the e-rickshaws drivers was Tk. 21,732.43, where the maximum income was Tk. 33,000.00, and the minimum income was Tk. 15,000.00. The e-rickshaws drivers have some monthly expenditures like rent of e-rickshaws, cost of battery charging, rent of garage, repairing cost and other costs. The e-rickshaws drivers who operated rented auto spent a large portion of income for rent (monthly average Tk. 13,772.52). The average monthly battery charging cost was Tk. 4,550.64, and the average repairing cost was Tk. 875.51. The e-rickshaws drivers who drive rented e-rickshaws no need to pay the charging cost and rent of the garage. The average monthly cost of maintaining an e-rickshaw was Tk. 8,408.46, and sometimes this cost reached Tk. 16,900.00. Finally, excluding all maintaining costs, the e-rickshaws drivers earned Tk. 13,323.96 every month, which is very low for maintaining their daily livelihood.

Table 3.10: Net income of e-rickshaws drivers

Income and expenditure	Average (monthly)	Minimum (monthly)	Maximum (monthly)	Frequency
Monthly income from e-rickshaw	21,732.43	15,000.00	33,000.00	111
Maintaining cost of e-rickshaw				
Rent paid to the owner of auto-rickshaw	13,773.52	10,500.00	16,500.00	34
Battery charging cost	4,550.64	1200	6,500.00	77
Repairing cost	875.51	100.00	1,500.00	78
Rent of garage	598.03	300.00	900.00	56
Other expenses	297.36	100.00	1,500.00	38
Monthly cost of maintaining e-rickshaw	8408.46	1,920.00	16,900.00	111
Monthly Net income from e-rickshaw	13,323.96	7,100.00	21,000.00	111

Source: Authors' calculation, 2019

3.2.7 Possibility of accident of the e-rickshaws

Due to low speed and running in the city area, the possibility of an accident is very low of the e-rickshaws. The study found that 12.6% of respondents mentioned a high chance of an accident of e-rickshaw, whereas 87.4% of respondents indicated a low chance of an accident. When the e–rickshaws are running on the highway, the possibility of an accident is very high. No training or driving test is required for running e-rickshaws, and sometimes unskilled rural people come in city area and drive e-rickshaws, who have not enough idea about the traffic rules in the city area that may cause an accident.

Table 3.11: Possibility of accident of the e-rickshaws

Possibility of accident	Frequency	Percent
High	14	12.6
Low	97	87.4
Total	111	100

Source: Authors' calculation, 2019

3.3 Analysis of Strengths, weaknesses, opportunities and threats of e-rickshaw driving (SWOT Analysis)

3.3.1 Strengths

As an informal job, e-rickshaw driving has significant contributions to social and economic life that respondents identify. Today, Rajshahi not only offers cleaner air and an essentially dust-free environment for its residents but has also received worldwide recognition for achieving the most considerable reduction in levels of harmful PM10 (particulate matter 10 micrometres or less in diameter) between 2014 and 2016. It sets an inspiring precedent for other major cities, particularly Dhaka, in successfully tackling air pollution (Khan, 2017). The e-rickshaws have contributed to keeping the air clean as these vehicles do not produce CO2 directly and take the place of CHG auto-rickshaws and diesel-operated light vehicles in Rajshahi city. The results indicated that 97.3% of e-rickshaw drivers believed that these vehicles are environmentally friendly, and 91.8% of respondents believed that e-rickshaw Rajshahi city releases less CO2 into the air. The people involved in e-rickshaw driving (83.3% respondents) earn more money than their previous job and even earn more money than peddlers who drive human-pulled rickshaws. It is found from Table 3.12 that 67.6% of respondents answered that their daily income is sufficient to maintain family expenses, whereas 32.4% of respondents face difficulties to bear family expenses with this small earning. The survey results have shown that 99.1% of e-rickshaws drivers agreed that e-rickshaw creates directly and indirectly tremendous work opportunities (e-rickshaw drivers, repairing and parts shops, garage business, import business, manufacturing industry) for this city dwellers and for the migrant people, where 90.1% agreed that e-rickshaw driving sector alone offers enormous job opportunities for the people. The most vital features of these vehicles are that they are suitable for travelling short distances (95.5%) and safe and comfortable (80.2%) in the city area. The poor and marginal people who have pulled rickshaws got relief from human and laborious occupation due to introducing e-rickshaws. The temperature in Rajshahi city is scorching in the summertime, and it was difficult for both pullers and passengers to travel by human pulled rickshaws which were very slow and laborious. However, e-rickshaws also provide transport services cheaply, especially the six seated e-rickshaws, which are affordable for all categories of people.

3.3.2 Opportunities

The e-rickshaw driving sector creates new job opportunities for the city dwellers, and more than fifty per cent (60.4%) respondents liked to take it as a long term

Table 3.12: Strengths of the e-rickshaw driving (the biggest informal job sector in Rajshahi city)

Strengths	Yes	No
Is e-rickshaw environmental friendly?	97.3	2.7
Do you believe that due to e-rickshaw, Rajshahi city releases less CO_2into the air?	91.8	8.2
Is your daily income from e-rickshaw driving enough to cover family expenses?	67,6	32.4
Do you believe that e-rickshaw creates employment in Rajshahi city?	99.1	.9
Do you believe that e-rickshaw driving is the biggest new informal job source in Rajshahi city?	90.1	9.9
Is it good for travelling a short distance?	95.5	4.5
Does e-rickshaw provide transport service at a cheap cost?	99.1	.9
Is e-rickshaw driving well than the previous occupation?	92.8	7.2
Do you earn more money than in your previous job?	83.8	16.2
Do you need less effort to run an e-rickshaw than peddle a rickshaw?	91.9	8.1
Is this mode of transport safe and comfortable?	80.2	19.8

Source: Field Survey, 2019

occupation. The remaining 39.6% of respondents did not like to take it as a long-term occupation due to high rental costs, license fees, and excess e-rickshaws in Rajshahi city. The Rajshahi city area and population increasing day by day, and the demand for e-rickshaws also increase along with population, which implies that this informal job sector provides a good number of long-term job opportunities for the city dwellers. E-rickshaws dominate Rajshahi city, and very few diesel and NG operated vehicles are running through the town. The city dwellers feel comfort by travelling with e-rickshaw as it is pollution-free and people can travel in any distance and narrow roads. Table 3.13 has shown that 46.80% of respondents believe that e-rickshaws is one of the main reasons not to introduce diesel or CNG operated vehicles in Rajshahi city. Local engineers and manufacturers always working to improve the quality of e-rickshaws, and there is a chance to operate the e-rickshaws with solar energy, as indicated by 34.23% of respondents. The economic and social activities in Rajshahi city increase very rapidly. Small and medium traders use e-rickshaws at cheap cost and travel easily in all locations, which speed up the city trade and economic and social development.

3.3.3 Weaknesses

Though this mode of transport and informal job sector has several advantages and some weaknesses, according to the official report of Rajshahi city corporation,

Table 3.13: Opportunities of the e-rickshaw driving (the biggest informal job sector in Rajshahi city)

Opportunities	Yes	No
Do you like to take e-rickshaw driving as a long term occupation?	60.4	39.6
Do you believe that more advanced e-rickshaw will take the place of diesel or gas operated vehicles soon?	46.80	53.20
Do you believe that shortly, e-rickshaw can operate with solar energy?	34.23	65.77
Do you believe that e-rickshaw contributes to economic development?	97.3	2.70

Source: Field Survey, 2019

around 15,000 e-rickshaws (six seated and two seated) are running with legal licenses. However, unofficial reports have shown that around 40,000 e-rickshaws are operating all over the city (The Financial Express, 2019). It indicates that around 25,000 e-rickshaws are running illegally, which creates traffic jams, increases malpractices, and reduces legal license owners' income. However, 96.4% of respondents answered that they have legal licenses, but it is difficult to ensure that they are legal or illegal. The charging of the batteries of e-rickshaws creates pressure on electricity all over the country along with Rajshahi city. In the summer season, load shading in Rajshahi city increases due to battery-driven e-rickshaws. When there were 7,000 auto-rickshaws in Rajshahi city in 2013, battery-driven auto-rickshaws consumed 81.2 MWh per day, i.e. 10.15MW, and the average load at Rajshahi city in Bangladesh was 235 MW. The average load due to battery-driven auto-rickshaws at Rajshahi city was 10.1 MW, 4.32% of the total load at Rajshahi city in Bangladesh (Rahim et al. 2013). Now 40,000 e-rickshaws are running at Rajshahi city, which is responsible for more load shading than a previous time. Another weakness of this sector is that with the help of dishonest officials of Rajshahi City Corporation, a large Number of illegal e-rickshaws is running the city, which is more than demand and necessity. Around 82.9% of respondents agreed that this surplus e-rickshaws create traffic jams and reduce legal e-rickshaws drivers' income. This study has shown that some educated people also drive e-rickshaws since they have no alternative job opportunities, and they (21.6%) believe that this occupation decreases their social status. Table 3.14 has expressed that 62.20% of e-rickshaw owners took credit to buy these vehicles indicate that the price of e-rickshaw is high and beyond the capacity of the poor and marginal people. This mode of transport creates pressure on electricity and indirectly pollutes the air (where electricity is produced by oil, gas or coal in Bangladesh), which is the major weakness of this vehicle. Almost 98.2% of respondents depend on electricity produced by oil or gas or coal, and only 1.8% use another energy source. Finally, though these vehicles are suitable for straight and narrow roads, they are not suitable for hilly roads and bad weather due to their low power capacity.

Table 3.14: Weaknesses of the e-rickshaw driving (the biggest informal job sector in Rajshahi city)

Weaknesses	Yes	No
Do you have a legal license?	96.4	3.6
Does e-rickshaw create pressure on electricity demand?	73.9	26.1
Is the Number of e-rickshaw higher than necessary Rajshahi in the city?	82.9	17,1
Do you believe that e-rickshaw driving increases your social status?	21.6	78.4
Have you taken any loan to buy-rickshaw?	62.2	37.8
Do you use any other charging system (solar energy) except electricity?	1.8	98.2

Source: Field Survey, 2019

3.3.4 Threats of the e-rickshaw driving (the biggest informal job sector in Rajshahi city)

This new mode of transport has some threats to social and environmental sectors. A large number of battery-driven auto-rickshaws have increased the demand for electricity, and to meet up the excess demand of electricity, the government needs to produce more electricity by burning fuel, gas and coal as very little electricity produces from fresh sources like this solar power and hydro. Therefore, these vehicles are the threats (answered by 48.6% of respondents) for the environment as they produce CO2 indirectly. The wasted batteries are also harmful to air, water and land as the wasted batteries release lead (Pb). Nowadays, the people of Rajshahi city face colossal traffic jams in some critical points every day, as indicated by 75.7% of respondents (Table 3.15). Day by day, the illegal and excess e-rickshaws will treat city dwellers since these vehicles create chaos on the roads and essential points. As a light vehicle, e-rickshaws are not permitted to run on the highway and outside the city area, but sometimes the e-rickshaw drivers break the laws and drive on the highway. These light and small vehicles reduce the speed of large vehicles and also causes fatal road accidents. The traffic police and highway police are sometimes unable to control them from running on the highway.

More importantly, due to low income, poor financial conditions, and the absence of a large industrial sector, very few private vehicles are seen on the streets in Rajshahi city. Therefore, maximum people depend on e-rickshaws for their daily travelling, and at the same time, some people accept this opportunity as their better-earning source. However, the threat is that if the other job sectors

Table 3.15: Threats of the e-rickshaw driving (the biggest informal job sector in Rajshahi city)

Threats	Yes	No
Does wasted battery threaten the environment?	48.6	51.4
Do you believe that e-rickshaw is the main reason for the traffic jam in Rajshahi city?	75.7	24.3
Do you believe that e-rickshaw is the main reason for road accidents as a light vehicle on the highway?	53.15	46.85
Do you believe that charging a large Number of e-rickshaws causes excessive load shading in Rajshahi city?	94.59	5.41

Source: Field Survey, 2019

are not expanded, more and more people engage in this informal and low earning sector, create chaos on streets, increase malpractices among different sectors, which ultimately hampered the long-term development of this city.

4. Policy recommendation and conclusion

4.1 Policy recommendation

The above discussion proves that e-rickshaws have made the city transport and communication system easy, less costly, fast, safe and comfortable. The city dwellers cannot think about their daily life without e-rickshaws. This study forwards some policy recommendations to get better service, make city life more comfortable, and sustainably develop Rajshahi city and the whole country.

- To reduce traffic jams in Rajshahi city, Rajshahi city corporation authority should take proper steps to ban illegal e-rickshaws from the city streets and bring all the office staff involved in issuing illegal licenses and doing so malpractices.
- More research and financial support are needed to invent more advanced technology to use solar energy in the e-rickshaws and reduce pressure on electricity consumption and load shading. Government can work with engineering universities and Polytechnique institutes for technological up-gradation.
- The authority of Rajshahi City Corporation should issue a legal license and arrange training and driving tests before issuing the license so that the drivers have a clear idea about traffic rules and regulations.
- There is no space to satisfy this informal job sector. The income from this job sector is not enough to maintain the social and living standard. This employment opportunity is not enough for sustainable and long term

development. This informal sector just absorbs unskilled and poor marginal people with some educated people. There are not enough job opportunities for the skilled and semi-skilled labour force. For developing the Rajshahi region, government and local administration should emphasise developing the industrial sector and IT-based service sector. Local resources based industries (mango, litchi, jute, sugarcane and potato) should establish in the Rajshahi region.

- To reduce fatal accidents on the highway, e-rickshaws should be entirely banned, and financial punishment should be implied if someone breaks the laws.
- The auto stand should clearly indicate where they can pick up and drop passengers in the city area to avoid unnecessary traffic jams and chaos.
- The e-rickshaws drivers who drive rented e-rickshaws earned low income compared to personal e-rickshaws drivers. The rent the drivers paid to the owners of the e-rickshaws is logical as the drivers no need to pay battery charging cost, rent of garage, repairing cost and cost of batteries. The e-rickshaw drivers claimed that the rent is low compared to the distance travel by the passengers. They suggest increasing rent around 40-50% from the existing rent.
- Around 62.20% of e-rickshaws drivers took credit from different non-government organisations to buy e-rickshaws, and they have to pay high interest. Government should provide credit with low or no interest through development bank or Karmoshongsthan Bank

4.2 Conclusion

Transport is essential for city dwellers where cheap and comfortable transport makes city life more manageable. We could not ignore the contribution of e-rickshaws in our daily life as many people use them for means of transport and others use means of earning. Now the city streets accommodate two times more e-rickshaws where around 25,000 are illegal. Along with banning illegal e-rickshaws, a new job sector should be created for the unskilled, semi-skilled and skilled workforce for the people of the Rajshahi city. Day by day, many people are involved in this informal sector and take it as their new earning source, which is not a good sign for sustainable development.

References

Basri, R., Khatun, T., Reza, M. S., & Khan, M. H. (2016). They are changing modes of transportation: A case study of Rajshahi City Corporation. Bangladesh Journal of Political Economy, 31 (3), pp.211-221.

Country Report .(2010). Informal employment of Bangladesh. Asian Development Bank (ADB)and Bangladesh Bureau of Statistics (BBS), 2012.

Khan, M. (June 02, 2017). Rajshahi: A model for tackling ambient air pollution in our cities. The Daily Star. Retrieved from: https://www.thedailystar.net/star-weekend/rajshahi-model-tackling-ambient-air-pollution-our-cities-1414174

Mallik, A., & Arefin, A. (2018). Micro hybridised auto-rickshaw for Bangladesh: A solution to green energy vehicle. The Open Mechanical Engineering Journal, (12), pp. 124-137.

Merry, M. (March 13, 2018). Environmental problems that batteries cause. Retrieved from: https://sciencing.com/environmental-problems-batteries-cause-7584347.html. Retrieved on December 17, 2019.

Rahim, M. A., Joardder, M. U. H., Hoque, S. M. N., Rahman, M. N., & Hasan, N. (2013). Socio-Economic & Environmental Impacts of Battery Driven Auto-Rickshaw at Rajshahi City in Bangladesh, International Conference on Mechanical, Industrial and Energy Engineering 2012, Khulna, Bangladesh.

Rahman, M. M. (2013). Electric Motorized Rickshaw Can Preserve the Inhumanity Rickshaw Labor in Bangladesh without Interrupt Power System. Proceedings of 4th Global Engineering, Science and Technology Conference 27-28 December 2013 BIAM Foundation, Dhaka, Bangladesh ISBN: 987-922069-43-6.

Rana, M. S., Hossain, F., Roy, S. S., & Mitra, S. K. (2013). Battery Operated Auto-Rickshaw and Its Role in Urban Income and Employment Generation. International Journal of Advancements in Research &Technology, Vol 1, Issue 5, October 2012 ISSN 2278-7763.

Shafiq, S. (2017). Rickshaws continue to grow in numbers thanks to trade unions. DhakaTribune.https://www.dhakatribune.com/bangladesh/dhaka/2017/11/04/ric kshaw s-grow- numbers-trade-unions/. Retrieve on November 21 2019.

Shewan, D. (October 24, 2019). How to Do a SWOT Analysis for Your Small Business (with Examples). The Wordstream Blog. https://www.wordstream.com/ blog/ws/2017/12/20/swot-analysis

Sing, S. (2014), A Study of the Battery Operated E-rickshaws in the State of Delhi Researching Reality Summer.

The Financial Express (May 3, 2018). Easy bikes dominating Rajshahi streets. The Financial Express. From: https://thefinancialexpress.com.bd/national/country/easy-bikes-dominating-rajshahi-streets-1525358859. Generated on November 20 2019.

The Independent (October 2017). Family size getting smaller. The Independent. Experts attribute trend to education, awareness, better life. Retrieved from: http://www.theindependentbd.com/printversion/details/120957

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Options and Determinants of Livelihood Diversification under Environmental Change in Coastal Communities of Bangladesh

Apurba Roy*

Abstract

The study aims to investigate the options and determinants of livelihood diversification strategies adopted by the climate-vulnerable coastal communities in Bangladesh. In order to peruse the research objective, a set of statistical tools such as mean, standard deviation, Simpson Index (SI), Herfindahl Index (HI), Priority Index (P.I), and multiple linear regression model have been applied. Simple random sampling has been used to select the sample, and multistage sampling has been applied to select the study area. The descriptive statistics show that most household heads are middle-aged and have completed the secondary education level. A total of 12 diversified economic activities adopted by the respondents have been identified. Fish cultivation, rice production, domestic bird rearing and working as agricultural labour are commonly adopted activities. The annual return from the above economic activities varies widely. The estimated results from the SI and HI show that the overall diversification level is not satisfactory among the respondents. There is still scope for increasing diversification levels. In addition, the estimated regression result indicates that age, education, earning family member, social organisation, government donation positively influences the decision to take diversified economic activities. Besides, natural disasters, risk, poor roads, lack of money and access to institutional credit have been identified as barriers to livelihood diversification activities. The research findings provide a deep understating of the existing livelihood diversification strategies in the context of the coastal region of Bangladesh.

* Assistant Professor, Department of Economics, University of Barishal, Barishal. E-mail: aroy@bu.ac.bd

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Keywords *Livelihood Diversification · Simpson Index (SI) · Herfindahl Index (HI) · Priority Index (P.I) · OLS · Coastal Region · Bangladesh*

Introduction

The livelihood diversification (LD) strategy is expected to promote economic growth and reduce rural poverty in developing countries [1]. Livelihood diversification often refers to the process of combining both agricultural and non-agricultural activities to survive and improve the standard of living [2-5]. Households across the developing countries are trying to diversify their livelihood activities to secure from risks and cope with economic and environmental shocks[2, 6, 7]. By providing alternative non-farm job opportunities, livelihood diversification is crucial in sustainable environmental development and rural poverty reduction[8].

Climate change has emerged as a threat to natural life and livelihood systems[9]. In order to cope with the changing situation, smallholder farmers in the coastal regions are adopting both on-farm and off-farm adaptive strategies such as selling household assets, migration of the entire households and decreasing food consumption/changing diets, planting drought-tolerant crops. These diversified activities are taken to manage risk and improve the lives of the farming households[6, 10]. Several factors such as education level, the number of livestock, and farming experience affect the adoption of diversified activities[11]. Most importantly, the household head's age, cropland possession, and distance from markets are essential determinants of livelihood diversification strategy [12-14].

Despite having a negligible contribution to global emission, Bangladesh is experiencing the adverse impact of global warming in changing climate [15]. Farmers are being forced to alter or diversify their agricultural activities to cope with climate-driven water availability[16]. Besides, several natural disasters such as cyclones, floods, tidal surges, droughts, salinity intrusion, and waterlogging are posing severe threats to the life and livelihoods of the coastal communities of the country [17, 18]. In addition, the rural riverine households in Bangladesh are confronted with many climate-driven hazards, including riverbank erosion, resulting in the loss of productive land and other natural resources of the riverine households, thus threatening their livelihoods and food security [19, 20].

In order to tackle these events, the household in the community considers taking multiple economic activities to reduce the loss. Taking these activities into their portfolio has successfully increased their capacity to prevent significant threats and losses. However, there is very little research on the issue from the context of the country. In order to increase the understanding of the issue, the current research employs rigorous and in-depth effort to bring light to the factors affecting livelihood diversification strategies and available effective diversification strategies in the context of the coastal region of Bangladesh.

Methodology

Study area selection

A multistage sampling technique has been applied to select the study area. In the preliminary stage, Satkhira District, one of the south-west coastal districts of Bangladesh[21], has been chosen as the primary sampling unit (PSU). After that, Shyamnagar Upazila (sub-district) under Satkhira District has been selected as a secondary sampling unit (SSU) (Figure 1). The Upazila is situated between 21°36′ and 22°24′ north latitudes and between 89°00′ and 89°19′ east longitudes covering an area of 1968.24 square kilometres [22].The reason for choosing Upazila as the study area is that this area is located near the coastal belt [23] and is highly vulnerable to natural disasters such as cyclones, flood, salinity intrusion [24].

Selection of sample

Smallholder farmers from Burigoalini, Munshiganj, and Atulia unions of Shyamnagar Upazila have been chosen as the research sample. A total of 60 samples has been selected by applying a simple random sampling technique. A pilot survey has been conducted in the study area to test the questionnaire's validity and reliability before collecting the final data. After the pilot survey, a pre-tested structured questionnaire collected final data using the face-to-face interview method between February and March 2019. In addition, focused group discussion, key informants and observation methods have been used to supplement the data collection procedures.

Data analysis methods

In order to analyse the collected data, a set of statistical and econometric tools has been used. Descriptive statistics such as mean, standard deviation, minimum, and maximum have been used to examine the respondents' socioeconomic status. Simpson Index (SID) and Herfindahl Index (HI) have been used to demonstrate livelihood diversification. Multiple linear regression has been applied to identify the determinants of livelihood diversification. Priority Index (P.I) has been used to rank the constraints to adopting diversified activities.

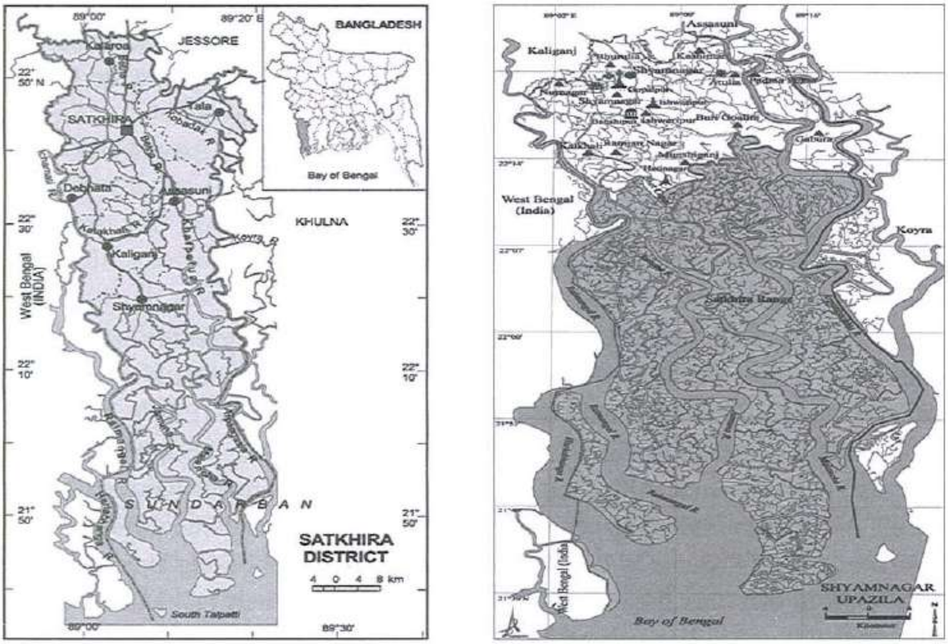


Figure 1. Location of the study area: The Shyamnagar Upazila.
Source: Author compilation based on Banglapedia [22].

Simpson Index (SI)

Several indicators and indices such as Simpson index, Herfindahl index, Ogive index, Herfindahl–Hirschman index, Entropy index, Composite Entropy index have been used to measure the household livelihood diversification. Among them, the Simpson index is widely used for its simple calculation procedure and wider acceptability. This research adopts the Simpson index from [25] formulated in Equation 1.

$$\mathrm{HI} = \sum_{i=1}^{n} (s_i^2) \ldots 2$$

Where N denotes the total number of income sources and Pi indicates the income proportion of the ith income source. The value of SI lies between 0 and 1. When there is an entire specialisation, the value of SI becomes 0, and when it moves towards 1, there is an increase in diversification level.

Herfindahl Index (HI)

Another popular and widely used index to measure economic diversity is the Herfindahl Index (HI)[26]. The Herfindahl Index can also measure the level of household diversification formulated in Equation 2 [27, 28].

$$HI = \sum_{i=1}^{n} (s_i^2) \ldots 2$$

Here, Si represents the share of each livelihood activity i to the overall income of the household. The value of HI ranges from 0 (when the household has a large number of economic activities or high diversity) to 1 (when the household's income comes from a small number of economic activities or entire specialisation.

Regression Analysis

Multiple linear regression has been used to identify the determinants of livelihood diversification. The general form of the regression model is given in Equation 3[25, 29].

$$D_{ij} = \beta_0 + \beta_i X_i + \mu \ldots 3$$

Here,

D is the dependent variable indicating diversification of household i measured in the number of activities j.

β0: Constant

βi: Vector of parameters

Xi: Vector of independent variables,

i: 1,2, 3,1 households, j: Number of household economic activities

The description of the independent variables has been presented in Table 1.

Constraint Analysis

The socioeconomic and environmental factors highly influence the number of diversified activities adopted by the household. A set of constraints has been identified and ranked using the priority index given in Equation 4[30].

$$P.I = \sum Sifi/n \quad (0 \leq P.I \leq 1) \ldots\ldots\ldots\ldots(4)$$

Here, P.I = Priority Index, Si = Scale value of ith priority, fi = frequency of ith priority, N = Total number of observations A five-point scale has been applied to construct the index, where the scale values range from 1 to 0 with the priority of 1st to 5threspectively.

Table 1: Description of variables

Sl.	Variable Name	Unit of Measurement	Definition
1	Age (X_1)	In year	The age of the household head.
2	Education (X_2)	In the year of schooling	The education status of the household head.
3	Family Member (X_3)	In number	A total family member of a household.
4	Earning Member (X_4)	In number	Total earning member of a household.
5	Educated Family Member (X_5)	In number	A family member who completed ten years of schooling
6	Distance (X_6)	In Kilometre	The distance from home to the nearest town.
7	Loan (X_7)	Dummy (1= yes, 0 = otherwise)	Whether loan/credit taken by the household in the last three years.
8	Training (X_8)	Dummy (1= yes, 0 = otherwise)	Whether the household head has taken any professional training.
9	Social Work Participation (X_9)	Dummy (1= yes, 0 = otherwise)	Whether the household head has participated in any social works.
10	Health/Financial Problem (X_{10})	Dummy (1= yes, 0 = otherwise)	Whether a household head has any financial or health-related problems.
11	Forest Resource Use (X_{11})	Dummy (1= yes, 0 = otherwise)	Whether the household uses resources from the adjacent forest.
12	Govt. Donation (X_{12})	Dummy (1= yes, 0 = otherwise)	Whether the household has got any government donation.

Source: Author compilation.

Results and Discussion

Socio-demographic characteristics

Table 2 shows the general characteristics of the respondents. It has been found that the average age of the respondents is around 46 years old, with a minimum of 27 years to a maximum of 70 years. More than fifty per cent of the respondents belong to the age group 36 years to 50 years. The size of the family varies from household to household. Survey data revealed that nearly 60% of the household has a family member of 4 to 6 people.

The educational status of the household head is found to be below secondary level, on average six years of schooling completed. It has been found that the majority of the respondents (53%) have completed secondary level education. On the other, 33%respondents have completed primary school. It has also been noted that 75% of households have at least 1-3 members who have completed at least ten years of schooling. In general, the household head is the main earning person

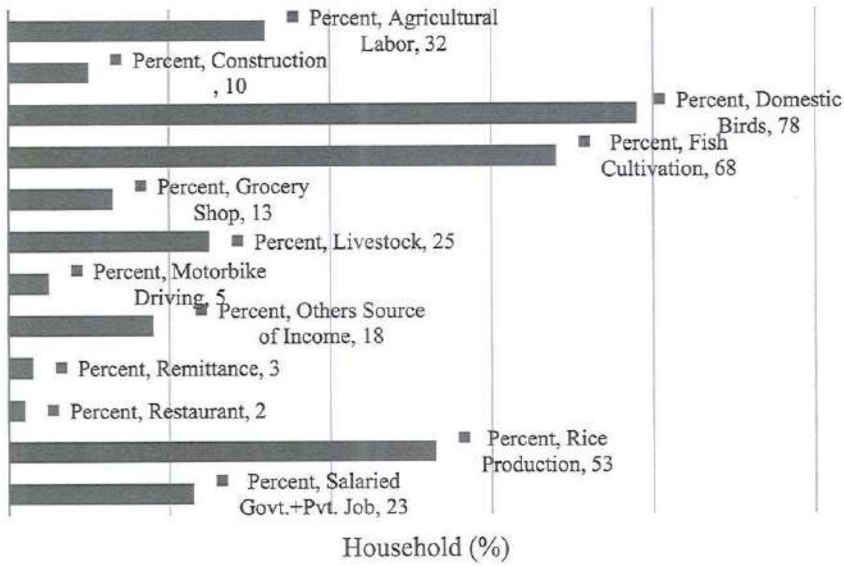
Table 2: General profile of the respondents

Characteristics	Frequency	Per cent (%)
Age		
15-35	8	13
36-50	32	53
51-64	17	29
64+	3	5
Mean	46.52	
Education (household head)		
Illiterate	1	2
Primary	20	33
Secondary	31	53
Higher Secondary	3	5
Graduate	4	7
Mean	6.93	
Education (family member)		
0	12	20
1-3	45	75
4-6	3	5
Mean		
Family size		
0-3	12	20
4-6	38	63
6+	10	17
Mean	4.95	
Earning member (except the household head)		
0-2	47	78
3-4	13	22
Mean	1.8	
Household landholding (acre)		
0-2	41	69
3-4	9	15
5-7	8	13
7+	2	3
Mean	2.19	

Source: Author's compilation.

of the family. The surveyed data reveal that 77 per cent of households have at least 1-2earning people along with the household head. However, the amount of cultivatable land holding possessed by the households is minimal. A majority of the respondents (69%) own only 0 to 2 acres of land, whereas the average possession of land remains 2.19 acres per household.

Figure 2: Economic activities of the household



Source: Author compilation.

Types of diversified economic activities

Figure 2 presents the diversified economic activities adopted by the household to secure their income flow. Twelve diversified economic activities have been identified and categorised as primary, secondary, and tertiary activities. Primary economic activities generally are agricultural-based, such as rice and fish cultivation, rearing livestock and domestic birds, and working as agricultural labour.The secondary activity includes working in the construction sector. Lastly, some economic activities have been identified as tertiary level activities such as running grocery shops, restaurants, driving motorbike, working in government and non-government organisations, and receipts money as a remittance. It has been seen from Figure 2 that a large share of the annual income of the respondents come from primary activities. The survey results indicate that more than half the respondents get income from rice production (53%), domestic bird rearing (78%), and fish cultivation (68%). On the other hand, a negligible portion of the respondents (10%) secure income from the construction sector. Grocery shop business is run by 13% of the respondents, and 23% are engaged in salaried government and non-government organisations.

Household yearly income share from diversified economic activities

Table 3 represents an annual average income share from various economic activities of the households. The analysed data show that among the broad economic activities, a small number of them provide high returns to the households. The annual average earning from domestic bird rearing becomes BDT3,734 which is adopted by 78% of the respondents. From fish cultivation, 68% of respondents earn on average BDT1.34 lakhs per year. On the other hand, 53% of them get BDT24,000 per year by cultivating rice. In addition, by working

Table 3: Share of annual income from various economic activities

Type of Activities	Average Earning (BDT)	Frequency	Per cent
Domestic Birds	3,734	47.00	78.33
Fish Cultivation	1,34,619	41.00	68.00
Rice Production	24,575	31.00	53.00
Agricultural Labor	48,105	19.00	32.00
Livestock	37,062	15.00	25.00
Salaried Govt.+Pvt. Job	1,46,357	14.00	23.00
Others Source of Income	2,33,545	11.00	18.33
Grocery Shop	1,72,500	8.00	13.33
Construction	42,666	6.00	10.00
Motorbike Driving	80,000	3.00	5.00
Remittances	75,000	2.00	3.33
Restaurant	50,000	1.00	1.67
Overall	2,47,358	60	100

Source: Author's compilation.

Table 4: Distribution of respondents on the extent of diversification

Range	Simpson Index (SI)		Herfindahl Index (HI)	
	Frequency	Percentage	Frequency	Percentage
0	1	2	0	0
0.01-0.10	10	17	0	0
0.11-0.20	6	10	1	2
0.21-0.30	4	7	3	5
0.31-0.40	9	15	8	13
0.41-0.50	9	15	11	18
0.51-0.60	8	13	6	10
0.61-0.70	8	13	11	18
0.71-0.80	4	7	2	3
0.81-0.90	1	2	8	13
0.91-1.00	0	0	10	17
Total	60	100	60	100
	Mean = 0.39; SD = 0.24		Mean = 0.62; SD = 0.23	

Source: Author compilation.

as agricultural labour, some of the respondents (32%) also receive on average BDT48,000 per year. Though the annual return of livestock rearing is nearly BDT37,000 per year, only 26% of the respondents are engaged in this occupation. The annual earnings from the salaried job and grocery business are higher than the other occupations (construction, motorbike driving, restaurant and remittance), although very few of the respondents are involved therein.

Extent of diversification

Table 4 demonstrates the estimated results from the Simpson Index (SI) and Herfindahl Index (HI) to measure the extent of household livelihood diversification. It has been found that the mean value of SI is 0.39 indicating low levels of diversification among the respondents. In addition, it has also been seen that 27% of respondents have indexed values below 0.20. Only 30% of them reach indexed value ranges from 0.30 to 0.50, meaning almost half of the respondents have a lower level of diversification activities.On the other hand, 9% of the respondents are found to be highly diversified. The estimated results from Herfindahl Index have confirmed the same result.

Table 5: Determinants of livelihood diversification

Variable	Coefficients	Standard Error	t	P>|t|
Age (X_1)	0.009	0.02	0.44	0.66
Education (X_2)	0.023	0.05	0.45	0.65
Family Member (X_3)	0.018	0.12	0.15	0.88
Earning Member (X_4)	0.451*	0.25	1.84	0.07
Educated Family Member (X_5)	0.230	0.17	1.34	0.18
Distance (X_6)	0.086	0.07	1.30	0.20
Loan (X_7)	-0.177	0.38	-0.46	0.64
Training (X_8)	-0.220	0.40	-0.55	0.58
Social Work Participation(X_9)	0.560*	0.33	1.69	0.09
Health/Financial Problem (X_{10})	0.515	0.46	1.13	0.26
Forest Resource Use (X_{11})	0.299	0.50	0.60	0.55
Govt. Donation (X_{12})	0.999**	0.38	2.66	0.01
Constant	-1.357	2.16	-0.63	0.53
R^2	0.41			
F value	2.74***			
Observation	60			
Mean VIF	1.87			

Note: * = significant at the 10 percent level, ** = significant at the 5 percent level, *** = significant at the 1 percent level.

Source: Author compilation.

Table 6: Ranking of barriers to adopt diversified activities

Indicator	1st (S=1)	2nd (S=.75)	3rd (S=.50)	4th (S=0.25)	5th (S=0)	Σf_i	PI	Rank
Disaster Frequency	38	9	13	0	0	60	0.85	1
Risk on New Job	5	44	6	5	0	60	0.70	2
Road Condition	2	43	14	1		60	0.69	3
Source of Job	1	15	38	3	3	60	0.53	4
Access to Bank Loan	0	9	40	7	4	60	0.48	5
Scope of New Job	2	7	38	8	5	60	0.47	6
Money for New Venture	1	2	48	4	5	60	0.46	7

Source: Author's compilation.

Determinants of livelihood diversification

A set of factors has been identified to influence the livelihood diversification activities among the respondents by using a multiple linear regression model (Table 5). It has been seen that the value of R2 is 0.41 indicating a 41 percent change in the number of diversified activities adopted by the respondents can be explained by the explanatory variables used in the model.The estimated value of the F-value is statistically significant at the 1 percent level, confirming that the model specified is statistically significant. In addition, the mean value of VIF is 1.87 suggesting no multicollinearity among the explanatory variables used in the model. Results of regression analysis show that the estimated coefficient of age, education and family member positively affect the number of livelihood activities of the respondents, although they are found to be statistically insignificant.

On the other hand, the estimated coefficient of the number of earning members is 0.451, having a positive influence on the livelihood activities, and it is statistically significant at the 10 percent level. In addition, the tendency to participate in social activities leads to affect the livelihood diversification activities. Besides, respondents' tendency to adopt diversified activities is positively influenced by donations from the government, and this relationship is statistically significant at the 5 percent level. Other factors such as the number of educated family members' distance from home to the nearest town, health/financial problems, and use of forest resources are positively associated with the number of diversified activities, although they are statistically insignificant. However, estimated coefficients of loan and training are negatively related to the adoption of livelihood activities, although they are statistically insignificant.

Constraint to adopt diversified activities

Table 6 represents some of the significant constraints to adopting diversified activities identified and ranked using the priority index (P.I). The value of P.I ranges from 0 to 1. The calculated survey data show that disaster frequency ranks first among the barriers (P. I = 0.85). Since the study area is highly prone to natural calamities, the frequency and intensity of natural disastersgreatly influence livelihood diversification activities. The respondents' perception reveals that there is a high risk in adopting new activity in the area they reside in. The respondents' much emphasis on other constraints, risk on new job ranked 2nd position. In addition, poor road conditions, everydayjob sources, limited access to the bank loan, the tiny scope of new jobs and insufficient reserve for the new venture are the other essential constraints ranked 3rd, 4th, 5th, and 6th positions, respectively.

Concluding Remarks

The research aims at investigating the options and determinants of livelihood diversification strategies in the context of the south-west coastal region of Bangladesh. The coastal communities are living under the threat of climate-induced natural disasters. In order to secure their income from natural hazards, they have been adopting several adaptation strategies for the past years. Having occupied various economic activities simultaneously is one of the identified adaptation strategies by the people living in the region. Apart from agricultural activities, both secondary and tertiary activities are adopted by the farmers. Mainly, most people's income comes from domestic bird rearing, fish cultivation, rice production, livestock rearing, and salaried government and non-government jobs. Although the community people follow several diversified economic activities, they are not highly diversified due to several socio-environmental problems. Instead, the level of diversification is low. Some influential determinants of occupying diversified activities are age, education, family member, earning member, distance from home to the nearest town, social organisation, and government help. The frequency and intensity of natural disasters are one of the main constraints to adopting diversified activities. Besides, risk on a new job, poor road conditions, and limited access to the bank also act as barriers to carrying out diversified activities. The study suggests that both government and non-government organisations should help the climate-vulnerable communities cope with an increasing number of diversified activities in the coming days.

References

Loison, S.A.(2019).Household livelihood diversification and gender: Panel evidence from rural Kenya.Journal of Rural Studies, 69: p. 156-172.

Martin, S.M., &K. Lorenzen. (1998). Livelihood diversification in rural Laos.World Development, 2016. 83: p. 231-243.

Ellis, F.(1998). Household strategies and rural livelihood diversification.The Journal of Development Studies, 1998.35(1): p. 1-38.

Niehof, A.(2004). The significance of diversification for rural livelihood systems.Food Policy, 2004. 29(4): p. 321-338.

Pritchard, B., A. Rammohan., & M. Vicol. (2019). The importance of non-farm livelihoods for household food security and dietary diversity in rural Myanmar.Journal of Rural Studies, 2019. 67: p. 89-100.

Baird, T.D., & J. Hartter. (2017). Livelihood diversification, mobile phones and information diversity in Northern Tanzania.Land Use Policy, 2017. 67: p. 460-471.

Gautam, Y., & P. Andersen. (2016).Rural livelihood diversification and household well-being: Insights from Humla, Nepal.Journal of Rural Studies, 2016.44: p. 239-249.

Liu, Z., &J. Lan. (2015).The sloping land conversion program in China: Effect on the livelihood diversification of rural households.World Development, 2015. 70: p. 147-161.

Rahman, H.M.T., et al.(2018).Livelihood exposure to climatic stresses in the north-eastern floodplains of Bangladesh.Land Use Policy, 2018. 79: p. 199-214.

Aniah, P., M.K. Kaunza-Nu-Dem.,&J.A. Ayembilla.(2019). Smallholder farmers' livelihood adaptation to climate variability and ecological changes in the savanna agro-ecological zone of Ghana. (2019). Heliyon, 2019. 5(4): p. e01492.

Akhtar, S., et al. (2019). Maise production under risk: The simultaneous adoption of off-farm income diversification and agricultural credit to manage risk.Journal of Integrative Agriculture, 2019. 18(2): p. 460-470.

Tesfaye, Y., et al. (2011).Livelihood strategies and the role of forest income in participatory-managed forests of Dodola area in the bale highlands, southern Ethiopia. 2011.13(4): p. 258-265.

Ismail, N., et al.(2018). Livelihood Strategies after the 2004 Indian Ocean Tsunami in Banda Aceh, Indonesia.Procedia Engineering, 2018. 212: p. 551-558.

Corral, P., & N. Radchenko. (2017). What's So Spatial about Diversification in Nigeria?World Development, 2017. 95: p. 231-253.

Collins, J., A Rising Tide in Bangladesh: Livelihood adaptation to climate stress. Australian Geographer, 2014.45(3): p. 289-307.

Burchfield, E.K., & A.T.d.l. Poterie, Determinants of crop diversification in rice-dominated Sri Lankan agricultural systems. Journal of rural studies, 2018. 61: p. 206-215.

Bernier, Q., et al., Water management and livelihood choices in southwestern Bangladesh. Journal of rural studies, 2016. 45: p. 134-145.

Shameem, M.I.M., S. Momtaz., & R. Rauscher, Vulnerability of rural livelihoods to multiple stressors: A case study from the south-west coastal region of Bangladesh. Ocean Coastal Management, 2014. 102: p. 79-87.

Alam, G.M., Livelihood cycle and vulnerability of rural households to climate change and hazards in Bangladesh. Environmental management, 2017.59(5): p. 777-791.

Pouliotte, J., B. Smit., &L. Westerhoff, Adaptation and development: Livelihoods and climate change in Subarnabad, Bangladesh. Climate development, 2009.1(1): p. 31-46.

Fenton, A., J. Paavola., & A. Tallontire, The Role of Microfinance in Household Livelihood Adaptation in Satkhira District, Southwest Bangladesh. World Development, 2017.92: p. 192-202.

Banglapedia. Shyamnagar Upazila. 2015 September 2, 2019]; Available from: http://en.banglapedia.org/index.php?title=Shyamnagar_Upazila.

Rahman, M.T.U., et al., Assessment of freshwater security in coastal Bangladesh: An insight from salinity, community perception and adaptation. Ocean & Coastal Management, 2017. 137: p. 68-81.

Grant, S., C.C. Tamason., & P.K.M. Jensen, Climatization: A critical perspective of framing disasters as climate change events. Climate Risk Management, 2015. 10: p. 27-34.

Khatun, D., & B. Roy, Rural livelihood diversification in West Bengal: determinants and constraints. Agricultural Economics Research Review, 2012. 25(347-2016-16910): p. 115-124.

Woerheide, W., & D. Persson, An index of portfolio diversification. Financial Services Review, 1992. 2(2): p. 73-85.

Sharma, K.R., Measuring economic diversification in Hawaii. Research and Economic Analysis Division (READ), Department of Business, Economic Development and Tourism of Hawaii.[http://hawaii. gov/dbedt/info/economic/ data_reports/ EconDiversification/Economic_Diversification_Report_Final% 203-7-08 [1]. pdf], 2008.

Kassie, G.W., The Nexus between livelihood diversification and farmland management strategies in rural Ethiopia. Cogent Economics & Finance, 2017.5(1): p. 1275087.

Avila-Foucat, V.S., &K.J. Rodríguez-Robayo, Determinants of livelihood diversification: The case wildlife tourism in four coastal communities in Oaxaca, Mexico. Tourism Management, 2018. 69: p. 223-231.

Karmokar, S., A. Roy., &S.N. Ahmed, Economics of Agricultural Marketing in South-west Region of Bangladesh. IOSR Journal Of Humanities And Social Science (IOSR-JHSS), 2015. 20(8): p. 99-108.

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An Analysis of Noise Pollution Based on its Causes and Effects over Commercial Areas in Rajshahi City

Shad Hossain*
Rafia Anjum Rimi*
Addri Attoza*
Zahin Momtaz*
Mahir Alam*
Nazia Hossain**
Md. Sakib Zubayer**

Abstract

Noise pollution has become a significant concern with urbanisation in the Rajshahi City of Bangladesh. Like many other Metropolitan Cities, the Commercial activities of Rajshahi is flourishing rapidly all over the city. Herewith, this paper has been explained how noise pollution is closely related to commercial activities. Shaheb Bazar and Its Surrounding areas, the nucleus of the commercial activities, have been selected as study areas. This research aims to identify the leading cause of noise pollution and highlight the variation of sound effects in the specified areas. Data were collected using a questionnaire survey. The 'Stratified sampling' method was applied with a 90% confidence level and 10% margin of error. The collected data were analysed using graphs and charts with the help of Microsoft Excel. From the observation, it has been seen that almost 63% of vehicles cause

* Undergraduate Student, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology (RUET), Rajshahi.

** Assistant Professor, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi.

*** Lecturer, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi.

noise pollution most. Among them, Auto Rickshaws (27%) and Private Cars (17%) are the primary sources of noise pollution. During some particular times, especially at 5–8 pm (37%) and at 8–10 pm (41%), noise pollution exceeded the acceptable limit at almost all the locations. This paper will be a future possibility to conduct further studies on this field. Besides, it will help to find the strategies to reduce excessive noise and provide some techniques for improving the traffic system.

JEL Classification *Q53 · Q56 · O18*

Keywords *Noise Pollution · Urbanization · Industrialization · Metropolitan City · Stratified Sampling*

Background of the study

Noise pollution is the unacceptable level of sound that creates annoyance, mental hamper, headache, physical disorder, stress on the auditory and nervous system, and induces severe damage. As Rajshahi is one of the largest and divisional cities of Bangladesh, Noise pollution in Rajshahi is becoming more and more acute, and other pollution like air, water, and odour, waste. As a Metropolitan area, commercial and other activities is developing rapidly all over the city. With the increase of urbanisation, population, the number of industries, market place, crowdie recreational place and even vehicle movement in the city is increased causing noise pollution- closely related to commercial and other activities.

This research study determines the significant causes of noise pollution of Shaheb Bazar, the nucleus of the commercial activities of Rajshahi City, and also its surrounding areas to show the relationship between the commercial area and noise pollution. Then, every data under the noise pollution was analysed. The research is expected to deal with the commercial area's sound pollution and cover every highly noise-able area.

The survey area was not available to express the noise pollution mainly because we were picked only five locations for this research. On the other hand, our survey sample size was not too large. So, we cannot increase the sample size for the shortage of timing. Resources and workforce both were limited for this purpose. Health complexes and residential areas could not be joined because of the time restrictions.

Literature Review

Noise pollution displeases human, animal or machine-created sound that disrupts human or animal life (Wikipedia, 2010). According to the World Health Organization (WHO) statement, noise is considered the third most hazardous pollutant in large cities. Nearly 5% of the world population faces several kinds of health hazards due to the complexities related to noise pollution. Around 11.7% of the population in Bangladesh have already lost their hearing due to noise pollution, says the DoE study, which was conducted in 2017. According to the guidelines, exceeding the maximum noise level in a particular area is a punishable offence.

Table 1: Human tolerance for different noise levels

Noise Level	Maximum duration of exposure
75dB	Comfortable for human hearing
90dB	Two and half hours
100dB	15 minutes
110dB	30 seconds
120dB	9 seconds
140dB	1 second

Source:World Health Organization, (2002). *The World Health Report 2002: Reducing Risks, Promoting Healthy Life*, World Health Organization.

Microsoft Encarta (2007) defines environmental noise pollution as the exposure of people or animals to the level of sound that is annoying, stressful or damaging to the ears. In order to check noise pollution, the government has introduced Bangladesh with the Sound Pollution (Control) Rules, 2006. The WHO also declared that "Worldwide, noise-induced hearing impairment is the most prevalent, irreversible occupational hazard".It is estimated that 120 million people worldwide have disabling hearing difficulties. In 2002, the European Union adopted the Directive 2002/49/CE20[8] regarding the management and assessment of environmental noise to reduce and control sound pollution using a common approach and prevent or avoid the harmful effects of noise exposure. A

Table 2: Noise Levels in Major cities in Bangladesh

City	Highest	Lowest
Dhaka	132dB	47dB
Sylhet	131 dB	50dB
Khulna	132dB	42dB
Barishal	131dB	54dB
Rangpur	130dB	46dB
Rajshahi	133dB	56dB
Mymensingh	131dB	54dB
Chattogram	133dB	47dB

Source:Environmental Conservation Report (1997) *The Environment, Conservation Rules 1997*, Ministry of Environment and Forest, Govt. of the People's Republic of Bangladesh, Department of Environment, Bangladesh.

government survey shows that sound levels in every divisional city of Bangladesh have surpassed their permitted limits.

Conservation Rules 1997, Ministry of Environment and Forest, Govt. of the People's Republic of Bangladesh, Department of Environment, Bangladesh.

The major sources of noise pollution in urban areas are traffic and loud horns. Other causes of noise pollution include loud music during social, political, and religious programs, construction work, and factory noise.

US-based Center for Hearing and Communication (CHC) founded this yearly event in 1996, to be observed on the last Wednesday of April, to raise awareness about the harmful impact of noise pollution, both after short-term and long-term exposure and to encourage people to do something about bothersome noise where they work and live.

Table 3: Maximum noise levels in different areas

Areas	Maximum noise level
Residential zones	55dB at 6am-9pm; 45dB at 9am-6am
Hospital, education, institutions, place of worship	40-50dB
Public areas, i.e. markets, playgrounds, parks	60-70dB
Commercial or industrial areas	70-75dB

Source: Bangladesh Noise Pollution (Control) Rules, 2006

Methods and Materials

Exclusiveness of study area

Rajshahi metropolitan city is known as an educational city, mid-western city of Bangladesh. Three large, renowned public educational institutions and other schools and private universities. Vehicles and other commercial activities produce so much noise in the Shaheb Bazar area, one of the most commercial points of all necessary needs. That is why various points of Shaheb Bazar such as Alupotti, zero point, `Moni chattar, Shonadhigir mor, Batar mor are selected for the study area. This commercial zone has different commercial shops and services. Such as, Alupotti has various types of shops (Grocery, Bakery). Zero-point is highly populated and has many vehicles plying on the road, which creates intolerable noise. Moni chattar is crowded because of Kacha Bazar and one school and college also very close to this place. Shonadhigir mor road is connected with Moni chattar, and this road has many book shops, many photocopies and Photostat shop. Batar mor consists of the shoe shop, boutique shop, homoeopathy chamber. Thus it is clear that these points are so crowded with people for following activities. For this reason, the study is conducted to analyse these perspectives.

Rajshahi, nicknamed Silk City in Bangladesh and major urban, commercial & educational centre of North Bengal. The city is located on the north bank of Padma River, near the Bangladesh-India border. Rajshahi district was established in 1772. The total area of the district is 2,425.25 sq. km. The city has a population of over 763,952 people. It also has two satellites- Nowhata and Katakhali, which build an urban agglomeration of about 1 million people. Rajshahi city is bounded by Naogaon district on the north, west Bengal of India, the Padma and Kushtia district on the south, Natore district on the east and Chapainawabganj district on the west. The city consists of one city corporation, including four metropolitan thanas,30 wards,170 mahallahs and 9 Upazilas, 71 unions. The economy of the Rajshahi district is agriculture, but the urban area of this district has other economic activities, so the city is growing and getting populated day by day. The city is also assuring modern urban facilities to the people.

In the survey area, analysing the demographic condition, it is found that males were comparatively greater than females. As Shaheb Bazar is a commercial area, male people go there more for their occupation, but female people do not. 51% were male and 49% female.

Age range: Age group is also a part of the demographic survey as the analysis work for the effect of sound on the level of people, and different age group of people suffer from various effect. For proper analysis purposes, age was classified into five ranges: 10-18, 19-25, 26-30, 31-40, 40 - above. The age range is classified based on their work purpose at Shaheb Bazar area- it is seen that age between 10-18 year of people is year is 26%. 26-30 years is 17%, 31-40 years is 15%.40, or to above-aged people is 31%.

Occupation:Peoples occupation is also analysed in the demographic part. From the pie chart, it is seen that a significant number of people who go there are businessmen or students, people of other occupation are also observed at the area like a banker, hawker, service holder, salesman, teacher, shopkeeper. The people in business were 28%, the student was 26%, the shopkeeper was 4%, the teacher was 9%, salesman were 11%, bankers, hawker, retired, doctor, day labourer are significantly less in number like 2%, 4%, 4%, 4%, 2%. Respectively (see Table 4). people of all occupations go to Shaheb Bazar for various purposes as it is a city.

Existing road condition

Road condition means various factors that influence the overall experience of the people who use it and those who stay around the road. For the study, it is essential to analyse the impact of road conditions on noise pollution.

Table 4: Survey results

Indicator	Value (%)
1. Occupation	
Student	26
Retired	4
Banker	2
Teacher	9
Day labour	2
Business	28
Shopkeeper	4
Doctor	4
Hawker	4
Salesman	11
2. Status of human congestion	
Yes	69
No	31
3. Sources cause sound pollution most	
Vehicles	90
Speakers	6
Mike	2
Machine	1
Others	1
4. Types of vehicles that cause sound pollution most	
Car	5
Bus	11
Truck	4
Auto rickshaw	36
Easy bike	12
Laguna	14
Motorbike	18
5. Purpose of coming at Shaheb Bazar and its surrounding	
Shopping	48
Recreation	19
Ad Word	11
Others	22
6. Physical difficulties faced by people	
High BP	8
Deafness	10
Headache	45
Heart disease	4
Lack of concentration	10
Insomnia	10
Short temper	13

Source: Authors' survey, 2019

Road surface: Rahman and Hasnat's study (2018) showed that in Rajshahi, 13% of roads were in primary broken condition, 28% of roads were in intermediate broken condition, and 8% of roads were in the tertiary broken condition in every 10km road length. Nowadays this broken road condition is not improved every area.

Road width: At the particular area, most of the people provided that the width of the road is sufficient for the moving of transport. Almost 57% of people say "Yes". Besides, 43% of people say negative reviews about the sufficiency of the road and ramp. People said that Alupotti to Shaheb Bazar road width was sufficient for transport movement and other work. Most of the people provided that the width of the Alupotti to Shaheb Bazar road was sufficient, but Shonadhigir Mor and Batar Mor road were not sufficient for the moving of transport and other work.

Road intersection: In this study, every route has an intersection point. In this study, there have not no signal facilities in these intersection points. So, the sound level is higher in the intersection points and create noise pollution most. It may be possible to remove sound pollution in a small amount by providing good traffic rules, signals, and traffic police at the intersection point of the road.

Days of high sound level: we noticed that during the working day, the level of sound is very high. Because all types of Workshops, Market, Bazar, Schools are open in the working day. Different types of people are going to the Zero point, Alupotti, Shaheb Bazar area for different reasons by Auto rickshaw, easy bike, motorbike, car, leguna. So, these all journey's mediums were created a high sound level in the working day. On the other hand, during the weekend day, the level of sound was shallow. Because all types of workshop, Market, Bazar, School are not open in this day.

Time of high sound level: During some peak hours, the sound level was very high. Mainly 5–8 pm, the level of sound was as it is high level. However, we can see the same percentage of sound level at 10 am-2 pm, which is 12%. At 5–8 pm, the sound level was extremely high because every type of people came to the Shaheb Bazar, Alupotti, Moni chatter, Shonadighi Mor and Batar Mor for different types of work. At 2–5 pm, the level of sound was 13%.

Signal: We observed five major intersection points of Alupotti mor, Zero point, Moni Chattar, Shonadighir Mor and Batar mor. Almost all vehicles run here like Auto rickshaw, rickshaw, bus, truck, motorbike, car. Especially the number of Auto rickshaws gets too much in pick hours. However, the width of the road is only 20 feet with just two lanes. About 100 meters before the intersection point, there is a foot over the bridge for the passers-by, and there is a vital road divider made of hard iron. However, people want signal facilities too. Shonadighir mor and Batar mor create less traffic and sound. So people have mix mindset here about the signal post. So the overall estimation stands that 85% of people think signals are not efficient and only 15% are satisfied with the present condition.

Parking: Parking facilities are pretty good in some areas. However, most of the area has not well-decorated parking. On-street parking is the most attackable problem in Rajshahi city. It is the leading cause of traffic jams and traffic congestion.

Existing commercial activities

To analyse the influence of commercial activities on noise pollution of Shaheb Bazar, the existing commercial activities is critical as a complex variable. Rajshahi is called 'The City of Education'. Two major Universities, one public medical, National universities, private universities, schools, and colleges are the city's major features. So a big part of the population of Rajshahi City is covered with the students. Also, Rajshahi is a Metropolitan city. So the students are one of the main factors for business here. Apart from students oriented business, general commercial activities also run here fluently. Saheb Bazar and its surrounding area are mainly known for its commercial activities as it is the city's nucleus. Different types of commercial activities are run here by the people. Many types of shops, offices, banks, restaurants, residential hotels are the main features of this area. So, people are closely engaged with this activity in different ways. From the above chart, we observed that. In this particular area, a large number of people were working in the shop. Almost 51% of the population engaged with this activity. Besides, there were a good number of people works in various types of activities such as Restaurants (25%), Offices (14%), Banks (8%) as well as shops (2%).

Results and Discussions

Causes of noise pollution:To identify the leading causes of noise pollution, thestudy requires identifying the possible causes that affect the selected points.Road facilities and human congestion are some of the significant traits of the Shaheb Bazar area.

Noise pollution is closely related to road facilities and a well-organised transportation system. Road facilities indicate the road's width, the efficiency of signals, pedestrians' facilities, parking facilities, traffic control system, foot over bridge, impact of hawkers and street food court. These all are part of a sound transportation system. The intensity level of noise depends much on the transportation system and how the road facilities are designed. It has a profound impact on noise pollution. If this indicates that it cannot be adequately maintained, the traffic system collapses, and traffic congestion increases. So, the level of sound also increases with the increase in traffic congestion.

Human congestion also influences noise pollution. 69% of people think human congestion is one of the reasons for producing noises. However, 31% of people think human congestion is not a big deal and vehicles, mike and others create noise. Our study area is the core area of Rajshahi city, and many people gather there every day for a different purpose. So human congestion is widespread there.

According to the survey, 5-8 pm is when human congestion is too high because within this time people usually return from their office work and it is 47%. It becomes 27% when the time duration is 2-5 pm which is slightly lower. At 12–2 pm, the flow of humans is 13% as everyone has already engaged with their work at the office or other workplaces. At 10 am-12 pm, 8% of human flow within our survey area.

It is the time when people start for their respective from home. 8-10 am the time with of very early morning. So it is noticeable with the low human flow. Thus we can see gradually decreased human flow as time decreases.

Variation of sound

Sources:According to the people, different sources play a vital role in producing sound pollution. Among them, vehicles are the primary source of the noise. As our target area is full of different vehicles and these keep passing with numerous sounds, 93% think that vehicles pollute the sound most. On the other hand, 6% has said noise creates due to speaker.

In that area, different shops use speakers for different reasons and sometimes for no reason, which makes the sound polluted. Just 1% said mike. However, we have seen machine shops and other activities that may create noise, but according to those people, these things do not.

Vehicles: The people of Rajshahi are widely used auto-rickshaws for movement purposes. For this reason, a large number of Auto rickshaws (36%) cause sound pollution most by giving unbearable horns. Besides, many people are using Motor Bikes for their daily activity, and these also bears a great significance for sound pollution (18%). As Laguna is one of the cheapest transport, this has been widely used in Rajshahi City and also bears great importance for polluting sound (14%).

Besides, many buses (Specially University Buses) cross through the Shaheb Bazar area, also creating sound pollution (11%). At last, there are also trucks (4%) and cars (5%) who bear a great significance for sound pollution. Lack of proper parking facilities also bears a great significance for creating traffic congestion by providing proper traffic facilities, such as adequate traffic signal, traffic policies, and a temporary parking area. Among the five areas, zero point is the most congested and noisiest area.

Intensity: Most people face various types of problems on a large scale due to noise pollution. However, their knowledge about sound level standards, as we found, was low.The research also found that the people are unaware ofthe Noise Pollution (Regulation and Control)Rules, 2006 and very few have seen the implementation of this law.

Secondary data and literature review have determined the average intensity noise level (dB) of each study area as followings:

Table 5: Acceptable Noise level for different areas according to the Noise Pollution (Regulation and Control) Rules, 2006

Area	Daytime (6.00 am-9.00 pm)	Night (9.00 pm- 6.00 am)
Residential area	55 dB	45 dB
Quiet places	50 dB	40 dB
Mixed areas	60 dB	50 dB
Commercial areas	70 dB	60 dB
Industrial areas	75 dB	70 dB

Source: Secondary Data, Pronob Das, Zaikrul Haque, Akhter, 2017

Average noise intensity level (dB): (According to selected point)

Intensity (in respect of time):

The intensity in respect of time according to the selected area is given below:

Zero-point: The graph shows that during 8-10 am, 10-12 am, 12-2 pm, 2-5 pm and 5-9 pm, the intensity of noise level exceeds the acceptable limit. Among these, during 2-5 pm, the intensity is too much, and it is 115 d B.

Moni chattar: The graph shows that during 10-12 am, 12-2 pm, 25 pm and 5-9 pm, the noise level intensity exceeds the acceptable limit. Among these, during 2-5 pm, the intensity is too much, and it is 105 dB.

Alupotti:The graph shows that the noise level intensity exceeds the acceptable limit during 6-8 am, 8-10 am, 10-12 am. Among these, during 12-2 pm, 2-5 pm, 5-9 pm, the intensity is too much, and it is 115 dB.

Shonadighir mor:The graph shows that during 12-2 pm, 2-5 pm and 5-9 pm, the noise level intensity exceeds the acceptable limit. Among these, during 2-5 pm, the intensity is too much, and it is 90 dB.

Batar mor:The graph shows that during 6-8 am,8-10 am, 10-12 am, the intensity of noise level exceeds the acceptable limit. Among these 2-5 pm and 5-9 pm, the intensity is high at 98dB and 80 dB, respectively.

Purpose of coming to Shaheb Bazar:Shaheb Bazar and its surrounding is commercial area. There are various libraries, Stores, Groceries, Katcha Bazar, Market (RDA Market), pharmacy, Pastry Shop, and Hawkers shops. Most of the people are coming here for shopping purposes (48%).

Physical difficulties:Sound pollution causes various types of physical difficulties. People working or visiting the Shaheb Bazar and its surrounding areas are affected mainly by headaches (46%). Besides, those are working in these areas also affected by short temper (14%), lack of concentration (10%), as well as insomnia (10%). Most of them are below 40. the people who are above 40 are affected mostly. They are also affected by Deafness (10%), High BP (8%) as well as Heart Diseases (2%). Because of this difficulty, they cannot correctly concentrate on their work. It also causes an excellent hamper for their body as well as health. Besides, many people said that they were not affected by any types of difficulties as they were used to with these troubles. Most of them were middle-aged. By taking the proper necessary steps, we can reduce noise pollution and get rid of this problem.

Conclusion

The study has found some interesting findings. During the survey, it is found that the sound level is very high in the working day due to all types of workshops, market places, Bazar, school. As our study area is the CBD of Rajshahi city, people have to go there for different reasons, the leading cause of noise during working days. The road width is insufficient, according to the survey data. Available transport mode is an easy bike that has no particular stoppage.

For this reason, a considerable number of easy bikes and their wrong parking spaces create traffic jams in that area. Surprisingly, about 31% of people do not consider human congestion the main reason for noise pollution. The study has stated that at 5–8 pm, more humans congested our study area, which makes the sound polluted. Different types of physical difficulties are faced. Headache, insomnia, lack of concentration, heart diseases are some of them. There was no traffic signal or particular traffic role of vehicle transportation there.

The survey's primary recommendation is to widen the road, construct over bridge and speed breaker, provide perfect traffic signal, maintain the traffic rules strictly, provide proper parking facilities, and release hawkers from the footpath.

To conclude, we must take noise pollution very seriously. There are a lot of harmful effects of noise pollution on human health, and we must do all we can to help prevent, control, and manage noise pollution in our environment. We must employ various noise control techniques and do the best we can in stopping noise pollution. We can control noise pollution through proper urban planning and separating residential areas from industrial areas. We must protect our environment from noise pollution.

References

Haque, M. E., Islam, M.S., & Alam, M.M. (2017). Traffic Noise Levels at Different Locations in Rajshahi City. Undergraduate thesis, Department of Mechanical Engineering, RUET

Das, P., Haque, Z., & Akhter. (2017). Assessment of Sound Level at Different Locations of

Rajshahi City. Proceeding on International Conference on Mechanical, Industrial and Material Engineering, RUET, Rajshahi, Bangladesh

Islam, M.M., Islam, M.S., & Rahman, F.I. (2019). A Brief Study on Capacity Loss at Major

Rajshahi City Roads, Bangladesh. Proceeding on International Conference on Planning, Architecture and Civil Engineering, RUET, Bangladesh

The Roads Manage and Measurement System, Retrieved from http://www.rhd.gov.bd/RMMS, Accessed on 20.09.2019

Environmental Conservation Report. (1997). The Environment, Conservation Rules 1997, Ministry of Environment and Forest, Govt. of the People's Republic of Bangladesh, Department of Environment, Bangladesh.

World Health Organization. (2002). The World Health Report 2002: Reducing Risks, Promoting Healthy Life, World Health Organization.

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A Study on the Housing and Socio-economic Condition of the Bihari People in Seroil Colony, Rajshahi

Ragib Mahmood Shuvo*
Mosharraf Hossain**
Anutosh Das***
Md. Sakib Zubayer****

Abstract

A relatively large number of Pakistanis known as the Bihari community have been stranded in Bangladesh since its independence in 1971. The unresolved repatriation problem is a consequence of deliberate procrastination and political indecision for both the Bangladesh and Pakistan governments. The aim was to analyse and find out the housing and socio-economic condition and the other services provided to the Bihari people of Seroil Colony, commonly known as the Bihari Colony of Rajshahi. Quantitative surveying followed by snowball and simple random sampling method was used for collecting data, and the analysis and interpretation part was visually presented with graphs, bars, cross-tabulation using SPSS (Statistical Software for Social Science) software. The intensely lousy condition of the Bihari people was found with poor housing conditions, very scarce employment in promising sectors, the low combined income of the family, comparatively high illiteracy rate, less utilisation of the provided utility facilities in a healthy way and critical condition of relief

* Undergraduate Student, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi. E-mail: rmshuvo2507@gmail.com

** Undergraduate Student, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi.

*** Lecturer, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi.

**** Lecturer, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi. E-mail: sakibzubayer@gmail.com

services. Day by day, the situation is falling. A kind step to recover this so long unresolved problem would be so generous from the government. This initiative might include how to make their lives happier, much more comfortable and lively through education and awareness.

JEL Classification *I31 · O15 · O18 · R21*

Keywords *Bihari Community · Repatriation · Snowball Sampling · Simple Random Sampling*

1. Introduction

1.1 Background of the study

The word 'Bihari' usually means a person who lives in the state of Bihar in India. However, 'Bihari' means non-local Urdu-speaking person in Bangladesh. Usually, the people who came from the state of Bihar are called the 'Biahris'. The Biharis come from Bihar and Uttar Pradesh, Madhya Pradesh, Patna, Rajasthan and West Bengal. They stood together for the independence of India. Muslim Biharis lived scattered in villages and towns. They did not have enough skill and education, but they were happy to lead such a life. They were happy for their traditions and customs, cultures and myths. During the partition of India, these Muslims were fallen into the fault position. They became the victim of communal riots. Bihar was the primary target. Patna, Saran, Munghyer and Bhagalpur were also the worst sufferer of the communal riots (Illias, 2007).

From 1941 to 1946, every year, there were communal riots in Dhaka. By the end of 1942, the communal riots were spread throughout the villages. Many people were killed and injured during the riots of Calcutta in August 1946. These riots gave birth to killing Hindu families in East Bengal at Noakhali. As a result, about fifty thousand Muslim populations were killed in Bihar in 1946 (Illias, 2007).

In 1947 British India was partitioned into two independent nations of Pakistan and India. The partition had given the religious lines. Pakistan was designed as the new homeland for Muslims, and India was the land of Hindus. The partition of India in 1947 had given some massive population movement. The flow of this movement between India and Pakistan was one of the largest refugee's movements during that time (Rahman, 2003).

The riots of Calcutta and Bihar had made thousands of Muslims homeless and stateless. These Muslim refugees had moved to Chittagong, Khulna and Jashore. The last movement was in 1964-65. These riots had taken so many lives of Muslims. As a result, there was a massive migration of Muslims into East Pakistan. 1946-47 had made East and West Pakistan a new country called Pakistan. Muhammad Ali Jinnah said, "Bihar killing created Pakistan". Not only the communal riots but also social injustices had forced them to leave their homeland. The rapid growth of urbanisation and industrialisation in East Pakistan created new employment opportunities for skilled migrants. The business of Bengali Hindus, who went to India during the partition, was taken by the Biharis. Most of all, the immigrants were small traders, shopkeepers or labourers (Rahman, 2003).

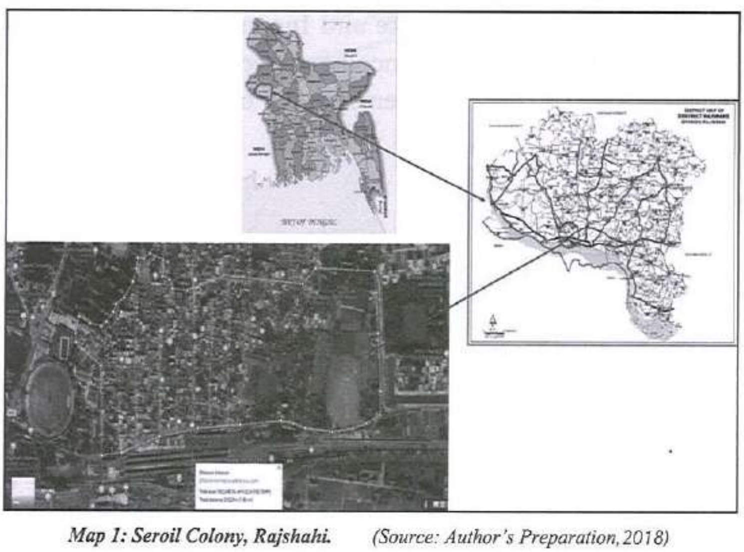
The Six-point movement did not address anything about the Biharis, and they went against the six-point formula. They started to think that if Pakistan divided, they would have to leave Pakistan and send it back to their home country. Therefore, they went against the independence of Bangladesh. They also had a strong urge to repatriate in West Pakistan. As a result, during the eve of 25 March 1971 West Pakistani army was assisted by the Bihari people to kill the Hindus. Some Biharis were also killed by the Bengali people in the other parts of East Bengal (Illias, 2007).

After the Pakistani armies were evacuated, the Biharis found themselves unwelcome in both countries. Since then, most of these Biharis have lived in refugee camps in Bangladesh, hoping to go back to Pakistan. In 116 different camps in Bangladesh, they live under vulnerable and intolerable conditions. As they are small and do not have any recognised organisation, they failed to establish their rights and voices. They cannot improve their living or health conditions as they do not have enough works or opportunities. They feel insecure and do not have the proper knowledge to improve themselves. Considering these, the objectives were set as:

- To find out the housing condition of the Bihari people in the study area.
- To evaluate their socio-economic condition.

1.2 Study Area

Figure 1: Income Distribution of the Study Area (Source: Field Survey, 2018)



Map 1: Seroil Colony, Rajshahi. *(Source: Author's Preparation, 2018)*

2. Methodology and Study Materials

This study involves a quantitative research method to collect information. A questionnaire survey was used to obtain information about the Bihari people. The study area is selected as the Seroil colony of Rajshahi. Since the Bihari people were facing communal violence, they started living in separate zones and Rajshahi, mostly living in the Seroil colony for years. So, their living condition, educational condition, and socio-economic condition can be brought into a clear idea by investigating this area, which leads to the aim of the study. A questionnaire survey method has been followed for collecting the data from the respondents. A coordination schema was primarily prepared by arranging the objectives, different variables and level of measurement. Snowball sampling and simple random sampling methods have been followed to obtain the required information.

3. Results and Discussions

3.1 Income Distribution

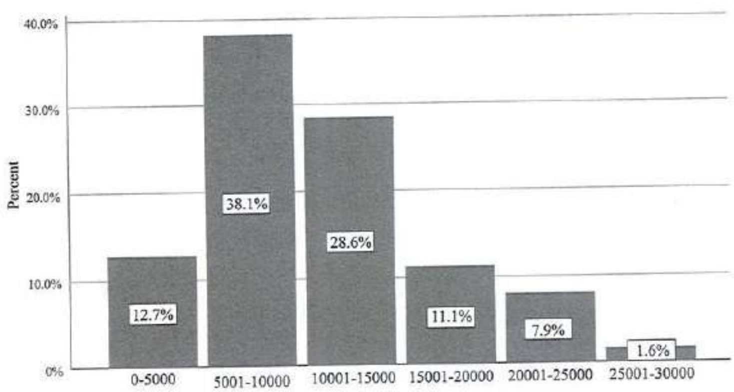
The incomes of the families of the Bihari people are divided into a few ranges, and the percentage of their income ranges are shown below:

The comparative study between the ownership of houses and the family income of the Bihari people can be visualised by the crosstab shown below:

From the above chart and table, it can be evaluated that a good number of families are below the poverty line, where approximately 91% of families have to stay in houses on rent. So, a small amount of money remains left for their survival, let alone educational facilities and others.

3.2 Relative Study on Literacy Rate and Income

The line is going higher with the income range increasing. That shows the relativity between income and the literacy rates of the family members of the



Bihari people. The income of the households is badly affecting the education quality of the people in the study area.

Table 1: Relative study between ownership of houses and family income

Ownership of house * Family Income Cross tabulation

			Family Income						
			0-5000	5001-10000	10001-15000	15001-20000	20001-25000	25001-30000	Total
Ownership of house	Own	% of Total	0.0%	0.0%	1.6%	1.6%	4.8%	1.6%	9.5%
	Rent	% of Total	12.7%	38.1%	27.0%	9.5%	3.2%	0.0%	90.5%
Total		% of Total	12.7%	38.1%	28.6%	11.1%	7.9%	1.6%	100.0%

Source: Field survey, 2018

3.3 Study on the occupation of the Bihari people

After all the discussions did above, a clear conception about their occupation can be predicted. The pie-chart showing the percentage of people employed in different occupations might match with the predicted ones completely. From the survey, it was found that very few people are serving occupations like government services or any jobs that provide a big deal of salary. Most of them are rendering services like barber, auto/rickshaw driver or maid which will not provide good ways of living.

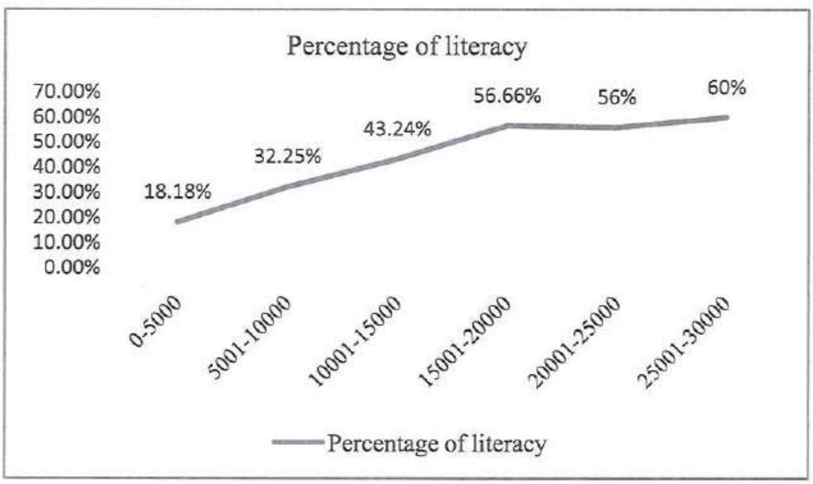


Figure 2: Relative study of Income and literacy rate of Bihari people

(Source: Field Survey, 2018)

Table 2: Percentage of people taking micro-credit

Occupation	Loan taken	Loan not taken	Percentage of loan taking
Government service	1	1	50%
Barber	0	4	0%
Maid	2	10	16.66%
Business	7	5	58.88%
Manufacturing industries	5	2	71.42%
Auto/Rickshaw	7	2	77.78%

Source: Field survey, 2018.

3.4 Relative study on occupation and loan of the Bihari people

Most families who take loans serve their occupational status as businessmen or auto/rickshaw drivers. Besides, a good percentage of families taking loans whose heads of the families are workers of manufacturing industries. People who are businessmen or auto/rickshaw drivers are taking loans for starting their occupation mainly, but for people who are workers in manufacturing industries, they mostly take loans for the marriage of their children or any accidental purpose. Other than these, the left small amount of families mainly takes loans for accidental purpose.

Table 3: House ownership

Ownership of houses	
Type	Per cent
Katcha	6.3
Semi-Pucca	68.3
Pucca	25.4
Total	100.0

Source: Field Survey, 2018

3.5 Housing Condition and Provision of utility facilities in the Study Area

There can be facts that the families are staying in houses with poor conditions. If it can be related to the total income of the family, it may give a clear picture:

Despite having a much better range of income, they are residing in semi-Pucca houses or poorer conditions. The reason behind thisis that they are not aware of the social status they are obtaining or healthy living conditions. These factors are leading them to reside as they were. Due to these, unhealthy conditions are still prevailing in their houses though they are capable of living in better conditions. Besides, a good percentage of people are still illiterate, which is shown above for which they are not aware of living in a better condition.

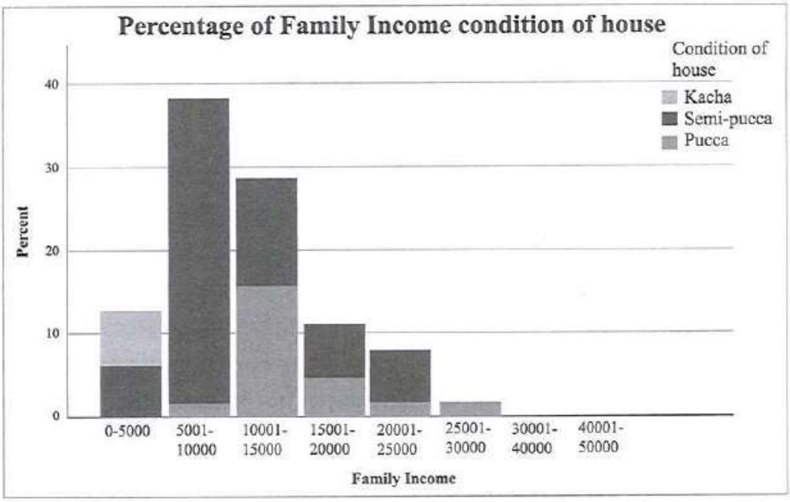
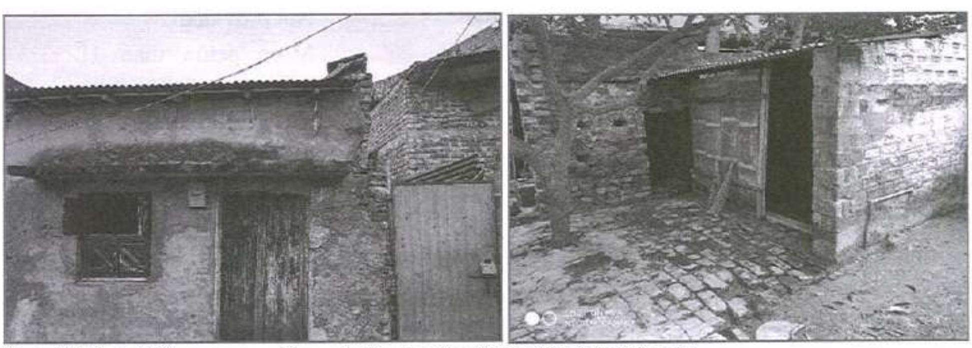


Figure 3: Relation between family income and condition of houses
(Source: Field Survey, 2018)

The government mainly provides other utility services like gas, Garbage disposal, and water supply in that region, but people living in poor conditions ar e not aware of what it needs to be healthy. So, sometimes well-served facilities become a threat to them due to not having adequate knowledge about them, and not everyone can afford to receive good medical service. The government medical centre of that region can provide a humble service, but since the people who can afford to take any type of medical service prefer not to visit the government medical centre, these are not still that satisfactory as these should be.



(Source: Field Survey, 2018) *Figure 4: Housing Condition of the Bihari People*

Apart from all these, if we talk about the utility facilities provided to the Bihari people of the Seroil colony, the situation is quite considerable and predictable. The facilities like supply water, supply gas, and garbage disposal are provided to ensure adequate quality service. However, they are lagging like income and education, which are the primary and essential facts that teach people about the healthy condition of life and awareness about living standards. Because of these, they are still leading unhealthy lives and making their living condition worse.

Now, talking about the health conditions of living, there comes the issue of the medical services of the people of the study area. Most of the families get medical services from the government medical centres, and few of the families who can afford the expenses go to other clinics or private medical hospitals. The services provided by the government medical centres are pretty frustrating from the point of view of the residents of the study area. The sanitation condition of the Bihari people is still in poor condition because of not being capable of developing their living standards and unawareness about healthy living measures.

3.6 Provision of Subsidies in the Study Area

Apart from all these, there was relief or subsidies service for the Bihari people from Saudi Arabia. However, with the clock ticking and years changing, these services are being demoralised day by day. The table below shows the information collected from the inhabitants:

Table 4: Degradation of providing subsidies to Bihari people overtime period

Commodity	Quantity(1981-1990)	Quantity(2001-2010)
Rice	3 KG/Person	Not Provided
Wheat	9 KG/Person	2-3 KG/Family
Camel's meat	1 KG/Family of 4 persons	200-300 gm./Family
Date	2-3 KG/Family	Not provided
Milk	1L/Children	More petite than 1L for each family

Source: Field survey, 2018

So, overtime period, the reliefs which had been given are now vanishing. Families that barely earn TK.5000 could easily rely on these to survive and could utilise their earnings in sectors that might keep them better than they are today. Maybe many children could go to school other than taking over their parents' works. These factors are taking them behind from what they deserve to live like.

4. Conclusion

The study had the aim to assess the housing and socio-economic condition of the Bihari people of Seroil colony in Rajshahi. It can be observed from the data analysis and interpretation in the previous chapter, most of the Bihari people are still living below the poverty lines. They have a poor condition of houses and sanitation, but there are arguments within this because it is observed that despite the increase of the family income, they are still not aware of living in a healthy environment where the lack of education comes and they are indeed among the illiterate ones. Instead of providing education, they are tending towards extending their income ranges. For this, they are still lacking behind. The utility facilities like gas, water, garbage disposal etc., provided to them are considerable but still, where survival is adverse, questioning about quality of life is out of the world. Besides, subsidies are given to these people from Saudi Arabia. These are almost diminished at present. Day by day, the people are becoming helpless, which is a matter of great sorrow.

References

Afroz, S. (2013). Stateless Diaspora: A Sociological Study on Biharis in Bangladesh.

Anonymous, (2012). Bangladesh: ICRC honoured for helping victims of 1971 conflict, URL: http://www.icrc.org/eng/resources/documents/feature/2012/bangladesh-feature-2012-04-19.htm, accessed on 5 May 2018.

Bashar, I. (2006). Unresolved Statelessness: The Case of Biharis in Bangladesh, Journal of International Affairs, 10(1 and 2).

Ilias, A. (2007). Biharis: The Indian Emigres in Bangladesh. Saidpur, Bangladesh. Shamsul Haque Foundation, Dhaka.

Mantoo, S. A. (2013). Bihari refugees stranded in Bangladesh since 1971, URL: http://www.escijournals.net/JSAS/article/download/246/208, accessed on 16 February 2018.

Nabi, M. U. (2006). Socio-economic Problems of the Urdu Speaking Residents at Mohammadpur, URL:http://www.dwatchbd.org/ggtp/Research%20Reports/research3.pdf, accessed on 16 February 2018.

Pokrovskii, Vladimir N. (2011), Econodynamics. The Theory of Social Production, Springer, Berlin.

Rahman, M. (2003) "A Community in Transition: The Biharis in Bangladesh" Empowerment through Law of Common People (ELCOP), Dhaka.

Sholder, H. (2011) "The Camp-Dwelling Urdu-Speaking Community in Bangladesh", Refugee and Migratory Movements Research Unit (RMMRU), Dhaka.

Tillott, H. (2016) "Anti-Bihari sentiment in Bangladesh", URL: https://www.wilsoncenter.org/sites/default/files/Bangladesh_In_Turmoil-Riaz_Congressional_Testimony.pdf, accessed on 16 February 2018.

Wright, G. (1983) Building the Dream: A Social History of Housing in America, MIT Press, USA.

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Strategic Importance of Chittagong in the Context of Belt and Road Initiative: Analysis of Contemporary Thoughts

Ataul Karim Chowdhury*

Prelude

The Belt and Road Initiative (BRI) or the Silk Road Economic Belt and the 21st-century Maritime Silk Road is a development strategy proposed by the Chinese government which focuses on connectivity and cooperation between Eurasian countries, primarily the People's Republic of China (PRC), the land-based Silk Road Economic Belt (SREB) and the ocean-going Maritime Silk Road (MSR).

The Chinese government calls the initiative "a bid to enhance regional connectivity and embrace a brighter future".[3] Others see China's push to take a more prominent role in global affairs with a China-centered trading network. Ref; Wikipedia

The Belt and Road Initiative addresses an "infrastructure gap" and thus can accelerate economic growth across the Asia Pacific area and Central and Eastern Europe.

The Belt and Road Initiative is geographically structured along several land corridors and the maritime silk road.]infrastructure corridors encompass around 60 countries, primarily in Asia and Europe and including Oceania and East Africa. The initiative calls for integrating the region into a cohesive economic area through building infrastructure, increasing cultural exchanges, and broadening trade.

JEL Classification *F21 · F15 · F36 ·O19*

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* Overseas Fellow, Economic Development Institute, the World Bank, & Executive Director, Continental Group of Companies. E-mail: karim_polaris@yahoo.com

Maritime Silk Road

The Maritime Silk Road, also known as the "21st Century Maritime Silk Road", is a complementary initiative aimed at investing and fostering collaboration in Southeast Asia, Oceania, and North Africa, through several contiguous bodies of water: the South China Sea, the South Pacific Ocean, and the wider Indian Ocean area.

The land corridors include:[15]

- The New Eurasian Land Bridge runs from Western China to Western Russia through Kazakhstan and includes the Silk Road Railway through China's Xinjiang Autonomous Region, Kazakhstan, Russia, Belarus, Poland and Germany.
- The China–Mongolia–Russia Corridor will run from Northern China to the Russian Far East. The Russian government established the Russian Direct Investment Fund and China Investment Corporation, a Chinese government investment agency, partnered in 2012 to create the Sino-Russian Investment Fund, which concentrates on opportunities in bilateral integration.[21][22]
- The China-Central Asia–West Asia Corridor will run from Western China to Turkey.
- The China–Indochina Peninsula Corridor will run from Southern China to Singapore.
- The Bangladesh-China-India-Myanmar (BCIM) Economic Corridor runs from southern China to Myanmar and is officially classified as "closely related to the Belt and Road Initiative".[23]
- The China–Pakistan Economic Corridor (Chinese:; also known by the acronymCPEC), also classified as "closely related to the Belt and Road Initiative,"[23] which is a US$62 billion collection of infrastructure projects throughout Pakistan [24][25][26] that aims to rapidly modernize Pakistan's transportation networks, energy infrastructure, and economy. November 13, 2016, CPEC became partly operational when Chinese cargo was transported overland to Gwadar Port for onward maritime shipment to Africa and West Asia.

An opportunity for Bangladesh officially became part of OBOR in 2016 after a visit by Chinese President Xi Jinping when the two countries signed several deals worth $21.5 billion. However, some reports say that all these deals are still on paper only due to bureaucratic complexities. Nevertheless, Bangladesh is part of the proposed Bangladesh-China-India-Myanmar corridor (BCIM), one of the six corridors of OBOR.

China plans to invest up to $4tn in OBOR-related projects in the next couple of decades. With proper policy coordination, Bangladesh can attract a large chunk of that investmentChina has already shown interest in developing a deep seaport in Bangladesh under the 21st century maritime Silk Road initiative. Memoranda of Understanding (MOU) have also been signed with China to build several components of the Pyra deep seaport.

Geographically, Bangladesh can be a connecting corridor between semi-industrialized ASEAN countries and the highly populated Indian sub-continent. It is strategically located between South Asia and South-East Asia, making it a crucial player in trans-regional integration. Bangladesh has the potential to leverage its geographical advantage through this initiative. China plans to invest up to $4tn in OBOR-related projects in the next couple of decades. With proper policy coordination, Bangladesh can attract a large chunk of that investment. The Chinese economy is transforming on a fundamental level. The country is moving away from low-tech industries to high-tech ones. Beijing is seeking to export its surplus industrial capacity abroad for the smooth transition into a developed economy. As such, China is looking for cheap labour and highly productive economies for long-term investment. A large population, coupled with our advantageous geographical position, thus makes Bangladesh a perfect candidate for that.

BCIM Economic Corridor

The Bangladesh, China, India and Myanmar Economic Corridor is conceptualized for significant gains through sub-regional economic cooperation within the BCIM. The multimodal corridor will be the first expressway between India and China and pass through Myanmar and Bangladesh.[3][4]

These advantages are envisaged to accrue from greater market access for goods, services and energy, elimination of non-tariff barriers, better trade facilitation, investment in infrastructure development, joint exploration and development of mineral, water, and other natural resources, development of value and supply chains based on comparative advantages, by translating comparative advantages into competitive advantages, and through closer people to people contact.[5]

The proposed corridor will cover 1.65 million square kilometres, encompassing an estimated 440 million people in China's Yunnan province, Bangladesh, Myanmar, and West Bengal in Eastern India through the combination of road, rail, water and air linkages in the region. This interconnectedness would facilitate the cross-border flow of people and goods, minimize overland trade obstacles, ensure greater market access and increase multilateral trade.

Benefits of the corridor

The economic advantages of the BCIM trade corridor are considerable, most notably: access to numerous markets in Southeast Asia, improvement of transportation infrastructure and creation of industrial zones.[7][10]

The construction of industrial zones will have a twofold benefit. Firstly, it will lead to industrial transfer boosting industries such as processing, manufacturing and commerce logistics. Secondly, as labour costs rise in China, labour-intensive industries such as textile and agro-processing will eventually be shifted out of China. These industries will need to be transferred to new regions with lower labour costs. Companies operating in China will likely give priority to the trade corridor region given its established infrastructure, improved logistics and ease of access[7][10]

India's isolated eastern and north-eastern states also stand to gain higher trade and connectivity with China and the rest of Asia.

Cooperation

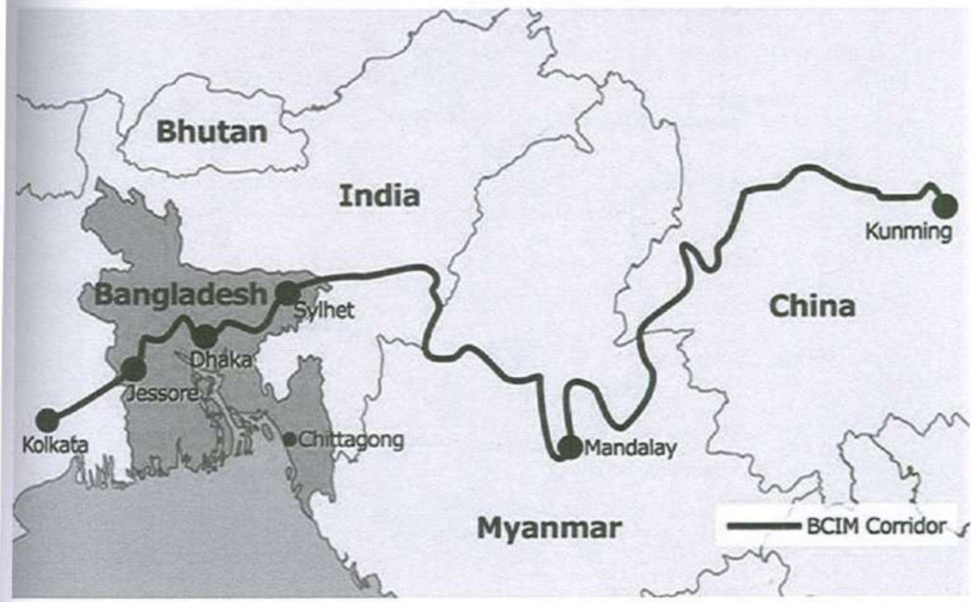
By linking the ASEAN Free Trade Area, ASEAN-China Free Trade Area and the ASEAN-India Free Trade Area, the corridor would constitute one of the largest free trade areas. Bangladesh, China, India and Myanmar hope to create a corridor that effectively combines road, rail, water and air linkages in the region. It will also improve foreign trade of the BCIM countries and empower bilateral trading]

Bangladesh needs a deep seaport. The country has one of the world's fastest growing economies, which is expected to rise at a 7.1 per cent clip this year. It is on Goldman Sachs's list of the "Next 11" emerging economic powerhouses of the 21st century. On the strength of the world's second-most dynamic textile industry, Bangladesh's export sector is booming and is expected to eclipse $50 billion per year in value by 2021. It is all in a country without adequate maritime infrastructure.

In its 45-year history as an independent state, Bangladesh has never built a new port. While $60 billion of annual trade currently pours through the country's two existing seaports, Chittagong and Mongla, both are too shallow for large container ships and require costly load transfers to smaller vessels to get the cargo in and out — an added step that can cost an additional $15,000 per day and severely decreases the ports' global competitiveness.

However, finding solutions to this problem has proven problematic for Bangladesh. However, this is not because of a lack of options, a deficit of investors, or even a dearth of international support, but precisely the opposite: too many influential players are pushing for too many contending plans. It has left Bangladesh geopolitically stalemated, making and breaking deals, going with one project and then changing position and going with another. Ultimately, this

Route of the BCIM Economic Corridor



plethora of options has pitted China, Japan, and India in direct competition with each other to build Bangladesh's first deep seaport.

The Asian Century has begun with the conjunction of the two growth poles of Asia – the East and South Asia through the Bangladesh-China-India-Myanmar Economic Corridor Initiative (BCIM-EC). China and India are the world's second and third largest economies in Purchasing Power Parity terms. Bangladesh and Myanmar, endowed with rich natural and human resources, stand to benefit from harnessing the untapped potential of enhanced connectivity with their two giant neighbours. The economic corridor could enable the four countries to realize accelerated economic growth.

By developing connectivity with China, India, and Myanmar by roads, rail and other ways, Bangladesh can transform itself into an industrial nexus and commercial hub linking up South and Southeast Asia. It can be done by constructing the multimodal Southern Silk Road in the form of shorter and cheaper routes linking India and China through Bangladesh. The China Communications Construction Company Ltd (CCCC) has proposed to build the Bangladesh portion of the silk route that would pass through Dhaka and Chittagong. Indo-Bangladesh connectivity could be strengthened through a rail link between Akhaura and Agartala, providing a direct railway route between Bangladesh and the North-Eastern States of India, thus generating almost 50

percent savings in travel. Road connectivity between Kolkata and the North-East Indian states would cut the distance by half. It would be a win-win situation for both the countries since India would gain from savings in transport cost and travel time, and Bangladesh could tap a new source of earning foreign exchange in transit fees for cargoes and containers. Inadequate port facilities in Bangladesh hamstring maritime transport.

The BCIM-EC initiative is unfolding when China is transitioning from an inward-looking nation to a more strategically active member of the international community playing a fundamental role in shaping the pattern of development in the Asia-Pacific. In recent years, China has expressed serious interest in providing financial and technical assistance to Bangladesh over several significant initiatives, including the deep sea port, the rail bridge over Jamuna River, Dhaka-Cumilla train lines, and a multi-lane tunnel undersea tunnel Karnaphuli River. The Government of Bangladesh has adopted the plan to establish an economic zone for Chinese investors.

The establishment of a deep seaport (DSP) has become strategically critical for Bangladesh considering its potential impact on its accelerated development and economic growth. In this respect, the proposal to construct a deep-sea port at Sonadia deserves special attention. Such a port will allow the country to reap the benefit of connectivity that China's One Belt, One Road (OBOR) initiative offers.

The economic history of maritime powers, such as Britain, Spain, Portugal, China, Japan, Singapore, and Rotterdam, clearly demonstrates the significant and critical role of deep sea ports in developing their economies.

The Existing Port Facilities

Chittagong Port: Built-in 1887 near the Karnaphuli River, 16 Km upstream of the Bay of Bengal, Chittagong Port (CP) is an integral part of the sub-regional transport and logistics chain. CP plays a pivotal role in achieving sustainable economic growth through facilitating international trade.

In 2016, Chittagong Port handled 2.346 million twenty-foot equivalent units (TEUs) of containers with 51.38 million tons (MT) of cargo, and in 2015, there were 2.024 million TEUs of containers having more than 50 million tons of cargo. It is apprehended that there will be a three-fold rise in container traffic in the next 15 years. The average size of container vessels serving the Chittagong port is 2500 TEUs to 3000 TEUs having a draft of 9.1 meters (more modernized seaports are found handling container vessels of 5000-18,000 TEUs). The expected figures are 2.7 million TEUs in 2020 and 5.4 million TEUs in 2040. This rapid growth of international trade would necessitate the establishment of a deep sea port at a suitable location in the Bay of Bengal to handle high-draft larger vessels for transportation of goods directly to different countries.

Bay Terminal:It has been envisaged to construct a 'Bay Terminal' at Patenga coast on 900 acres of land behind the Chittagong Export Processing Zone (CEPZ).

It would allow big ships, which are longer than 190 meters and have a draft of more than 9.5 meters, to berth and carry out other activities. Mother vessels with up to 5000 TEUs will be able to anchor there.

Mongla Port: It is situated about 69 nautical miles from the Pashur river mouth. The maximum permissible draft of the vessels that can enter the port jetties varies between 7.0m and 8.5m depending on the tide and weather conditions, and there is a length restriction of up to 225m. This port also cannot handle larger container vessels.

The deep-draft vessels cannot enter into the Chittagong Port and the Mongla Port and are lighter at the outer anchorage in the Bay that causing higher freight rates and low productivity of our sea-borne trade. Hence, it is essential to establish a deep seaport for handling vessels with deeper draft and longer length to reduce freight cost and discharge time.

Moreover, in the absence of an appropriate deep seaport and the inaccessibility of large vessels to either Chittagong or Mongla port, all exports and imports are carried out through transhipment from the Singapore port, incurring high transportation costs delayed shipment.

Matarbari Port: Construction of a deep seaport, terminal for liquefied natural gas (LNG), four 600MW coal-fed power plants, along with communication networks such as rail lines and roadways, is underway at Matarbari, about 25 Km from the Sonadia island. The daily coal requirement will be over 60,000 tonnes and should be imported by 'Handymax' or 'Supramax'-sized vessels drawing 12-15 meters' draft.

Initiatives of India and Myanmar

Sittwe Port, Myanmar: The Sittwe port in Rakhine Province of Myanmar can presently handle vessels of up to 2,000-3,000 tonnes of deadweight tonnage (DWT). The port will be further developed to handle vessels up to 4,000-6,000 tonnes dwt which are considered coastal vessels with minimal capability and cannot be deployed in worldwide international trade.

The Indian government agreed with Myanmar to implementthe KaladanMulti-Modal Transit Transport Project, which envisages linking Lawngtlai in India's north-eastern state of Mizoram via a road and the River Kaladan to the deep seaport at Sittwe. Thus, international trade of India's seven landlocked states still has to be carried out through Kolkata port by traversing over 800 extra kilometres (539km sea + 225km river + 62km road) of extra distance.

However, if and when established, the distance from landlocked states of India to the proposed deep sea port in Sonadia will be less than one-quarter of the distance to Kolkata and will always remain as the first economic option for their international trade.

Kyaukphyu Port: Myanmar agreed with China to build a deep seaport and a special economic zone at Kyaukphyu, western coastal Rakhine state, 100 Km south of Sittwe port, and a railway network between Yunnan-Kyaukphyu to facilitate transit trade through the country. However,due to public resistance, this project is yet to be implemented. China has already implemented an oil pipeline project between Kyaukphyu and Yunnan province of China. About 450,000 barrels of crude oil will be sent to China per year.

A deep seaport in Kyaukphyu may serve as an alternative port to overcome the limitations of the Yangon port of Myanmar but can hardly affect the geographical advantage of the deep-sea port at Sonadia.

Dawei Deep Sea Port: The governments of Myanmar and Thailand signed an agreement to develop another deep seaport in Dawei and a connecting road and rail link to Bangkok as well as an oil and gas pipeline from the Gulf of Martaban to the Myanmar/ Thailand border. These two deep seaports will have minimal effect on the proposed deep-sea port at Sonadia.

Deep seaport near Kolkata port: Both Kolkata and Haldia ports suffer from chronic siltation of the Hooghly river. To resolve this problem, India plans to develop a deep seaport, 145 kilometres south of Kolkata city, reclaiming land from the sea, to handle large-sized container vessels.

Port at Diamond Harbour: Another port at Diamond Harbour, located at the eastern bank of Hooghly River between Kolkata and Haldia, is under study. Due to the low draft of the river, this port will have limitations as a hub port for serving the landlocked states of India, Nepal, China and Myanmar.

Opportunities for Bangladesh: The above-mentioned ongoing initiatives and activities demonstrated that the region's present and proposed port developments will not significantly affect the proposed deep-sea port at Sonadia in Bangladesh.

A narrow, deep strip of the bay with a natural depth of 14m has protruded close to the Sonadia Island (nine square miles), south-east of Bangladesh. It is the deepest point of the Bay to approach land.Moreover, the topographical condition of the sea bottom area has been stable for more than 100 years and is hydraulically balanced. The area may be considered as a gift of nature to Bangladesh. Utilizing this rare opportunity, Bangladesh should construct a deep seaport in the area for deep-draft larger vessels. It would serve our present and future need for international trade and facilitate access of our neighbours to the sea.

The strategic location of Bangladesh, facing the Bay of Bengal and the Indian Ocean, has created opportunities for it to serve the cause of sea-borne trade of the entire region to its north, north-east and north-west, which includes seven north-eastern states of India, Kunming city in China, and Chin and Rakhine states of Myanmar. The proposed Sonadia deep sea port may act as a gateway of this region to the sea. How soon will the project be finalized and its construction begin?

Chittagong

Chittagong positioned a little way up the Karnaphuli River on the northeast curve of the Bay of Bengal has always been the largest and most important seaport in Bangladesh. Once a central hub on the ancient Maritime Silk Road, Chittagong's history stretches back to the fourth century B.C. Ptolemy, the Chinese traveller-monk Faxian, and Ibn Battuta all wrote about the place. Today, this position of relevance still rings true.

"We handle 98 percent of the country's container cargo, 92 percent of the total cargo volume," a port development administrator explained. "So you can imagine how important this port is to Bangladesh. If Chittagong port collapsed, the whole economy would collapse."

Ninety-two percent of Bangladesh's total ocean freight equates to over 30 million tons of bulk cargo and more than 1.8 million TEUs (twenty-foot equivalent units) each year. Furthermore, these numbers are rising fast. Cargo volume through Chittagong port is rising at a 14 to 15 percent clip annually, and at the present growth rate,it is estimated that the port would top out by 2018.

The problem with Chittagong is that the current maximum draft of the port is just 9.2 meters — definitely not deep enough for many modern container ships. It requires a time-consuming and costly transfer operation, as smaller ships must be used to transport cargo to and from giant ocean freighters that are anchored out in the Bay.

One proposal to remedy this problem is constructing a new port on a 1,200-acre island in the Bay of Bengal off the coast of Patenga and in proximity to Chittagong. Dubbed the Bay Terminal, this would not technically be a deep seaport–as its maximum draft would be up to 13 or 14 meters, rather than the 15 needed to be granted this designation–but it would allow for larger ships to come directly into the port.

As early as 2010, China was publicly invited to get on board with expanding and modernizing Chittagong port, and at one point, the country pledged $9 billion toward the endeavour.

This plan bodes well for China's broader ambitions of building an overland corridor from Yunnan province to a port on the Bay of Bengal. The plan would essentially provide China with a link to the sea that, aside from transiting Myanmar, could bypass Southeast Asia and the snake pit of potentially volatile interests there. It prompted international commentators to quickly brand the Chittagong deep sea port proposal as one of China's "pearls," which put Bangladesh in a rather precarious geopolitical position. So much so that in June 2015,Bangladesh permitted Indian cargo ships to use Chittagong port.

Sonadia

Realizing that Chittagong may fall through, China had a contingency plan for another deep seaport in Bangladesh, all cued up and ready to go. A few years following a 2009 Japanese survey in Sonadia, an island near Cox's Bazar in the south of the country, which determined it a suitable location for a deep-draft port, China jumped in and offered its financial assistance.

It was widely assumed that political pressure was put on Bangladesh from India and the United States to disallow China to build and operate the Sonadia port. With China already building ports in Sri Lanka, Pakistan, the Maldives, and Myanmar, Bangladesh was the last remaining link on a chain to leave India surrounded.

After a period of being quiet about the prospective port, in February of 2016, Bangladesh made the formal announcement that it had been scrapped.

"The cancellation of Sonadia is a strategic decision by Bangladesh, doubtlessly helped along by India, Japan and the U.S.," wrote Indrani Bagchi in an article in the Times of India.

Matarbari

Another reason for the potential cancellation of the Sonadia port was that Bangladesh had granted a contract to Japan to build a deep seaport at Matarbari, just 25 kilometres away.

Japan International Cooperation Agency (JICA) is to build the port along with a liquefied natural gas terminal, a series of four 600 MW coal-fed power plants, rail lines, roadways, and electrical systems as part of a substantial infrastructural package deal. The master plan is that the port would be used to receive coal, which could power an entirely new industrial zone in the far south-east of the country.

To make this happen, JICA offered a loan to take care of \$3.7 billion out of the total \$4.6 billion price tag, at 0.1 percent interest for 30 years and a ten year grace period thrown in on top of that, according to theSouth China Morning Post.

Payra

Initially seeming like a condolence prize for China, which had been beaten out for a deep seaport in the south by Japan, Bangladesh proposed a deep-sea port at Payra, which is located on the north-western coast of the Bay of Bengal.

The construction of this port, which was being financed on a public-private partnership (PPP) platform, has initially been granted to a Chinese company, and it was starting to look like China was finally going to get its deep seaport in Bangladesh. Then the usual chorus of India, Japan, and the United States resounded once again.

However, as a change of pace, India stepped in and stated that they wanted to get in on the action and be one of the port's big investors. It was a very different strategy than simply trying to prevent China from having their port while offering no other viable alternative, which had previously been the diplomatic model.

The Payra deep seaport was then reconfigured as a cooperative port in which many different countries could invest and operate terminals. It has been reported that Indian companies are now participating, and ten countries have considered jumping in with $15.5 billion of investment, which is felt to be very different from China having a port in Bangladesh all to themselves.

Conclusion

"India drives Bangladesh politics, and the U.S. to some extent". "Bangladesh cannot move ahead with China in terms of big collaborations, in terms of making the Silk Route or One Belt, One Road or an economic corridor."

Like many other countries along the Belt and Road, Bangladesh wants to leverage its keystone position between major global powers and be "a friend to everyone."However, at this junction, the country finds itself in very turbulent waters as the great game of geopolitics exerts its influence on every horizon.

References

Kazi Ahmed Arif Fuad, Light Castle Partner, One Belt One Road initiative (OBOR): How Bangladesh can benefit through the new horizon of Regional Cooperation.

The Rise of OBOR, Sayed Masum Hasim, Daily Star Oct11'2017

Journal of Economics and Sustainable Development Bangladesh, China-India-Myanmar (BCIM) Economic corridor in the context of the "Belt & Road Initiative" by Saleh Mohammad Shahriar, Lu Qiian. Northwest A F University, Yangling, Shaanxi, PRC

Connectivity Opportunity for Bangladesh ICC Bangladesh/ www.iccbangladesh. org.bd/publication 1501

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Gender Discrimination in Primary Education Sector: A Study on Slum Area in Rajshahi City Corporation

Rubayat Shariar Rupom*
Anutosh Das**
Md. Sakib Zubayer***

Abstract

Although Bangladesh has brought many improvements in many sectors, including educational sectors, gender discrimination has existed in literacy in the last several decades. The study aims to analyse the present disparity between males and females in the primary education sector. In this regard, household and primary school questionnaire survey have been performed to collect the necessary data. Systematic random sampling has been used for survey design, and the sample size was fifty with a confidence level of 95%. The obtained data were analysed using SPSS and Microsoft Excel software. The study has found that the rate of school-going female children is less than that of male children, and the rate of dropout female children is more than that of male children. The reason behind this consequence isa financial problem and parents' incognisance. Despite many facilities in the primary education sector, female education is given less importance than male education. This study reveals the present condition of gender discrimination in the primary education sector. By taking some steps of Government and raising public awareness, gender discrimination in the primary education sector can be solved very soon.

* Undergraduate Student, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology, Rajshahi. E-mail: rupomkhan39@gmail.com

** Assistant Professor, Department of Urban and Regional Planning, Rajshahi University of Engineering & Technology.

*** Lecturer, Department of Urban and Regional Planning, Rajshahi University of Engineering & technology. E-mail: sakibzubayer@gmail.com

JEL Classification *O15 · O17 · I21 · O18 · I31*

Keywords *Primary Education · Gender Discrimination · Education in Slums · Literacy*

Introduction

Primary education is the first stage of formal education. Primary education provides students with a basic understanding of various subjects as well as their skills. Primary education is universally accepted as the foundation laying level of education in all nations of the world (Etor. et al., 2013). A pupil or student who completes a level of education such as primary education (from grade 1 to 5 in Bangladesh) is called a primary graduate. Primary education is compulsory for both male and female children.

Gender discrimination means a situation in which someone is treated less well because of their sex, usually when a girl is treated less well than a boy. Gender discrimination occurs when a person is treated unfavourably due to social behaviour such as the non-conformance of gender roles (which may be related to someone's sexual orientation).Half of the world's populationconsists of women, whose large portion is still discriminated against in different phases of life directly or indirectly. Gender discrimination in the world can be seen in different religions, countries and communities. For gender discrimination, women lag behind men in many activities such as educational activities, economic activities, decision-making processes, social and cultural activities.

Gender discrimination is much pronounced in the education sector. Equal primary education is the fundamental right of every citizen of the country. Inequality has appeared as a major barrier in achieving universally acknowledged primary education in Bangladesh. Though there are various efforts undertaken to achieve universal primary education, gender discrimination also exists in literacy. A large number of female children are deprived of primary education for discrimination. Gender discrimination prevails in the percentage of drop out male and female children. The disparity in primary education exists in division, locality, gender, sex and economic status in Bangladesh (Ferdaush, 2011).

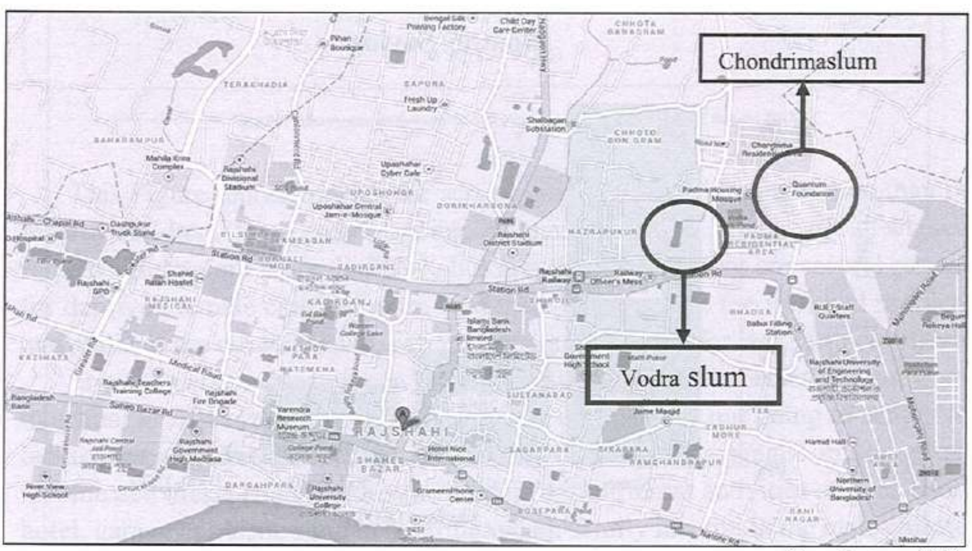
Gender discrimination highly predominates in lower classes and some middle classes. Usually lower classes people are illiterate and have no concern about the importance of their children's primary education. In Rajshahi city-corporation, there are some slum areas where many children live with the age of 6 to 10 years. However, most of the children are not going to primary school, and their parents are not also concerned about their children's primary education. The children are engaged in different low-income activities. As a result, the literacy rate of Rajshahi city-corporation is not increasing.

This study will help to know the education status of parents and their economic condition, the rate of primary school-going children and reasons behind for not school going, the percentage of dropout students and reasons behind dropout, the existing condition of gender discrimination of primary school education and lastly thinking about the further study of the educational sector. There have been some problems with completing this study. There were tendencies of the respondents to conceal information. Again, some respondents did not want to talk.

Methods and Materials

Primary education is typically the first stage of formal education, coming after preschool and before secondary education. Bur still, a large portion of children are deprived of primary education for gender discrimination. The objectives of this study were to analyse the significant changes in gender discrimination of primary school education and the rate of female dropout students, and the public perception of it in Rajshahi City Corporation.

Generally, low-income people have a higher tendency to be deprived of primary education. For that, two slums were selected in Rajshahi City-corporation to collect data. These slums were Vodra slum and Chondrima slum in 19 No. ward. In this slum, most families are illiterate, and their monthly family income is meagre. Around 740 populations live in these slums, and there are about 200 children aged 6 to 10 years.



(Source: Google map, 2018)

Map: Location of Vodra slum and Chondrima slum in Rajshahi

Simple random sampling and systematic random sampling were followed for the study. A questionnaire was created to get the desired data on the different variables set to establish the achievement of the study's objectives. The population of this study was 740, and the sample size was 50 with a confidence level of 95%.

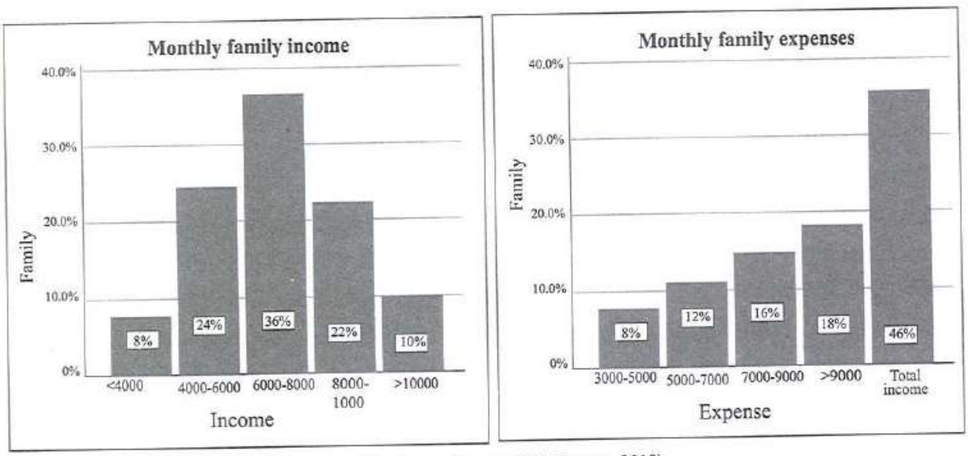


Figure-1: Monthly income and expenses of family (Source: Field Survey, 2018)

From this Figure, it can be observed that most households have monthly expenses equal to their monthly income. Generally, the slum area has many family members, but accordingly, the number of earning members is low. Some

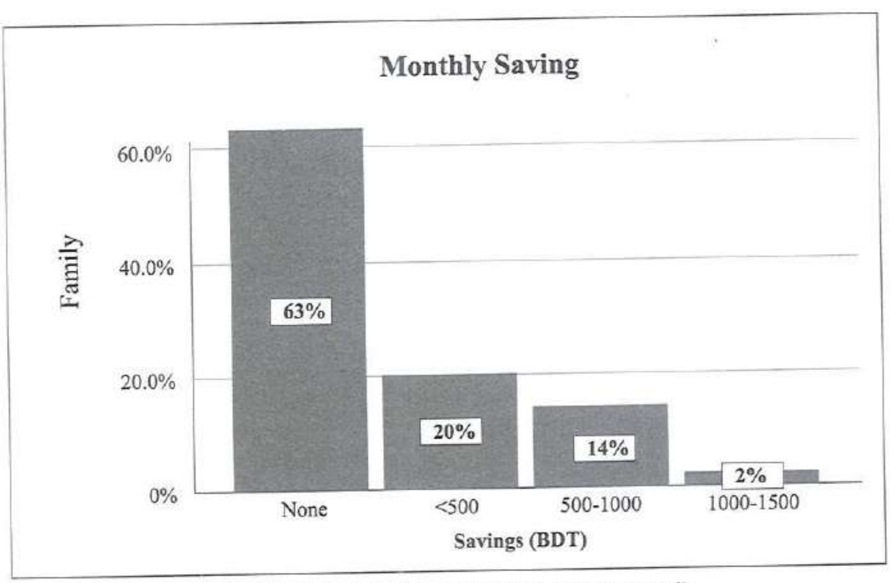


Figure-2: Monthly savings of family(Source: Field Survey, 2018) male members work in hotels, plastic shops or welding shops, and some are rickshaw pullers and beggars. As well as some female members are engaged in different activities such as household works or begging. Most households have an average monthly income of 6000-8000 BDT, and their monthly expenses are total income. Very few families have more than two earning members and an average monthly income of more than 10000 BDT. There are also some families with a monthly income of less than 6000 BDT. There are few households whose monthly expenses are less than the monthly income.

This Figure represents that most of the families have no savings. Since their monthly expenses are equal to their monthly income, they cannot save any money in a month or a year. There are few families whose earning members are more than two and save 1000 BDT or less monthly. They save their money in different NGOs.

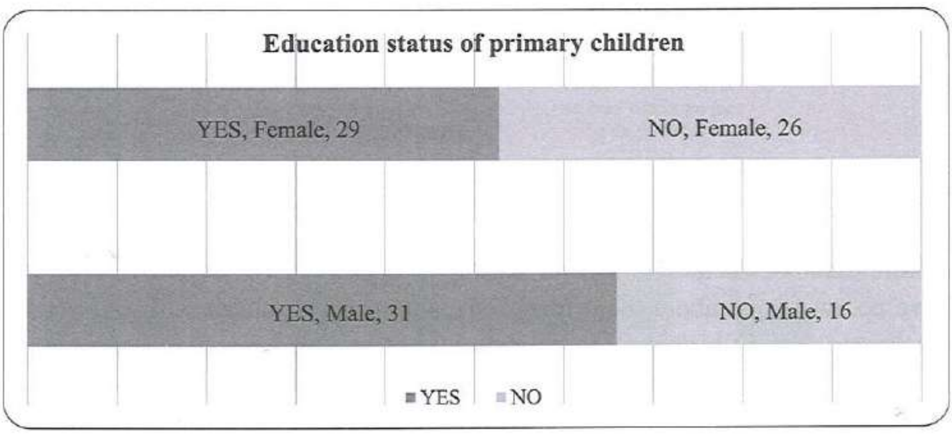


Figure-3: Primary education status of 6 to 10 years children (Source: Field Survey, 2018)

This Figure represents that the school going male children are more than the female children. Here, school-going male children are almost 65%, whereas female children are more than 50% but less than 55%. There are several reasons for deprived female children more than male children like the financial problem, and children are not interested, parents are not interested, for lack birth certificate.

From the above chart, it can be evaluated that the main reason for not going to school is a financial problem. Most of the children are not going to school for lack of money. The parents are not educated. They are engaged in some low-income activities. Their children are engaged in different activities such as tokay, hotel, garage or plastic shop to contribute their family income.Some male children are continuing their primary education along with the work, but the female

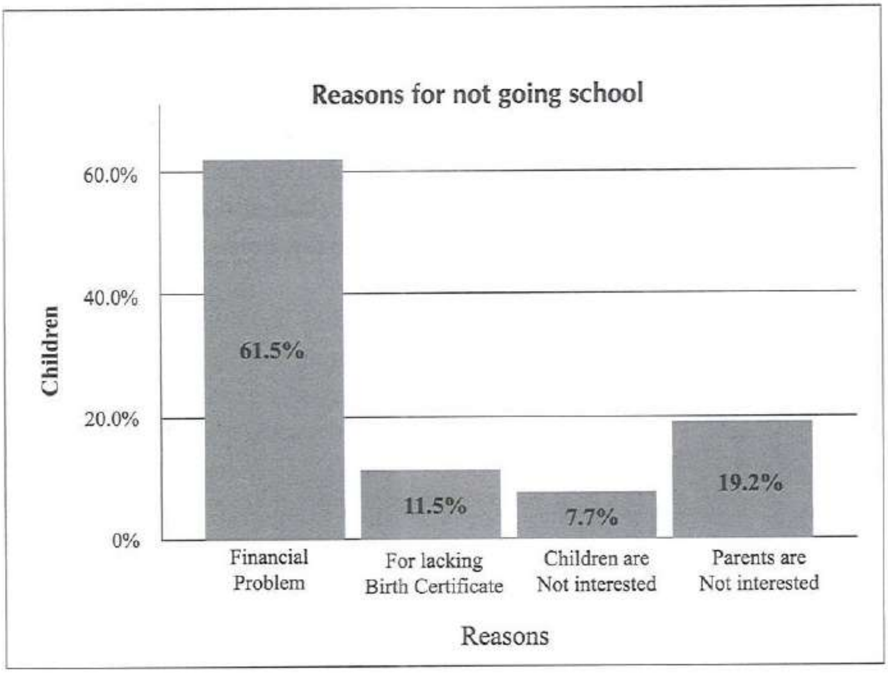


Figure4: Reasons for not going to school (Source: Field Survey, 2018)

children cannot do it. The second reason is parents' incognisance. The parents have no awareness about the primary education of their children. The other two reasons are lack of birth certificate, and children are not interested. Some parents

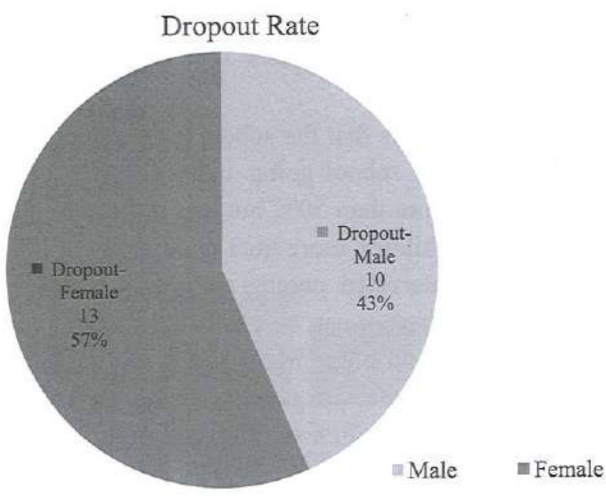


Figure-5: Dropout rate (Source: Field Survey, 2018) are not conscious about preparing the birth certificate of their children. That is why the school administration could not admit them.

The Figure shows that the children, both male and female, do not complete their primary education. Here, the rate of female dropout children is more than the male dropout children.

Because male children can do many works in taking primary education, female children cannot do it. Again, when female children grow up, then their parents think about their marriage. As a result, female children are fall behind in education than male children.

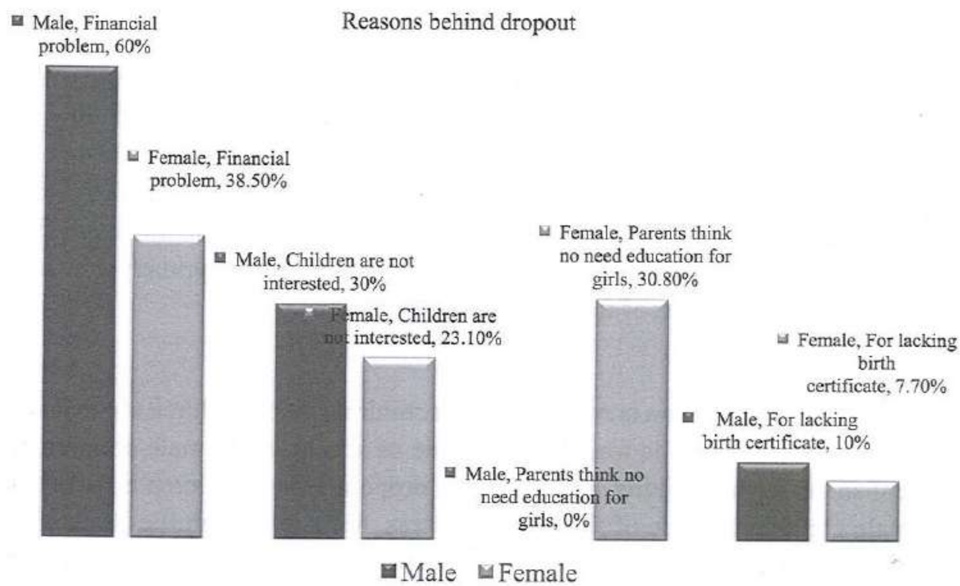


Figure-6: Reasons behind dropout (Source: Field Survey, 2018)

The chart represents that the main reason behind the dropout of both male and female children is a financial problem. Most of the children are given up primary education for lack of money. Their family income is meagre, and their parents cannot afford to study for their children. That is why the children are stopped attending school and engaged in various low-income activities. Several children are given up their education for lack of their interest. Some children are given up for lack of birth certificates. Besides these reasons, there is another reason which stopped female children from attending school. That is, parents think a girl's education is not necessary. They do not have any concern about female education. Because most of the parents are illiterate. So, when their female children grow up, then they think about their marriage.

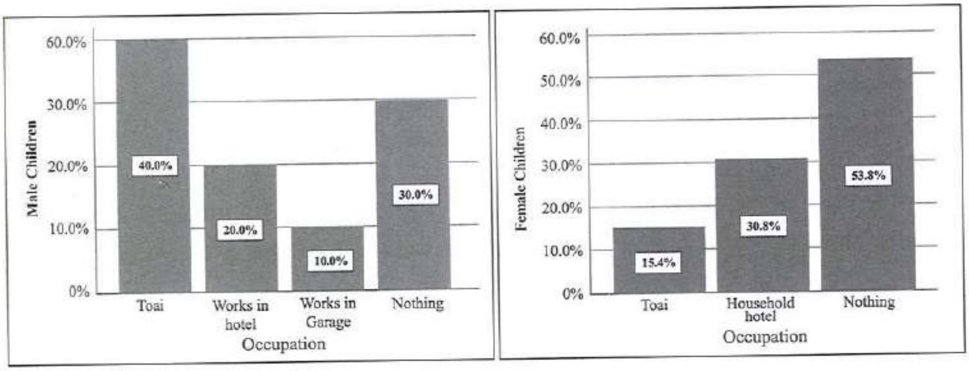


Figure-7: Occupation of the children (Source: Field Survey, 2018)

This Figure represented that; the children are engaged in different types of low-income activities to contribute to their family income. Most of the male children are tokay, and female children are not engaged in any activities. Some male children are works in a hotel, garage and female children work in the house. The male children earn an average of 1000-3000 BDT per month, and female children average 500-2000 BDT per month. Some male children are continuing their primary education with this income, but most of the female children cannot do it.

Discussion

Though primary education is compulsory for children, many children are deprived of primary education. It is found that the rate of school-going male children are more than the female children and the rate of dropout female children is more than the male children because of financial problems. Most of the families live below the poverty level, and the parents cannot afford to study their children. That is why the male children are doing many works to contribute to their family income. Most of the male children left their studies for income. Some children continue their primary education along with work. However, most of the female children cannot do it. As a result, the rate of school-going male children are more than the female children, and the rate of dropout male children are lower than the female children. Other reasons are lacking birth certificates, children are not interested, and parents are not interested. Most of the parents are illiterate. So, they have no concern about the primary education of their children. They have no awareness of the importance of female education. Still, the parents are thinking about the marriage of their female children. It is a matter of sorrow that gender discrimination still exists in our country at the primary education level. In order to build an educated society, this gender discrimination at the primary education level must be overcome.

Conclusion

Education is one of the basic needs of a human being. Primary education is compulsory for both male and female children. However, many children are deprived of primary education for many reasons. Still, there are exists gender discrimination, and for that, female children are deprived of primary education.

This study had the aim to analyse the gender discrimination in primary school education and dropout rate in Rajshahi city-corporation. The rate of primary school-going female children are less than the male children, and the rate of dropout female children are more than the male children. The main reason behind this not going to school and dropout from primary education is a financial problem. However, it is also seen that several female children are dropout for lack of parent awareness. Their parents are not interested in the primary education of their female children. So still, there are exists gender discrimination in primary school education. Gender discrimination is a social crisis. It has a destructive impact on the overall socio-economic sector. So, it needed to be solved very soon.

References

Comfort R. Etor, Usen F. Mbon., & Ekpenyong E. Ekanem. (2013). Primary Education as a Foundation for Qualitative Higher Education in Nigeria. URL: http://dx.doi.org/10.5539/jel.v2n2p155

Ferdaush, J. (2011). Inequality in Primary Education of Bangladesh.

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Status and Potential of Jute Industry in Rajshahi Division

Md. Ashrafuzzaman*
Md. Atiqul Islam**

Abstract

This study explores the status of jute and jute goods production in Rajshahi Division. Using secondary data, simple descriptive statistics is used for the analysis. It was found that jute production covered around 1.1 lac hectare area in Rajshahi Division in 2017. It is the third-largest jute growing division in Bangladesh. In terms of yield rate and total production, it is ranked as second and third position respectively. However, it is found that only a few jute mills are situated in this division. Although around 16 percent of total raw jute is produced here, only 0.05 percent of the country's jute mill is situated here. Infrastructural facilities, labour availability, and climatic environment are very much conducive here for the jute industry. The jute industry in the Rajshahi division could be a potential sector to create employment, driving force for growth, and source of foreign currency for the economy.

JEL Classification *L70 · L52 · L17 · O13 · O25 · Q15 · Q25 · Q57*
Keywords *Raw Jute · Jute Goods · Jute Industry*

1. Introduction

Bangladesh is famous for producing the best quality of jute. She produces about 80% of the gross production of jute in the world. In Bangladesh, almost every district is suitable for jute cultivation. It is cultivated as a cash crop. Jute fibres are used for

* Postgraduate Student, Department of Economics, University of Rajshahi, Rajshahi. E-mail: asraful.ru.eco@gmail.com

** Associate Professor, Department of Economics, University of Rajshahi, Rajshahi. E-mail: atiqru@ru.ac.bd

making Hessians, sacks, bags, wall mats, carpets. Growing international demand for diversified jute products has prompted Bangladeshi jute manufacturers and exporters to develop value-added jute products like jute gunny bag or sack bags, jute yarn and twine, handicrafts, shopping bags, beach bags, sports and travel bags, wine bags, and other jute textiles. The primary exporting jute goods are Hessian, Sacking, Carpet Backing Cloth, and others. Export of raw jute and jute goods were 8.25 lac bale and 7.30 lac metric ton in FY 2018-19. Bangladesh receipts a large amount of foreign currency by exporting raw jute and jute goods. In FY 2018-19, export earnings receipt US$ 816.27 million from exporting raw jute and jute goods (EPB, 2019). Overall, the contribution of raw jute and jute goods in the GDP was 0.42 % and 2.37 %, respectively, in FY 2017-18.

2. Literature Review

Some studies on Jute production and the present status of the jute sector have been researched several times by different researchers. Some are discussed below regarding jute cultivation, problems of jute cultivation, modern cultivation of jute and farmers' attitudes towards jute cultivation, and the present status of jute mills.

Islam and Ali (2018) analysed the jute production and current status of jute mills in Bangladesh. From their study, the results imply that the total labour force in agriculture was 32 million in 2011, of which 4 million farmers were engaged in jute cultivation. There were 219 jute mills in Bangladesh. Among them, 86 were under BJSA, 106 were under BJMA, 88 were running, and 27 were under BJMC. There were approximately 1,65,501 workers employed in the jute mills of Bangladesh. BJSA mills, BJMA mills, and BJMC mills were 422,000, 160,000 and 172,923 MT of jute products.

Islam and Ali (2017)emphasised the economic importance of jute in Bangladesh. According to their analysis, the status of jute as a cash crop of Bangladesh was not satisfactory. They found that millions of people of Bangladesh depend on all affairs of jute crop. They stated some reasons or problems such as lack of proper government policy on jute, lack of production of jute, random closures of jute mills, failure to modernise the cultivation system and manufacturing units, mismanagement and malpractice, fall of demand of jute in the world market, use of the alternative source to jute.

Islam (2015) points out the present status and constraint of jute cultivation in Bangladesh. He collected data through a structured interview schedule from 803 jute farmers sampled conveniently. Islam used descriptive statistics like frequency distribution, mean and standard deviation to analyse the socio-economic status of the jute growers, whereas factor analysis was performed by the principal component analysis (PCA). Understudy, he identified three categories of constraints that hinder sustainable jute production. These were the lack of capital and inputs, knowledge and natural resources, and market information. Lack of jute diversification knowledge was the unique findings of his study.

Shakil et al. (2013) analysed the production of a jute mill in Bangladesh. The study aimed to identify which factors determine jute mills' production and help get the desired production rate. They used a flow chart process to get results in production. They also identified several factors behind the production unit of the jute mill, which was intrinsically and extrinsically related to the productivity of yarn. The result shows that more than six production units were producing 215 MT yarn per day.

Islam (2007) points out the modern cultivation of jute and farmers' attitudes towards jute cultivation in Bangladesh. The research was done by collecting primary data. Statistical methods like the Coefficient of correlation (r) were used to explore the relationships between jute growers' attitudes and selected characteristics. The estimated result obtained from the study reveals that about 72 percent of jute farmers had favourable to moderately favourable attitudes towards modern jute cultivation. The Attitude of the jute growers was ascertained through a 5 point like art type scale. The literacy rate was higher than the national average, giving a positive attitude towards innovative agricultural technologies and demonstrating and motivating farmers to adopt appropriate technologies.

Hussain et al. (2002) found out the problems and solutions of jute cultivation faced by the farmers in Bangladesh. The study was conducted based on primary data. The study was based on the 12 selected problems of jute farmers. The study identified some problems such as low market price and low demand of jute growers as significant problems. The study reveals the third problem as inadequate knowledge of the farmers in grading jute fibre and the fourth problem as there are no price incentives for quality fibre at the primary market. The study also reflects the periods of jute cultivation and the price of HYV jute seed which became a high price and goes beyond the purchasing capacity of small farmers.

The above study highlights the jute cultivation and status of the jute industry in Bangladesh. Among those studies, some are about jute cultivation, constraint or problems of jute cultivation, the status of jute mills, problems of the jute sector in Bangladesh. Some study was done on districts based performances of jute cultivation, problems that farmers faced by jute cultivation, and the economic importance of the jute sector. To the best of our knowledge, a separate study considering division-wise production performance of jute cultivation in Bangladesh is missing. Moreover, none of the studies was performed to highlight the production and potential of the jute industry in the Rajshahi division.

Therefore, this study explores the present status of raw jute and jute industries in the Rajshahi division.

3. Objectives

This study aims to analyse the status and potentials of jute industries in the Rajshahi division. To achieve this objective, the specific objectives are identified as:

1. To analyse the present status of jute production in the Rajshahi division;
2. To explore the status of jute mills in the Rajshahi division; and
3. To identify the prospects or potential of the jute industry in the Rajshahi division.

4. Methodology

Literature review type methodology is used here to achieve the objectives. Different secondary materials were reviewed thoroughly, and the data found there are used here for the analysis. These secondary materials are journals, books, newspapers, magazines, published articles, and documents of different public and private institutions. Apart from those, the statistics from different national and international organisations are used here. Those data specify the present situation of raw jute and jute goods production in the Rajshahi and other Bangladesh divisions. In this case, descriptive statistics like average and percentage were used to concludebased on those secondary sources.

5. Finding and Discussions

The status of jute industries of the Rajshahi division in Bangladesh is analysed here. However, the production situation in the fiscal year 2017-18 in Bangladesh and different divisions is discussed first. The situation of raw jute production in the Rajshahi division, among other divisions,is analysed here. Then, the situation of jute production in the Rajshahi division in recent years (last five years from 2012-13 to 2016-17) is analysed. The number of jute mills and employment creation by those in Rajshahi divisions is analysed in the following sub-section. At last, the potential of jute industries in the Rajshahi division is identified.

5.1 Jute Production in Bangladesh

Jute is cultivated almost all over Bangladesh. Every division is suitable for jute cultivation. However, it grows more in the plain lands of our country. However, the product distribution is not the same for all the divisions of our country. The jute cultivation in terms of area, quantity, and yield in eight divisions in FY 2017-18 is shown in Table 1.

It is noticed from the table that in terms of area-wise production,the Dhaka division is the highest producer, and the Sylhet division is the lowest producer of

Table 1: Area, quantity, and yield of production of jute of eight divisions in FY 2017-18

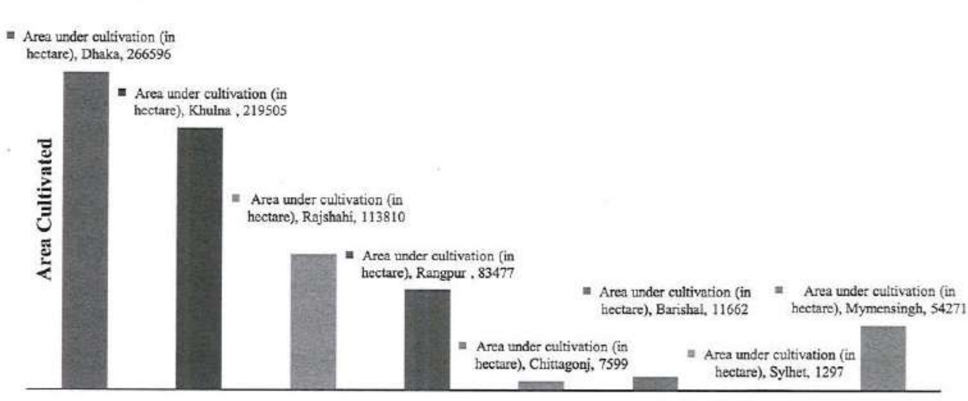
Division	Area under cultivation		Yield per hectares	Total Production	
	In hectare	%	In bales	In billion bales	%
Dhaka	266596	35.16	10.8	289.1	32.52
Khulna	219505	28.95	12.6	275.7	31.01
Rajshahi	113810	15.01	12.4	141.6	15.93
Rangpur	83477	11.00	12.2	102.2	11.50
Mymensingh	54271	7.16	11.1	60.7	6.83
Barishal	11662	1.54	9.2	10.7	1.20
Chattogram	7599	1.00	10.5	8	0.90
Sylhet	1297	0.18	7.8	1	0.11
Bangladesh	758218	100	11.7	889	100

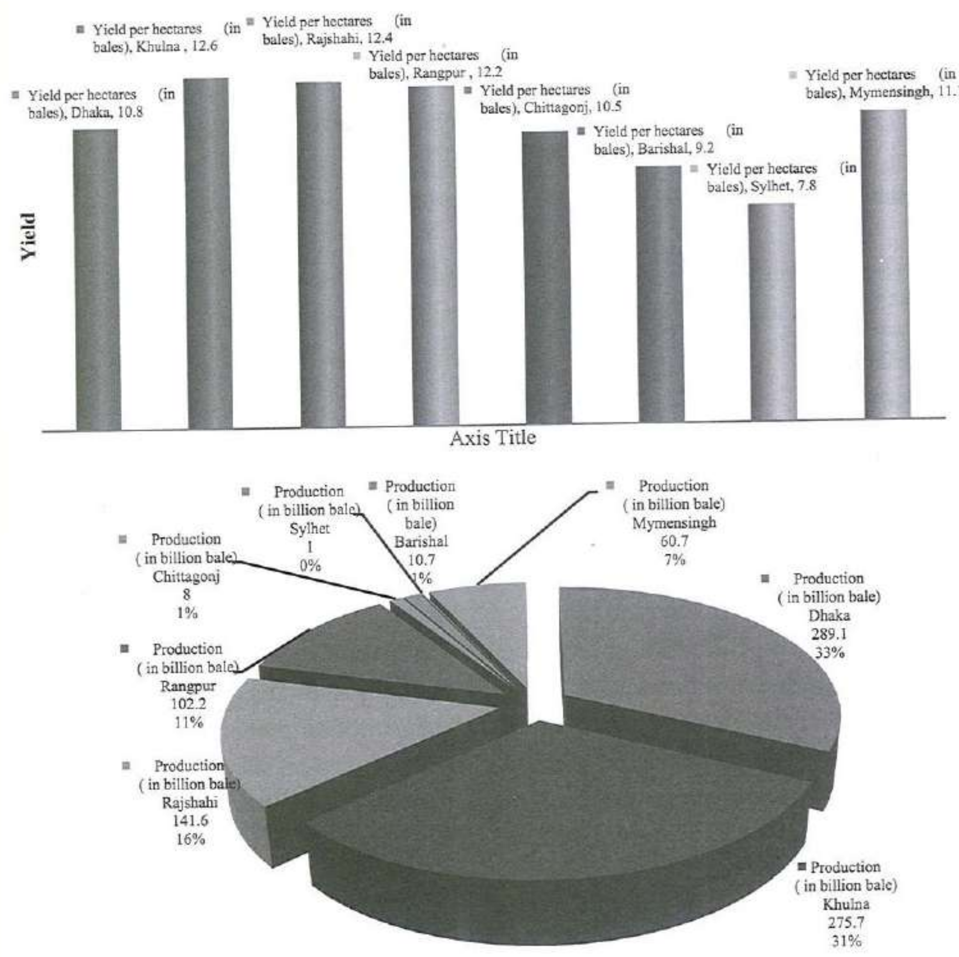
Source: BBS, 2018

jute. In this respect, around 15% of the total area producing jute in Bangladesh comes under the Rajshahi division. Similarly, around 16% of the total jute produced in Bangladesh is produced here.

The situation is more clearly understandable in Figure 1 also. Rajshahi division is the third largest jute producing division in Bangladesh. Moreover, the

Figure 1: Area, Yield, and Quantity of Production of Jute in 2017-18





Note: Area cultivated is in a hectare, yield is in bales per hectare, and quantity produced is in the percentage of total production in Bangladesh;
Source: Author's compilation

yield rate is relatively high here compared to other divisions. It is 12.4 bales per hectare, which is even higher than the country's average of 11.7 bales per hectare. Khulna is the only division with a higher yield rate than Rajshahi, 12.6 bales per hectare.

5.2 Jute Production in Rajshahi Division

In Rajshahi Division, jute is produced in almost all the districts, more or less. The jute production situation in recent years in the Rajshahi division is shown in Table 2. For that purpose, five years from 2012-13 to 2016-17 is used here for the analysis.

To have more understanding of the situation is also shown in Figure 2. It is found that although the area cultivated in different years differs slightly, it is near about 1.05 lac hectares every year. Therefore, area-wise production is relatively

Table 2: Area, quantity, and yield of production of jute in Rajshahi Division

Fiscal Year	Area cultivated (in hectares)	Yield per hectares (in Bales)	Production (in billion bales)
2012-13	107117	11.9	128.2
2013-14	104360	12.1	126.3
2014-15	106335	11.9	127.4
2015-16	102077	12.0	123.4
2016-17	107650	12.1	130.2

Source: BBS, 2018

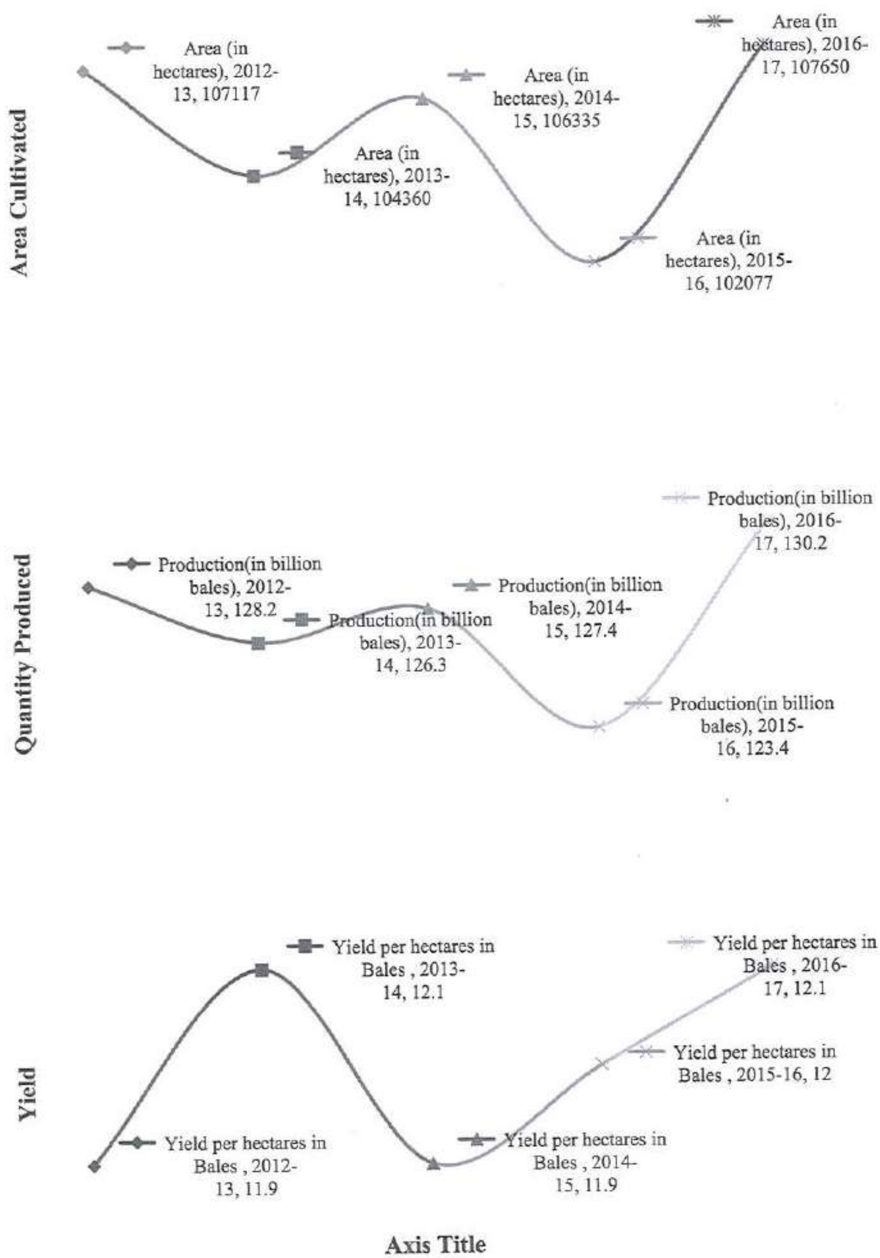
stable here. Quantity of production and the yield rate also does not show considerable discrepancies in these years. Whatever the slight fluctuation is, there can be explained as weather variability, which is quite natural for agricultural output. However, by inspecting, we may say that jute produces around 127 billion bales in the Rajshahi division every year. Moreover, the yield rate is around 12 bales per hectare here. Overall, whether it is the area of cultivation, total production, or yield rate, the jute production in the Rajshahi division is relatively stable.

5.3 Jute Mills in Rajshahi Division

According to the jute department, the production of total jute goods was 9.38 lac MT in FY 2018-19. Around 78% of this are exported,and export earnings from jute goods were Tk. 5220.85 core. Both government and private-owned jute mills are producing these goods here. Bangladesh Jute Mills Corporation (BJMC) is a governmental organisation that controls state-owned jute mills. On the other hand, Bangladesh Jute Spinners Association (BJSA) is another organisation that controls jute mills in the private sector. The total number of operating jute mills in Bangladesh is shown in Table 3 below.

From Table 3, it is noticed that in Bangladesh, we have 113 jute mills, among which 25 are state-owned, and 88 are in the private sector. In Rajshahi Division, there are only 6mills, among which 1 is government and five others are privately owned. Overall, only 5% of the country's total jute mills are situated here. Compared with the other division, it is found that the Rajshahi division has the lowest number of jute mills in Bangladesh. Moreover, the Rajshahi division produces around 16% of raw jute, whereas only 6% of the country's jute mills are

Figure 2: Area, Quantity, and Yield of Jute Production in Rajshahi Division



Note: Area cultivated is in a hectare, yield is in bales per hectare, and quantity produced is in the percentage of total production in Bangladesh;
Source: Author's compilation

Table 3: Number of Jute Mills in Bangladesh

Division	Government		Private		Total	
	Number	%	Number	%	Number	%
Dhaka	5	20	22	25	27	24
Khulna	9	36	55	62.5	64	57
Rajshahi	1	4	5	5.68	6	5
Chattogram	10	40	6	6.81	16	14
Total	25	100	88	100	113	100

Source: Researchers' compilation using the data from BJMC and BJSA

here. Although we did not consider the production capacity, considering only the raw jute production and the number of mills situated here, we may conclude that more jute mills can be set up here in the Rajshahi division.

The jute industry is a labour-intensive industry. It requires many workers in the jute mills to produce jute goods. Moreover, less skilled labour can easily be absorbed in thisindustry as not too much-sophisticated technology is used here. Thus jute industry can create employment opportunities for unemployed workers. The total number of labour employed in different jute mills in the Rajshahi division and the rest of the divisions in Bangladesh are shown in Table 4 below.

The above table shows that 1 lac 94 thousand workers are employed in different jute mills in Bangladesh. However, only 7,800 workers are employed in 6 jute mills in the Rajshahi division,with only 4.02% of total workers employed

Table 4: Number of Employment in Jute Mills

Division	Workers Employed		Number of Jute Mills (b)	Workers per Jute Mill *(Average=a/b)*
	Number (a)	%		
Rajshahi	7,800	4.02	6	1300
Others	1,86,200	95.98	107	1740
Bangladesh	1,94,000	100	113	1716

Source: Researchers' compilation using the data from BJMC and BJSA

in this industry. The rest of the workers are employed in other divisions that is 95.98% of total workers. As the number of jute mills is few here (only 6), fewer workers should be here. It is pretty reasonable. However, when we see this as part of the holistic picture, it is understood that, although raw jute produced in the Rajshahi division is around 16% of total Bangladesh, only 5% of jute mills are here, only 4% of total employment is engaged. Moreover, the average number of workers per jute mill is 13 hundred, which is relatively low compared to the country's or other division's average (more than 17 hundred). Although we did not consider mills' production capacity, we may conclude that new jute mills have scopes and more employment creation opportunities in the Rajshahi division.

5.4 Potentiality of Jute Industry in Rajshahi division

- Surplus Raw Jute:From the above findings, we can say that jute produced in the Rajshahi division has a surplus in processing done by present jute mills. Therefore, we have a great deal of scope to establish new jute mills. Jute mills would not worry about their raw material and need not look for it to other divisions.
- Adequate Infrastructural Facilities:To attract industries to set up somewhere, infrastructural facilities are a prerequisite. In this respect, the Rajshahi division is in a good position. A jute mill can be established in any district in the division as all facilities are pretty adequate here. Moreover, Ishwardi Export Processing Zone (EPZ) is situated in this division with all necessary facilities, established in 2001, quite a long time ago. The government is setting up two new economic zones (EZ) in Rajshahi and Natore. Therefore, infrastructural facilities are reasonably well to set up new jute mills here in the Rajshahi division.
- Availability of Labor: According to the labour force survey 2015-16, in Rajshahi division unemployment rate is around 3% (BBS, 2017). From this, it can be derived that around 2.8 lac unemployed labour is available in this division. Moreover, the wage rate is also low compared to other divisions because of the socio-economic condition here. Therefore, this division could be a proper place to set up new jute mills from labour availability and cost perspective.

6. Conclusion

The study highlights the status of the Rajshahi division in the case of raw jute and jute goods production. The study reveals that the Rajshahi division ranked third position in the case of areas under cultivation. In FY 2017-18, 1 lac 14 hectares of land were used for jute cultivation. The position of the Rajshahi division is second in the case of yield, and its yield rate was 12.4 bales per hectares. Rajshahi division ranked third position in the case of jute production. It produces 16% of the total jute production of Bangladesh. However,there are only six jute mills in the Rajshahi division, including one government and five private mills, which is relatively less than other divisions. Surplus raw jute, infrastructural facility, and labour availability provide a conducive environment for establishing new jute mills in the Rajshahi division. It may improve employment opportunities in the region and contribute to the export earnings for the country.

References

BJMC. (2018).Bangladesh Jute Mills Corporation Annual Report 2017-18, Dhaka, Bangladesh

BBS. (2018).Statistical Yearbook of Bangladesh, Agricultural wing, Bangladesh Bureau of Statistics, Dhaka, Bangladesh

BBS .(2017). Quarterly Labour Force Survey Bangladesh 2015-16, Bangladesh Bureau of Statistics, Dhaka, Bangladesh

BJSA. (n.d). Bangladesh Jute Spinners Association [online] available at : >http://www.juteyarn-bjsa.org/juteataglance.php> [accessed on 4th November 2019]

Department of Jute (n.d)Raw jute and jute goods production and export [online] Available at: <http://www.dgjute.gov.bd/site/page/f869d683-96d4-4222-8f51-fd334b34c53e/> [accessed on 2November 2019]

EPB. (2019). Export Data, Export Promotion Bureau of Bangladesh, [online] Available at: <http://epb.gov.bd/site/view/epb_export_data/-> [accessed on 28October 2019]

Hussain, M.,Rahman., Uddin, M.N., Taher, Nabi, M. A., & Mollah .(2002). Problems and Solutions in Jute cultivation faced by farmers in a selected area of Bangladesh,Online Journal of Biological Sciences, 2(9), pp.628-629

Islam, M. Mahbubul., & Ali, M. Saheb. (2017).Economic Importance of Jute in Bangladesh: Production, Research Achievements, and Diversification,International Journal of Economic Theory and Application,4(6), pp. 45-57.

Islam, M. Mahbubul.,& Ali, M. Saheb. (2018).Industrial Research Advances of Jute in Bangladesh,International Journal of Agricultural and Biosystems Engineering, 3(1), pp.1-9.

Islam, Z. (2007) 'Attitude of Farmers towards modern jute cultivation in Baliakandi Upazila under Rajbari District,' unpublished M.S thesis. Sher-e-Bangla Agricultural University, Dhaka, Bangladesh

Islam, M. Muzahidul. (2015).Status and Constraints of Jute Cultivation in Bangladesh: An Experience from selected Upazilas under Chandpur District,Asian Journal of Agriculture and Rural Development, 5(8), pp.175-186.

Shakil, M. Rahmat Ullah., & Mostafa Lutfi. (2013). Process Flow Chart and Factor Analysis in Production of a Jute Mills,Journal of Industrial and Intelligent Information, 1, (4), pp. 247-254

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Impact of an Individual's Institutional Field of Study on Inciting Income in the Labor Marketin Canada

Md. Razib Alam*
Mahmud Ullah**

Abstract

The purpose of this study is to examine the impact of an individual's institutionalfield of study on inciting her / his yearly earnings in the Canadian Labour market. By using the Microdata File (PUMF) of the 2006 Census of Population of Canada and adopting ordinary least squares (OLS) and quantile regressions (Q.R.), the paper shows how thefinancial returns vary across the income distribution based on the field of study. After controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations, the research results show that the yearly earning of a person is influenced bythe choice of her / his institutional field of study. The results of quantile regression (Q.R.) models reveal that, in general, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. The QR models also show that the effects of the individual field vary across various quantiles. The study further shows that the impact of the field of study diminishes as one moves up the earning or income distribution; at the higher levels, occupations may become a more meaningful indicator of yearly earnings.

JEL Classification *I26·J21 · J24 · J62 · E24 · D31· C25*

Keywords *Education- Field of Study · Labour Market · Occupation · ncome · Yearly Earnings · Quantile Regression*

* Associate Professor, Department of Marketing, University of Dhaka, Dhaka – 1000, Bangladesh.

** Associate Professor, Department of Marketing, University of Dhaka, Dhaka – 1000, Bangladesh. (Corresponding Author.)

Introduction

People generally think that the income premium of a university degree is extensive and ever-growing. However, Coates & Morrison (2012 & 2013) challenged this popular thought. They argue that not all degrees are valued equally in the Canadian job market. Coates & Morrison (2012) mention that students who complete degrees in applied and specialised fields (e.g. accountants, I.T. specialists, economists, health care professionals, and MBAs) generally do well in the job market. However, students with non-specialised degrees (e.g. arts, humanities, and basic sciences) generally face prolonged underemployment and even unemployment, at least for quite a while at times. After completing their non-specialised university degrees, students usually enrol in a one-or two-year postgraduate certificate or diploma program in a college to get some employable skills (Miner, 2010). Canada has one of the world's highest rates of residents with post-secondary degrees and diplomas, second only to South Korea's (Coates & Morrison, 2012). However, not all fields of study offering post-secondary degrees provide the same return to the concerned degree holders.

By mentioning the 2006 Canadian Census data that the Statistics Canada Data Centre crunches at McMaster University, Coates & Morrison (2013) argue that the average income for university graduates aged 26 to 35 years old varies based on the field of study. However, they did not show any empirical evidence to prove their statement. Our paper conducts an empirical analysis to show the relationship between the field of study and yearly earnings by controlling the level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. To address the claim that income premium varies due to the field of study, this paper seeks to answer the question: does the field of study matter for income returns? This issue is examined using data from the 2006 Census of Population (Canada) Public Use Microdata File (PUMF). Specifically, by adopting OLS regression and quantile regressions (Q.R.), this paper examines the impact of the fields of study on yearly earnings and shows how the field of study based yearly financial returns vary across the income distribution pattern.

The choice of field of study influences the results of the study exhibit that yearly earning. After controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations, the results show that compared to educational & recreational field, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. However, fine & applied arts, humanities & related fields, and agricultural, biological, & nutritional fields impact yearly earnings negatively. By and large, this result matches the observation of Coates & Morrison (2012 &

2013). The results of the quantile regression (Q.R.) models reveal that, in general, engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. Again, returns are lower to fine & applied arts, humanities & related fields, and agricultural, biological & nutritional fields. One interesting finding from the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of increment varies among the fields across the different quantiles. The QR models also show that the individual field effects vary across various quantiles. For example, in the case of engineering & applied sciences, the return is lowest in the 25th quantile and highest in the 95th quantile. It is also true for management & business administration, health professions, and mathematics & computer science fields. Moreover, the result from the Q.R. models exhibits among almost all the study areas that the field of study-specific returns amongthe fields decreases as one moves up the earnings distribution. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution; because at the higher level, occupations may become a more meaningful indicator of yearly earnings.

Literature

Broadly, two streams of literature deal with the relationship between the fields of study and labour market earnings. The first stream of the literature shows the impact of potential earnings on fields of study selection when a student enrols in a college or university. Moreover, the second stream of literature focuses on the impact of the field of study on labour market earnings after graduation. Our work is related to the second one.

The first stream of literature focuses on the expected labour market earnings after completing a degree in college or university choices (Willis and Rosen, 1979; Berger, 1988; Beffy et al., 2012). Willis and Rosen (1979) show that the demand for higher education depends on anticipated post-education earnings. Berger (1998) shows that the expected flow of future earnings impacts the field of study selection. However, using a large sample of 26,359 individuals who completed their higher studies in French institutions in 1992, Beffy et al. (2012) shows that the impact of future earnings on post-secondary major choices is meagre but significant.

In general, college or university graduates earn more wages than those without a higher education degree (Autor2014; Brand and Xie 2010; Kim and Sakamoto, 2008; Oreopoulos and Petronijevic, 2013). However, not all degrees have similar economic returns. Graduates from various fields of study gain different capabilities and skills during their studies (Van de Werfhorst and Kraaykamp 2001). Some fields of study may yield more job-related skills and prepare students for specific professions, whereas others mainly focus on general skills and lack a job-related specific alignment (Noelke et al., 2012). Some fields may provide students with more stirring and productive skills and knowledge than others (Klein, 2016). Using micro-census data of West Germany between 1980 and 2008, Klein (2016) investigated the impact of the field of study on labour market participation. Klein found that graduates from different fields of study may have different professional paths, and field-specific job-related routes grow differently over time. Several studies show that graduates from 'soft fields' (Biglan, 1973), for instance, social science and humanities, have lower labour market returns than that of the graduates from 'hard fields' (Reimer and Noelke, 2008) such as engineering or natural sciences (Arcidiacono, 2004; Marini and Fan, 1997).

In some cases, vocational degrees are more linked to higher earnings than university degrees. Using the 2004 and 2008 Survey of Income and Program Participation (SIPP) dataset, Kim and Tamborini (2019) find significant variation across degree types and fields of study. Several vocational degrees are associated with higher earnings than bachelor's degrees in social science, liberal arts, and education. Using the data of the 1983 Census of Population of Israel, Neuman and Ziderman (1991) show that students who completed vocational school and got jobs in their field of study earn more than their counterparts who went to general schools. Vocational degrees are not always linked to higher earnings. For instance, vocational training connected with general education usually leads to unemployment of the training receiver (Ahmed, Tutan; 2016).

Few studies attempt to investigate whether returns to fields of study vary across different countries (Kim and Kim, 2003; Machin and Puhani, 2003; Reimer and Noelke, 2008; Reimer and Steinmetz, 2007; van de Werfhorst, 2004). However, all these studies compare two or three countries except for Reimer and Noelke (2008). Using data from 22 countries from the European Labor Force Surveys of 2004 and 2005, Reimer and Noelke (2008) show how the field of study impacts unemployment and the professional status of university graduates. Reimer and Noelke (2008) find that although humanities graduates have a risk of unemployment, they earned relatively high occupational status; whereas, health and welfare-related degree-holders received the lowest average occupational status. Hence, it is evident that the relationship results between the fields of study and labour market earnings vary across countries. Each country is unique in many ways.

The fields of study may differ in the scope that ranges from general to occupational skills. Even job prospects of engineering graduates may vary from country to country due to the presence of licensing systems related to the practising of different engineering professions (Rataj and Unt, 2012). Hence, it is warranted to study the relationship between the fields of study and labour market earnings from the perspective of each country. Therefore, this study investigates the impacts of the fields of study on labour market outcomes in the Canadian context.

Data

The data were pulled out from the Public Use Microdata File (PUMF) of the 2006 Census of Population (Canada). Coates & Morrison (2013) utilised this data source in their paper. The census data were collected through a paper questionnaire and online questionnaire in May 2006. The Census contains a record of 844,476 individuals, representing 2.7% of the Canadian population. As a result, the data set contains 14,390 valid observations. Since the Census is essentially a simple random sample, we do not apply sampling weight for the analyses. However, to estimate the impact of the field of study on earnings, we selected a sample of men and women aged 25 to 34 who studied in Canadian Universities, employed full year (48-52 weeks) on a full-time basis, and had positive labor market earnings in the income reference year of 2005.

To estimate the impact of the field of study on yearly earnings, the data set that we finally use controls several variables. These include information indicating the person's most advanced diploma or degree (e.g., bachelor, master), gender, age, immigration status, knowledge of the official language, and occupations.

We consider the historical classification of the major fields of study, which consists of 11 categories. Table1represents the field of study distribution of the

Table 1: Field of Study Distribution and Mean Yearly Earnings

Field of Study	Percent	Mean Yearly Earning ($)
Educational, recreational &counselling	15.89	44821.77
Fine and applied arts	1.94	36137.19
Humanities & related fields	10.01	44616.57
Social sciences and related fields	18.76	51441.46
Management & business administration	20.75	60626.03
Agricultural, biological & Nutritional	4.79	45115.9
Engineering & applied sciences	10.94	64632.06
Applied science technologies & trades	0.23	48909.09
Health professions & related technologies	7.76	55955.57
Mathematics, computer, & physical sciences	8.94	56249.56

sample and the average yearly earnings associated with each. Management & business emerges as the highest / largest (20.75%) followed by social sciences (18.76%), educational & recreational (15.89%), engineering & applied sciences (10.94%), humanities (10.01%), mathematics & computer (8.94%), health professions (7.76%), agricultural, biological, & nutritional (4.79%), fine arts (1.94%), and trades (0.23%).

The data set represents 53.41% female and 46.59% male respondents. The data set considers two age groups, 25 to 29 years representing 46.77% of the observation and 30 to 34 years representing 53.23% of the observation. To find the earning differences among the respondents, we use immigration status.

Non-immigrants are Canadian citizens by birth representing 85.09% of the observation, immigrants represent 14.64% of the observation, and non-permanent residents are persons from another country, representing only 0.27% of the data. We consider the knowledge of the official languages of the respondents. 58.85% of the respondents speak English, 5.90% speak French, 35.24% speak both languages, and .01% of the respondents have no knowledge ofeither of the languages. The summary statistics for control variables are incorporated in Table2 to Table 6.

Methodology

Ordinary least square (OLS) regression and quantile regressions (Q.R.) have been used in this study. OLS regression helps to identify a multivariate relationship between yearly earnings and the field of study. To determine the impact of the field of study on earnings distribution, the basic model to be estimated can be written as follows:$\ln w_i = \beta_1 + \beta_2 F_i + \beta_3 X_i + \beta_4 Ci + \beta_5 O_i + \varepsilon_i$

Where, is the dependent variable which is the log of yearly earnings; represents the field of study dummy variables; represents a set of degree awarded level, gender; age controls represent set of immigration status and knowledge of official languages controls, and represents a set of occupation controls, and is the error term. Three OLS regression models have been adopted to test the impact of the field of study on yearly earnings by adding more control variables to each subsequent model.

In OLS model 1, we show the impact of the field of study on yearly earnings by controlling the level of degree awarded (e.g. bachelor, master, diploma, medicine, and doctorate), gender (male and. female), and age groups (25 to 29 and 30 to 34 years). When running the OLS regression 1, we use 'Educational & Recreational' as a reference group for the field of study, 'Bachelor' as a reference group for a degree awarded control, 'Male' as reference for gender control, and 'Age 25 to 29 years as a reference group for age control.

Table 2: Summary Statistics of Yearly Earning's ($) Distribution over Field of Study

Field of Study	Mean	SD	10%	25%	50%	75%	95%
Educational, recreational &counselling	44822	16972	24000	35000	45000	54000	70000
Fine and applied arts	36137	34314	13000	22000	32000	45000	74000
Humanities & related fields	44617	42059	18000	29000	40000	54000	80000
Social sciences and related fields	51441	46971	22000	33000	45000	61000	95000
Management & business administration	60626	55994	27000	38000	51000	70000	120000
Agricultural, biological & nutritional	45116	24338	14000	30000	44000	59000	84000
Engineering & applied sciences	64632	60350	29000	44000	58000	75000	110000
Applied science technologies & trades	48909	18981	26000	39000	48000	59000	84000
Health professions & related technologies	55956	38698	22000	40000	54000	66000	100000
Mathematics, computer, & physical sciences	56250	44827	24000	38000	52000	68000	100000

Table 3: Summary Statistics of Yearly Earning's ($) Distribution over Degree Awarded

Degree awarded	Mean	Standard deviation	10%	25%	50%	75%	95%
Bachelor	52654	47179	23000	35000	47000	62000	98000
Diploma	50952	29957	24000	36000	49000	62000	89000
Medicine	62839	76852	17000	33000	52000	64000	150000
Master	57422	41957	20000	38000	53000	70000	110000
Doctorate	51150	29556	4000	29000	53000	70000	96000

Table 4: Summary Statistics of Yearly Earning's ($) Distribution over Immigration Status

Immigration status	Mean	Standard deviation	10%	25%	50%	75%	95%
Non-permanent	33083	43882	8000	13000	25000	39000	57000
Canadian	53443	45749	23000	35000	48000	63000	100000
Immigrants	52363	45301	22000	34000	47000	63000	99000

In addition to OLS model 1, we incorporate immigration status and knowledge of the official languages in OLS model 2. We use 'Non-immigrants

Table 5: Summary Statistics of Yearly Earning's ($) Distribution over Knowledge of the Official Languages

Knowledge of official language	Mean	Standard deviation	10%	25%	50%	75%	95%
English	55166	51514	23000	35000	49000	65000	100000
French	41348	18393	21000	31000	41000	48000	70000
Both English & French	51988	37480	23000	35000	48000	62000	95000
Neither English & French	45000	18385	32000	32000	45000	58000	58000

Table 6: Summary Statistics of Yearly Earning's ($) Distribution over Occupation

Occupation	Mean	Standard deviation	10%	25%	50%	75%	95%
Managers	67076	65540	27000	40000	57000	80000	130000
Professionals	54886	44745	25000	39000	50000	64000	96000
Technicians	41837	19632	20000	29000	40000	53000	75000
Supervisors	45981	24489	20000	28500	43000	59000	98000
Administrative	45683	22370	25000	33000	42000	53000	83000
Skilled sales	65475	80984	22000	35000	59000	76000	110000
Trades	44389	26029	17500	28000	42000	57000	86000
Clerical	38279	18344	19000	29000	36000	46000	68000
Intermediate sales	41902	26503	14000	24000	37000	54000	87000
Manual	43805	23019	15000	30000	40000	52000	84000
Other sales	30642	21564	11000	18000	26000	40000	68000
Other manual works	35300	21689	16000	20000	31500	46000	91000

(Canadians by birth)' as a reference groupfor immigration status control and 'English' as a reference group for controlling official languages. In OLS model 3, we add 'Occupations' as a control variable, where we use 'Managers' as reference groups.

Weestimate the field of study and the other control variables' effects on yearly earnings at the 10th, 25th, 50th, 75th, and 95th percentile. We use quantile regression to analyse how the effects of the field of study and the degree awarded vary across the different points along with the yearly earnings distribution. Finally, weanalyse the data using STATA 16.0 version.

Results

The results from the OLS regression analyses are presented in Table 7. Overall, the impact of the field of study on yearly earnings is stable across the three OLS regression models with different control variables, namely, level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. In OLS model 1, where we use level of degree awarded, gender, and age as control variables, suggests that relative to the base case (educational & recreational), the returns are higher to engineering & applied sciences (22.6%), management & business (19%), mathematics & computer (12.4%), health & related technologies (10.9%), and social sciences & related fields (2.1%). However, relative to the base case, returns are lower to fine & applied arts (-33.5%), humanities & related fields (-12.4%) and agricultural, biological & nutritional (-19%). Moreover, there is no significant impact of applied science technologies & trades on yearly earnings.

The returns on fields of study slightly fall almost in all the fields when we add immigration status and knowledge of the official languages as additional controls in OLS model 2. OLS model 2 suggests that relative to the base case (educational & recreational) the returns are higher to engineering & applied sciences (22%), management & business (18.2%), mathematics & computer (11.6%), health & related technologies (9.5%), and social sciences & related fields (0.6%). Again, compared to the base case, returns are lower to fine & applied arts (-34.7%), humanities & related fields (-13.9%) and agricultural, biological & nutritional (-20.2%). Moreover, again, there is no significant impact of applied science technologies & trades on yearly earnings.

The most striking thing is that when we add occupations as additional controls in OLS model 3, the returns based on the fields of study increase significantly in almost all fields. More specifically, OLS model 3 reveals that relative to the base case (educational& recreational), the returns are higher to engineering & applied sciences (22.7%), management & business (19.0%), which is the same as in model 1, mathematics & computer (13.5%), health & related technologies (10.1%), and social sciences & related fields (5%). Again, compared to the base case, returns are lower to fine & applied Arts (-26%), humanities & related fields (- 9%) and agricultural, biological & nutritional (-16%). Moreover, again, there is no significant impact of applied science technologies& trades on yearly earnings. The results of the Q.R. models, which identify how the returns on a field of study vary across the yearly earnings distribution, are presented in Table 8. The results of Q.R. models show that, in general, the same fields of the study identified in OLS models provide more yearly earnings than the reference fields. As in OLS models, relative to the base case (educational & recreational), the returns are higher to engineering & applied sciences, management & business, mathematics & computer, health & related technologies, and social sciences & related fields. Again, compared to the base case, returns are lower to fine & applied arts,

Table 7: OLS Regressions: Impact of Field of Study on Yearly Earnings

Variable	OLS 1 Degree Awarded and Sex	OLS 2 Immigration Status and Knowledge of Official Languages	OLS 3 Occupation
(Reference= Educational, recreational &counselling) Fine and applied arts	-0.335*** (0.044)	-0.347*** (0.044)	-0.260*** (0.045)
Humanities & related fields	-0.124*** (0.024)	-0.139*** (0.024)	-0.090*** (0.025)
Social sciences and related fields	0.021 (0.019)	0.006 (0.020)	0.050** (0.020)
Management & business administration	0.190*** (0.018)	0.182*** (0.018)	0.190*** (0.019)
Agricultural, biological & Nutritional	-0.190*** (0.054)	-0.202*** (0.055)	-0.160** (0.057)
Engineering & applied sciences	0.226*** (0.026)	0.220*** (0.027)	0.227*** (0.026)
Applied science technologies & trades	0.066 (0.091)	0.045 (0.093)	0.112 (0.094)
Health professions & related technologies	0.109** (0.039)	0.095** (0.040)	0.101** (0.039)
Mathematics, computer, & physical sciences	0.124*** (0.024)	0.116*** (0.025)	0.135*** (0.025)
(Reference= Bachelor) Diploma	0.031 (0.017)	0.023 (0.017)	0.014 (0.017)
Medicine	-0.240 (0.144)	-0.234 (0.144)	-0.263** (0.144)
Master	-0.002 (0.023)	0.011 (0.023)	-0.023 (0.023)
Doctorate	-0.557** (0.188)	-0.546*** (0.187)	-0.573*** (0.187)
(Reference=Male) Female	-0.094*** (0.016)	-0.084*** (0.016)	-0.077*** (0.016)
(Reference=Age 25 to 29) Age 30 to 34	0.277*** (0.014)	0.278*** (0.014)	0.264*** (0.014)
(Reference= Canadian) Non-permanent		-0.599*** (0.129)	-0.600*** (0.130)
Immigrants		-0.071*** (0.018)	-0.062 (0.018)
(Reference=English) French		-0.255 (0.039)	-0.266*** (0.039)
Both English & French		-0.047** (0.015)	-0.057*** (0.015)

Continue

Variable	OLS 1 Degree Awarded and Sex	OLS 2 Immigration Status and Knowledge of Official Languages	OLS 3 Occupation
Neither English & French		0.094 (0.113)	-0.051 (0.110)
(Reference=Managers) Professionals			-0.111*** (0.019)
Technicians			-0.297*** (0.027)
Supervisors			-0.266*** (0.040)
Administrative			-0.202*** (0.025)
Skilled sales			-0.059 (0.051)
Trades			-0.523*** (0.144)
Clerical			-0.350*** (0.026)
Intermediate Sales			-0.377*** (0.035)
Manual			-0.326*** (0.058)
Other sales			-0.711*** (0.085)
Other manual works			-0.526*** (0.131)
Constant	10.522 (0.018)	10.568 (0.019)	10.711 (0.026)
Observations	14,390	14,390	14,390
R-squared	0.059	0.065	0.084

Note: Standard errors in parentheses.
*** Significant at 1%
**Significant at 5%
*Significant at 10%

humanities & related fields, and agricultural, biological & nutritional fields.

The result shows no significant impact of applied science technologies & trades on yearly earnings except for the Q.R. .75 level. The critical pattern evident in the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of

Table 8: Quantile Regressions: Impact of Field of Study on Yearly Earnings

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
(Reference= Educational, recreational &counselling)					
Fine and applied arts	0.512***	-0.293***	-0.223***	-0.094***	0.049
	(0.086)	(0.047)	(0.030)	(0.025)	(0.058)
Humanities & related fields	-0.157**	-0.121***	-0.067***	-0.002	0.126***
	(0.046)	(0.025)	(0.016)	(0.013)	(0.032)
Social sciences and related fields	0.037	0.012	0.038**	0.116***	0.259***
	(0.039)	(0.021)	(0.014)	(0.011)	(0.028)
Management & business administration	0.199***	0.125***	0.141***	0.216***	0.384***
	(0.039)	(0.021)	(0.014)	(0.011)	(0.027)
Agricultural, biological & nutritional	-0.358***	-0.067**	0.024	0.096***	0.175***
	(0.059)	(0.032)	(0.020)	(0.017)	(0.040)
Engineering & applied sciences	0.262***	0.206***	0.223***	0.267***	0.331***
	(0.046)	(0.025)	(0.016)	(0.013)	(0.032)
Applied science technologies & trades	0.317	0.187	0.094	0.130*	0.073
	(0.226)	(0.125)	(0.080)	(0.067)	(0.129)
Health professions & related technologies	0.092*	0.170***	0.195***	0.235***	0.332***
	(0.050)	(0.028)	(0.018)	(0.015)	(0.035)
Mathematics, computer, & physical sciences	0.125**	0.108***	0.132***	0.201***	0.292***
	(0.048)	(0.026)	(0.017)	(0.014)	(0.034)
(Reference= Bachelor)					
Diploma	-0.010	0.020	0.019	0.014	-0.060**
	(0.040)	(0.022)	(0.014)	(0.012)	(0.027)
Medicine	-0.509***	-0.120**	-0.063*	-0.025	0.346***
	(0.105)	(0.057)	(0.037)	(0.031)	(0.072)
Master	-0.182***	0.004	0.048***	0.052***	0.027
	(0.034)	(0.018)	(0.012)	(0.010)	(0.024)

Continue

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
	-1.877***	-0.360***	0.023	0.005	-0.153*
Doctorate	(0.116)	(0.064)	(0.041)	(0.034)	(0.080)
(Reference=Male)	-0.088***	-0.078***	-0.088***	-0.097***	-0.179***
Female	(0.025)	(0.013)	(0.008)	(0.007)	(0.016)
(Reference= Age 25 to 29)	0.311***	0.252***	0.220***	0.217***	0.259***
Age 30 to 34	(0.023)	(0.012)	(0.008)	(0.007)	(0.015)
(Reference= Canadian)	-1.000***	-1.053***	-0.628***	-0.411***	-0.122
Non-permanent	(0.191)	(0.112)	(0.073)	(0.060)	(0.110)
Immigrants	-0.108**	-0.085***	-0.062***	-0.043***	-0.071**
	(0.032)	(0.017)	(0.011)	(0.009)	(0.022)
(Reference=English)	-0.154**	-0.132***	-0.195***	-0.239***	-0.278***
French	(0.049)	(0.026)	(0.017)	(0.014)	(0.033)
Both English & French	-0.034	-0.032**	-0.050***	-0.051***	-0.036**
	(0.024)	(0.013)	(0.008)	(0.007)	(0.016)
Neither English & French	0.494**	-0.044	-0.222	-0.138	-0.463***
	(0.226)	(0.209)	(0.231)	(0.112)	(0.109)
(Reference=Managers)	0.014	-0.000	-0.064***	-0.124***	-0.183***
Professionals	(0.035)	(0.019)	(0.012)	(0.010)	(0.025)
Technicians	-0.243***	-0.265***	-0.263***	-0.301***	-0.365***
	(0.053)	(0.028)	(0.018)	(0.015)	(0.035)
Supervisors	-0.241**	-0.288***	-0.263***	-0.246***	-0.275***
	(0.087)	(0.047)	(0.030)	(0.025)	(0.058)
Administrative	-0.131	-0.122***	-0.222***	-0.269***	-0.336***
	(0.061)	(0.033)	(0.021)	(0.017)	(0.041)
Skilled sales	-0.108	-0.080**	0.040	-0.023	-0.094*
	(0.072)	(0.039)	(0.025)	(0.021)	(0.050)
Trades	-0.468**	-0.346***	-0.307***	-0.322***	-0.471***
	(0.145)	(0.077)	(0.050)	(0.042)	(0.083)

Continue

Variable	QR .10	QR .25	QR .50	QR .75	QR .95
Clerical	-0.236	-0.273***	-0.342***	-0.400***	-0.489***
	(0.054)	(0.030)	(0.019)	(0.016)	(0.037)
Intermediate Sales	-0.539***	-0.408***	-0.329***	-0.276***	-0.263***
	(0.062)	(0.033)	(0.021)	(0.018)	(0.042)
Manual	-0.408***	-0.279***	-0.327***	-0.308***	-0.307***
	(0.116)	(0.065)	(0.041)	(0.035)	(0.079)
Other sales	-0.770***	-0.687***	-0.615***	-0.560***	-0.611***
	(0.131)	(0.075)	(0.048)	(0.040)	(0.090)
Other manual works	-0.536**	-0.579***	-0.456***	-0.551***	-0.334*
	(0.246)	(0.129)	(0.084)	(0.069)	(0.142)*
Constant	10.072	10.472	10.791	11.006	11.354
	(0.049)	(0.027)	(0.017)	(0.014)	(0.034)
Observations	14390	14390	14390	14390	14390
Pseudo R-squared	0.066	0.082	0.108	0.135	0.151

Note: Standard errors in parentheses.
*** Significant at 1%
**Significant at 5%
*Significant at 10%

increment varies among the fields across the quantiles. For instance, agricultural, biological, and nutritional fields negatively impact earnings up to Q.R. .25 level; however, it becomes significantly positive at Q.R. .75 and Q.R. .95 levels. Q.R. models also provide individual field effects across various quantiles. Inthe case of engineering & applied sciences, the return is lowest in the 25th quantile and highest in the 95th quantile. It is also true for management & business administration, health professions, and mathematics & computer science fields.

The results from the Q.R. models also show that the differences in increment in the field of study-specific returns among the fields decrease as one moves up the earnings distribution. For instance, if we compare the increments between arts and engineering, we observe that at Q.R. .10, the gap is 77.4%, at Q.R. .25, the gap is 49.9%, at Q.R. .50 the gap is 44.6%, at QR.75 the gap is 36.1%, and at Q.R. .95 the gap is 28.2%. This pattern holds for other observations as well. If we compare the increments between arts and business, we see at Q.R. .10 the gap is 71%, at Q.R. .25 the gap is 41.8%, at Q.R. .50 the gap is 36.4%, at QR.75 the gap is 31%, and at Q.R. .95 the gap is 33.5%. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution because the higher-level occupations become more critical than the fields of study.

Conclusion

This study examines the impact of the field of study on yearly earnings in Canada in 2005 by controlling the level of degree awarded, gender, age, immigration status, knowledge of the official languages, and occupations. The study results show that, compared to the educational & recreational field, engineering&applied sciences, management &business, mathematics &computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. However, fine & applied arts, humanities & related fields, and agricultural, biological, and nutritional fields impact yearly earnings negatively.

The results of Q.R. models exhibit that, generally, engineering & applied sciences, management &business, mathematics & computer, health & related technologies, and social sciences fields contribute more to the yearly earnings. Again, returns are lower to Fine & Applied Arts, humanities & related fields, and agricultural, biological & nutritional fields. One interesting finding from the Q.R. models is that the impact of the field of study increases across the different quantiles except for the technological & trade field; however, the rate of increment varies among the fields across the different quantiles. Moreover, the results of the Q.R. models show that the field of study-specific returns decreases as one moves up the earnings distribution. Therefore, we conclude that the impact of the field of study diminishes as one moves up the earning distribution because the higher-level occupations become more important factors than the other factors of specific fields of study.

Field of study matters for the income, or financial returns although the gap between fields narrows at a higher quantile of the income level. Coates & Morrison (2012 & 2013) argued that the field of study matters for future earnings. However, they did not show any empirical evidence to prove their statement. Our paper conducted an empirical analysis to show the relationship between the field of study and yearly earnings by controlling the level of degree awarded, gender, age, knowledge of the official languages, immigration status, and occupations. In general, the findings match with observations mentioned by Coates & Morrison (2012 & 2013). However, we need more control variables such as union membership, tenure, experience, contract type, technical skills, team skills, communications, academic results, and so on to prove the relationship.

Future researchers may focus on those issues. The policymakers, both government and universities, may think about this issue; because earning is the most critical factor for the quality of life. The university is a great source of learning skills required for desired jobs. Suppose some institutional fields of study fail to provide sufficient skills that are required by the job market. In that case, policymakers may take corrective actions for the betterment of the Canadian socio-economic conditions.

This research may also be helpful to the researchers and policymakers in the governments and educational institutions in different countries around the world. As an aspiring country with the ambitious goal of becoming a developed nation by 2041, Bangladesh may also benefit from this study done in the context of Canada, despite having contrasting data on many indicators of measuring socio-economic conditions of the two countries till now.Research projects may be undertaken involving the concerned stakeholders in Bangladesh to create coherent databases applying a concerted effort of all the parties together in a well-coordinated manner, to developholistic models to determine the interrelation and interdependence among education, employment, and earnings both in the short term, and long term till the country reaches the stage of a developed nation. These models may be equipped with the auto-update and adjustment mechanisms to help Bangladesh continue to remain so, i.e. a developed country to receive and maintain the status of a sustainably developed nation in the context of the existing global socio-economic conditions and as per the standard criteria set during any actual and reasonable period.

References

Ahmed, Tutan.(2016). "Labour market outcome for formal vocational education and training in India: Safety net and beyond". IIMB Management Review, 28(2), 98-110.

Arcidiacono, P. (2004). "Ability Sorting and the Returns to College Major". Journal of Econometrics, 121(1–2), 343–75.

Autor, David H. (2004). "Skills, education, and the rise of earnings inequality among the "other 99 percent". Science, 344(6186), 843-851.

Baranowska-Rataj, Anna., & Unt, Marge. (2002). "Is it Worth Becoming an Engineer in Central and Eastern Europe? The Evidence from Poland and Estonia". European Sociological Review, Volume 28, Issue 6, 717–728.

Beffy, Magali, Fougère, Denis., &Maurel, Arnaud. (2012). "Choosing the Field of Study in Post-secondary education: Do Expected Earnings Matter?"The Review of Economics and Statistics, 94(1), 334–347.

Berger, Mark C. (1988). "Predicted Future Earnings and Choice of College Major", Industrial and Labor Relations Review, 41, 418–429.

Brand, Jennie E., & Xie, Yu.(2010). "Who Benefits Most from College? Evidence for Negative Selection in Heterogeneous Economic Returns to Higher Education". American Sociological Review, 75(2), 273-302.

Coates, K., & Morrison, B. (2012). "The uses and abuses of university". The Walrus, 9(8), 34. URL: http://thewalrus.ca/the-uses-and-abuses-of-university/

Coates, K., & Morrison, B. (2013). "Your university degree may be worth less than you think". Maclean's, 126(2), 42. URL: http://www.macleans.ca/ education /uniandcollege/ the-million-dollar-promise-2

Kim C, &Sakamoto A. (2008). "The Rise of Intra-Occupational Wage Inequality in the United States", 1983 to 2002. American Sociological Review, 73(1), 129-15

Kim, A., & Kim, K.-W. (2003). "Returns to Tertiary Education in Germany and the U.K.: Effects of Fields of Study and Gender", Mannheimer Zentrum für Europäische Sozialforschung Working Paper No. 62.

Klein, Markus.(2016). "The association between graduates' field of study and occupational attainment in West Germany, 1980–2008", Journal for Labour Market Research. 49, 43–58.

Machin, S., & Puhani, P.A. (2003). "Subject of Degree and the Gender Wage Differential: Evidence from the U.K. and Germany", Economics Letters, 79(3), 393–400.

Marini, M.M., & Fan, P.L. (1997). "The Gender Gap in Earnings at Career Entry". American Sociological Review, 62(4), 588–604.

Miner, Rick. (2010). The great Canadian skills miss-match: People without jobs, jobs withoutpeople. Miner Management Consultants.

Neuman, Shoshana., & Ziderman, Adrian. (1991). "Vocational Schooling, Occupational Matching, and Labor Market Earnings in Israel". The Journal of Human Resources, 26(2), 256-281.

Noelke, C., Gebel, M., &Kogan, I. (2012). Uniform Inequalities: Institutional Differentiation and the Transition from Higher Education to Work in Post-Socialist Central and Eastern Europe. European Sociological Review, 28(6), 704–716.

Oreopoulos, Philip., & Uros Petronijevic.(2013). "Making College Worth It: A Review of Research on the Returns to Higher Education."National Bureau of Economic Research Working Paper 19053.

Reimer, David., & Noelke, Clemens. (2008). "Labor Market Effects of Field of Study in Comparative Perspective: An Analysis of 22 European Countries". International Journal of Comparative Sociology, 49(4–5), 233–256.

Reimer, D., & Steinmetz, S. (2007) 'Gender Differentiation in Higher Education: Educational Specialization and Labour Market Risks in Spain and Germany', Mannheimer Zentrum für Europäische Sozialforschung Working Paper No. 99.

van de Werfhorst, H.G. (2004) 'Systems of Educational Specialization and Labor Market Outcomes in Norway, Australia, and The Netherlands', International Journal of Comparative Sociology, 45(5): 315–35.

Van de Werfhorst, H.G., & Kraaykamp, G. (2001) 'Four Field-related Educational Resources and Their Impact on Labor, Consumption, and Socio-political Orientation', Sociology of Education, 74: 296-317.

Willis, Robert J., &Sherwin Rosen. (1979). "Education and Self-Selection,"Journal of Political Economy, 87, S7–S36.

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Economics of Corporate Gatekeeping: Roles and Responsibilities of Multiple Gatekeepers

Jamaluddin Ahmed*

Abstract

This paper primarily identifies the corporate gatekeeper and their roles and responsibilities and shows examples of economic costs resulting from corporate gatekeeping failures. The gatekeeper responsibilities in the various sectors of the economy such as public, private, financial, legal, accounting and corporate – Board of Directors, regulatory agencies – Government commissions have been identified. Failure in rightful responsibility in dealing with the conflict of interest by the gatekeepers posted in the running of corporate affairs causes corporate failures, and corporate scandals crossing the limit of corporate business practice, regulatory and legal and ethical and moral limit cast massive cost to the business and finally to the whole economy. They are sharing liability among corporate gatekeepers has been discussed for distribution of the cost of damage. The damages cause reputational loss to every professional involved in the gatekeeping process and finally cost severe damage to the county's economic branding and credit rating as a whole. All limitations cannot be overcome in one attempt. Instead, it is gradual. There should be a priority in the regulatory professionals' selection process by fixing a proper eligibility criterion – bench marks, allowing them to work based on the prevailing rules, in the absence of the rules that should be framed for execution responding to the changed situation. The paper presents a summary, conclusion and recommendation for further research.

* Chairman, Emerging Credit Ratings Agency. E-mail: drjamal00014@gmail.com
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Introduction

Descriptions of gatekeepers typically focus on their ex-ante role. One standard definition of gatekeeper is a reputational intermediary who provides verification or certification services to investors. Another one is needed before a transaction can close [Geoffrey C. Hazard Jr. & Angelo Dondi, (2004)]. Gatekeepers, however, also engage in ex-post monitoring designed to uncover misconduct after it occurs, initiate an investigation, and report the misconduct or take enforcement measures. Also, many gatekeepers perform an advisory role concerning structural or regulatory issues regarding a transaction without necessarily providing verification, certification, or approval. Such advisors are gatekeepers, too, because we expect them to advise a client to avoid illegal conduct. Taking these considerations into account, a gatekeeper is defined in this paper as a person or firm that provides verification or certification services or that engages in monitoring activities to cabin illegal or inappropriate conduct in the capital markets.

The expanding interest in positive incentives for capital market gatekeepers dovetails with a broader and older trend in the regulation literature. It reflects a philosophical shift from traditional deterrence-oriented strategies toward more cooperative and rewards-oriented systems to promote compliance. This approach joins market and regulatory accountability mechanisms described using various terms such as cooperative compliance, interactive compliance, responsive regulation, collaborative governance and cooperative implementation. An essential inspiration for this shift is empirical psychological evidence suggesting that positive incentives may be more likely to promote desired behaviour than harmful threats.

Law's preoccupation with liability design is understandable since lawyers have a comparative advantage in liability design. Designing reward systems may seem beyond the law's scope or lawyers' competence. A lawyer might expect that if rewards programs are productive, market participants will design and implement them. While this seems correct, two qualifications are relevant. First, non-market impediments can frustrate implementing good ideas, as where gatekeepers fear that demonstrating the capability to perform a task will expose them to liability. Second, contemporary financial reporting occurs in a complex setting that combines free market innovation with considerable regulatory limitations. The combination may prevent otherwise appealing contractual innovations from gaining traction. If so, lawyers—and legal scholars—may have the capacity to spark ideas that markets can test and implement. In that spirit, this Article introduces the possibility of going beyond liability to design rewards for effective gatekeepers.

The theoretical concept of Gatekeepers —

Varieties of third-party assistance in accessing capital markets exist. The following considers the attributes and distinctions among those usually described as "gatekeepers" and "whistle-blowers" and then considers some that partake of attributes of each (called hybrids below). Gatekeepers work with an enterprise to correct misreporting before it occurs. They do so by threatening to withhold the support necessary to complete a report or consummate a transaction. Gatekeepers can deny access to capital markets (Peter C. Kostant, *Breeding Better Watchdogs: Multidisciplinary Partnerships in Corporate Legal; 2000)*. So gatekeepers are "intermediaries who provide verification and certification services to investors" by pledging their professional reputations—and, by withholding such support, block admission through the gate (Erik F. Gerding, 2006). Law's gatekeeper approach always imposes a monitoring duty but not necessarily a reporting duty: eventual discovery exposes the gatekeeper to liability for the primary violation, not merely a remedy for non-reporting. Even so, the gatekeeper approach is intended to give professionals regulatory incentives to prevent misreporting [(HARV. L. REV. 2227, 2245 (2004)]. Most gatekeepers are paid for their services by the enterprises that retain them; all have stated duties whose breach exposes them to legal liability.

Gatekeepers include auditors and attorneys, who work directly with and essentially inside the enterprise. Auditors attest to financial statement assertions under duties established by statute and articulated in professional codes of performance (SEC Order (April 25, 2003). Lawyers advise on transaction design and disclosure. Lawyers often determine whether senior executives can sign disclosure documents and provide written legal opinions or memoranda concerning transactions' legality and compliance with the law. Duties of both auditors and lawyers arise initially from the contract but include a regulatory overlay of professional standards.

Gatekeepers also include other transaction participants, such as investment banks and sometimes rating agencies, plus professionals working apart from transactions outside the enterprise, such as securities analysts and possibly stock exchanges and mutual funds (Lawrence A. Cunningham; 2004). Unlike auditors and lawyers, these gatekeepers do not typically act under any legal duty or vouch for the enterprise's statements about itself. Instead, they provide their own statements, such as a securities rating or a buy-sell recommendation. Professionals within this broad conception of gatekeepers thus differ significantly. Roles vary with product or service type and the information its buyers and users receive. Also varying are what professionals attest to or certify, such as fairness of financial statement assertions, the legality of a securities issuance, quality of a debt instrument. Accordingly, also varying are all other public policy aspects of their respective performance, including requirements, expectations, capacities, incentives and appropriate legal liability for failure. Indeed, auditors and attorneys reside at opposite ends of a gatekeeping spectrum: both put reputations and liability on the line, but lawyers take leading roles in deal design and disclosure preparation. In contrast, auditors take backup roles in reviewing and testing disclosure. Despite these differences, the term gatekeeper has assumed day-to-day usage, not only in the academic literature but in official regulatory pronouncements (Coffee, 2000).

The liability of corporate gate keepers for misstatements and omissions in the public disclosure documents of their corporate clients is an intensely controversial issue. After each wave of corporate upheaval, scrutiny invariably descends on business transactions and on apparent errors in corporate disclosures that accompanied them. Professionals often find themselves implicated for having facilitated transactions and having failed to avert disclosure errors. The focus on lawyers' conduct in the controversial merger of Bank of America and Merrill Lynch is a case in point (N.Y. Times, Oct. 13, 2009). Known as gatekeeper liability, the liability of professionals for the wrongs of their clients is premised on the ability of professionals to monitor and control their clients' conduct.

The imposition of potential liability provides powerful incentives for professionals to exercise their ability to monitor and control, thereby deterring corporate wrongs. While the professions oppose the notion of themselves as gatekeepers in line with the Report of the New York City Bar Association (2007), referring to the "lively debate" regarding whether lawyers should perform a gatekeeping function and insisting that lawyers act solely in the interests of their clients and do not owe any duty to the investing public. The U.S. federal securities laws nonetheless impose on their liability for the disclosure failings of their clients, and an extensive literature has developed to consider what liability rules would induce gatekeepers to take optimal precautions to deter client wrongs [John C. Coffee, Jr., (2004) Frank Partnoy, (2004); Assaf Hamdani, (2003); Reinier H. Kraakman, (1986) Frank Partnoy, Barbarians (2001)]

Corporate Gatekeeper Liability Theory

In the 1980s, Reinier Kraakman published two articles that expanded on the concept of "gatekeeper liability," which he defined as liability imposed on private parties who can disrupt misconduct by withholding their support from wrongdoers [Reinier H. Kraakman, (1986); Reinier H. Kraakman, (1984)]. This support—which might include a specialized good, service, or form of certification that is essential for a wrongdoer to succeed– "is the 'gate' that the gatekeeper keeps." Actual gatekeeper liability is designed to enlist the support of outside participants in the firm when controlling managers commit offences; the first requisite for gatekeeper liability is an outsider who can influence controlling managers to forgo offences. These professionals are less likely to risk their reputations over fraudulent or suspicious transactions as outsiders to the firm. Kraakman identified outside directors, accountants, lawyers, and underwriters as potential targets for gatekeeper liability strategies: they each have access to information about firm misconduct, they already perform a private monitoring service on behalf of the capital markets, and they face incentives that differ from those of managers (that is, they are likely to have less to gain and more to lose from firm misconduct than inside managers). Like other liability regimes, gatekeeping imposes costs; Kraakman examines whether legal rules can induce gatekeepers to prevent misconduct at an "acceptable price." After outlining possible costs of a gatekeeping model, Kraakman suggests ways to adjust these costs, such as limiting penalties that gatekeepers face for breach of duty or selecting prescribed duties for gatekeepers to undertake.

Finally, Kraakman canvasses other enforcement strategies and concludes that gatekeepers' response to misconduct by withholding support has significant advantages over other third-party enforcement duties. For Kraakman, legal duties should be imposed on intermediaries to act as gatekeepers in specific markets due to defects in the ability of parties to contract or ascertain the reputation of different intermediaries. Stephen Choi, however, argues that Kraakman's argument "fails to take into account the impact of different screening accuracies in the market, the incentives of intermediaries to invest in accuracy, the ex-ante response of producers to the possibility of certification, and potential market defects [Stephen Choi, (1998]." Choi argues that "gatekeeper liability is too heavy-handed a response" and instead advocates for less intervention through a system of self-tailored liability, a regime where "lawmakers may allow intermediaries to choose for themselves the specific duties that they will be held accountable . . .."

More recently, John C. Coffee, Jr. has popularized Kraakman's concept in the aftermath of Enron and other corporate scandals. Coffee has blamed such scandals on the failure of gatekeepers, who, he asserts, allowed management to engage in fraud [John C. Coffee, Jr., (2001-2002); John C. Coffee, Jr., (Oxford University Press 2006)]. Coffee has defined gatekeepers as independent professionals who act as reputational intermediaries, providing verification or certification services to investors. Gatekeepers have less incentive to deceive; therefore, the market views gatekeepers' assurances as more credible. Their credibility also stems from the fact that gatekeepers pledge their reputational capital. Theoretically, a gatekeeper would not sacrifice the reputational capital built over many years of performing services for a single client or a modest fee. However, there are instances where reliance on gatekeepers may be misplaced, such as: where there is a sudden decline in the deterrent threat facing gatekeepers, and they are thus more willing to take risks; where greater inducements are offered to gatekeepers to breach their duties; or where specific market scenarios lessen injury to a gatekeeper's reputation [John C. Coffee Jr (Columbia Law Sch. Ctr. for Law and Econ., Working Paper No. 191, 2001)].

Coffee's list of gatekeepers are auditors, credit rating agencies, securities analysts, investment bankers, and securities lawyers. Coffee concludes that the creation of excessive liability might cause the market for gatekeeping services to fail; instead, he advocates a shift towards stricter liability standards with a ceiling on gatekeeper liability adequate to deter misconduct. Whereas Coffee's proposed system is essentially regulatory, Frank Partnoy advocates a contractual system based on a percentage of the issuer's liability [Frank Partnoy Research Paper Series, Paper 5, 2004)]. Under Partnoy's proposed regime, gatekeepers would be strictly liable for an issuer's securities fraud damages under a settlement or judgment [Frank Partnoy (2001)]. Although gatekeepers would not have available to them due diligence defense, they could limit their liability by agreeing to and disclosing a percentage limitation on the scope of their liability. Authors such as Larry Ribstein oppose mandatory personal liability for professionals as a relatively ineffective way to encourage professional firms to perform their duties to clients and others [Larry Ribstein (2004)]. Ribstein argues that this liability is based on "an attenuated notion of responsibility and unrealistic assumptions about firm members' ability to monitor."

Furthermore, he suggests, imposing personal liability on professionals may increase agency costs between professionals and their clients, affect professional firm size, structure and scope; and reduce the desirable liability of the firm. Concerning auditors, Lawrence Cunningham prescribes a framework that uses financial statement insurance as an alternative to financial statement auditing backed by auditor liability [Richard W. Painter (2004). In his proposed framework, companies could opt for either model, subject to investor approval. Financial statement insurance policies would cover damages arising from audit failure— damages due to financial misstatements that auditors did not discover— replacing auditor and issuer liability.

In the broader context of the regulation of gatekeepers, Richard Painter stresses the balancing act that this type of regulation entails [Richard W. Paint (2004)]. Gatekeeper regulation, he argues, is pointless if it impairs information flow to gatekeepers: "Any improvement in gatekeeper response to the risk that comes from these rules has to be weighed against potential reduction in gatekeeper information and consequent impairment of gatekeeper evaluation of risk." In order to optimize the regulation of gatekeepers, he suggests that experimentation with divergent rules—for example, American and European rules for auditor and lawyer intervention, rather than convergence of legal rules, will facilitate the learning process.

Objective and Structure of the paper

Corporate gatekeeping functions as the government's mechanism to save the public interest entities from corporate failures. This paper examines the functions and operating procedures of different corporate gatekeepers within the financial system to operate an efficient capital market. To carry out an evaluation of the ideal roles and responsibilities of different gate keepers with differentiation of independent and dependent and sharing their respective liabilities in performing their professional assignments. To achieve the objectives, this paper is divided into nine sections. *Section one* begins with the adverse economic impact resulting from the corporate gatekeeping failures. Although the principles of corporate governance rules and procedures, code of ethics, rules of business binding for the individual and multiple gatekeepers from both independent-dependent ones fail to noncompliance, adversely affects the entity's business. The cumulative results of all gatekeeping failures cast massive costs to the market and national economy are described in this section. Information on the adverse effects of corporate scandals in the 21st century destroying huge shareholder equity is reported in this section. The common causes associated with corporate governance scandals are documented in this section. Different corporate gatekeeping failures are explained. Chronology stresses accounting scandals, legal opinion failures, audit firm failures, and estimates economic impact has been discussed.

The political-regulatory-market reaction, civil procedures and damage awards, damage caused by conflict-of-interest have been identified. Results of corporate failures and bank scandals resulting from the failures of corporate gatekeeping are discussed, including scenario Bangladesh. *Section two* discusses the existence corporate gatekeeper. This section highlights the transaction cost analysis, existence of multiple gate keepers, gate keeping webs and presents a brief history of corporate governance. *Section three* presents the differentiating roles and responsibilities of multiple gatekeeper's-such as independent and dependent: auditors, security analyst's attorneys, security underwriters, and IPO managers and valuation firms. *Section four* presents the regulatory regime of gatekeeper liabilities as of the directors, lawyers, auditors, credit rating agencies, financial analysts, and underwriters.

Section I: Economics of Corporate Scandals

Corporate Scandals

A corporate scandal is assumed as a set of questionable, unethical, and/or illegal actions that a person or persons within a corporation engage in (Source: *Business Dictionary. com*). The text following was extracted from the company's annual report that probably would be very well assessed by market agents regarding its corporate governance practices. It is, though, an extract of Lehman Brothers Annual Report 2007, the U.S. investment bank that collapsed just a few months after the release of this document. Like so many other similar cases, Lehman's case illustrates how companies that were role models in their top management practices collapsed due to different reasons such as wrong business decisions, risk management problems or fraud.

A corporate entity continues to be committed to industry best practices for corporate governance. The Board of Directors consists of ten members. Except for our CEO, all of our directors are independent. The audit, nominating, and corporate governance, finance and risk, and compensation and benefits committees are exclusively composed of independent directors. The Audit Committee includes a financial expert as defined in the SEC's rules. The board holds regularly scheduled executive sessions in which non-management directors meet independently of management. The board and all its committees each conduct a self-evaluation at least annually. Last year, overall director attendance at board and committee meetings was 96%. We have an orientation program for new directors. The corporate governance guidelines also contemplate continuing director education arranged by the company. The Corporate Entity Code of Ethics is published on our website. They have designed their internal control environment to put appropriate risk mitigates in place. The Corporate have a global head of risk management and a global risk management division that is independent. The company's management assessed the effectiveness of our internal controls. Based on our assessment, they believe that the company's internal controls are adequate over financial reporting. These controls have also been considered adequate by the independent auditors. Corporates also sponsor several share-based employee incentive plans.

Alexandre Di Miceli da Silveira (2013) School of Economics, Management and Accounting, the University of São Paulo in his working paper titled 'Corporate Scandals of the 21st Century: limitations of mainstream corporate governance literature and the need for a new behavioural approach' The number of corporate scandals associated with corporate governance problems in the first decade of this century is extensive. Wikipedia website, for instance, provides a list of more than 75 corporate scandals throughout this period. Their economic relevance is enormous. Table 1 below lists 23 selected high profile corporate scandals that, together, have destroyed an estimated US$750 billion of their shareholders' equity.

The initial argument is that governance scandals are the direct outcome of a standard set of fourteen interrelated factors detailed ahead, such as excessive concentration of power, ineffective board of directors, the passivity of investors, failure of gatekeepers, poor regulation, lack of the proper ethical tone at the top.

The central point is, nevertheless, is to argue that the root of the problem lies in the way the corporate governance concept has been internalized by most companies, investors and academics worldwide. Based on the work of orthodox economists (Jensen and Meckling, 1976; Fama and Jensen, 1983), corporate governance has been widely grounded on the agency theory perspective, which is concerned with creating ways to motivate one party (the "agent"), to act on behalf of another (the "principal"). As a result, the good governance of a business, a very complex subject, has been reduced to a mere set of incentive and control mechanisms to induce agents (managers) to make decisions in the best interests of their principals (shareholders).

The limitation of the debate to the theoretical framework of agency theory has at least two fundamental problems. First, the dissemination of corporate governance as a mere set of rewards and punishment mechanisms to be implemented in order to induce behaviours has left business leaders free to treat this complex and intrinsically human subject as a mere check- list of recommended practices to be fulfilled in order to be well perceived by the outside stakeholders. The Lehman Brothers' case is just one among several similar scandals in which there was a discrepancy between the essence of good governance–companies where decisions are made in their best long-term interest and in which people comply with the rules– and the way the governance practices were shown externally.

Second, agency theory–formulated almost forty years ago– is based on the *homo economicus* premise. This concept has been proved to be a minimal portrait

Table 1: Corporate scandals in the 21st Century destroying shareholders' equity US$751 b

#	Company	Country	Year	Estimated losses for share holders17	Did it involve fraud?	What happened?
1	Enron	USA	2001	$60 billion	YES	Accounting fraud, inflation of assets debt hidden in unique purpose entities kept off the balance sheet.
2	Xerox	USA	2001	$2 billion	YES	The company improperly booked nearly $3 billion in revenues between 1997 and 2000, leading to an overstatement of earnings of nearly $1.4 billion.
3	Adelphia	USA	2002	$2.5 billion	YES	The Rigas founding family borrowed $2.3 billion from the company that was not reported on its balance sheets. The firm overstated results by inflating capital expenses and hiding debt.
4	Tyco	USA	2002	$1 billion	YES	The Chairman and CEO Dennis Kozlowski and former CFO Mark H. Swartz were accused of diverting about $600 million from the company.
5	WorldCom	USA	2002	$186 billion	YES	The company overstated cash flow by booking $11 billion in operating expenses as capital expenses. It also gave about $400 million to its Chairman and CEO, Bernard Ebbers, in off-the-books loans.
6	Vivendi	France	2002	$13 billion	Uncertain	The company was accused of misleading information about its Ebitda growth and liquidity in its public filings and releases in order to meet targets in 2001. It accumulated huge debts due to an aggressive acquisition strategy prompted by its powerful CEO Jean Marie Messier.
7	Royal Ahold	Nether-lands	2003	$2 billion	YES	The company has overstated its profits by more than $1 billion as well as kept billions in debt off its balance sheet. It also pursued a failed aggressive strategy of acquisitions resulting in significant losses for its shareholders.
8	Parmalat	Italy	2003	$3 billion	YES	The company collapsed in 2003 with $14 billion in off-balance-sheet debts hidden in unique purpose entities, in what remains Europe's biggest bankruptcy.
9	Royal Dutch Shell	Netherlands / UK	2004	$1 billion	YES	The company has overstated its proved oil reserves by 23 per cent, resulting in profits being exaggerated by $276 million and profits embellished by an additional $156 million.

Continue

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19	Madoff	USA	2008	$65 billion	YES	Founder and CEO Bernard Madoff confessed that a Ponzi scheme had been running for decades at his asset management company, resulting in losses for his approximately 4,800 investors.
20	Satyam	India	2009	$3 billion	YES	Ramalingam Raju, Chairman and founder of Satyam (India's fourth-largest IT company), sent a letter to both the board of directors and to the country's regulator in which he confessed that the company had inflated its revenues by 76% and its profits by 97% in the previous year.
21	Panamericano	Brazil	2009	$2.5 billion	YES	The bank, which had successfully made its IPO just two years earlier, announced a hole of about $ 2.0 billion on its balance sheet, about 2.5 of its equity and half of its total assets.
22	BP	UK	2010	$45 billion	NO	An explosion at Deepwater Horizon, a drilling rig in the Gulf of Mexico connected to a well owned by the oil company BP, led to the largest accidental oil spill in history and the death of 11 workers. The firm has put aside $20 billion for compensation for damages incurred by victims of the spill. With previous safety incidents at the company, BP was accused of negligence regarding its operational risk management practices.
23	Olympus	Japan	2010	$7 billion	YES	The company concealed losses by paying $687 million to advisers on acquisitions. The company is also accused of siphoning another $1.5 billion through offshore funds.
	Total Estimated losses		$751 billion			

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of human nature by numerous recent researches (presented ahead) in different fields such as sociology, psychology, neuroscience, behavioural economics. Specifically, these studies have consistently shown that people are not rational, exclusively selfish, or interested in breaking rules depending on their relative economic benefits, as predicted by the *homo economicus* concept. Since this accumulated knowledge in other fields cannot be ignored, a rethink of the corporate governance concept is needed in light of these works.

As a result, it is argued that a new behavioural approach to corporate governance focusing on the psychological aspects of human beings inside organizations shall emerge. This new approach should be based on at least three main components ignored by agency theory: 1) the systematic focus on the mitigation of cognitive biases in managerial decisions; 2) the continuous fostering of employee and executives awareness towards the promotion of unselfish cooperative behaviours; and, 3) the reduction of the likelihood of frauds and other dishonest acts through new corporate strategies developed after a deeper understanding of their psychological motivations. This new approach does not dismiss the importance of incentive and control mechanisms recommended by the agency theory. Such mechanisms remain relevant but should not be seen as sufficient for well-governed companies. Expanding the corporate governance literature beyond agency theory towards a behavioural approach should be seen as crucial to reducing the emergence of new corporate scandals in the coming years.

Information on corporate governance relates with different fields of knowledge that provide complementary theoretical frameworks to agency theory, such as the kinds of literature of trust in organizations (Noreen, 1988; Mayer et al. 1995; Schoorman et al., 1996; Bower et al., 1997; De Dreu et al., 1998; Zaheer et al., 1998; Becerra and Gupta, 1999 and 2003; Sundaramurthy and Lewis, 2003; Cadwell and Karri, 2005), stewardship theory (Donaldson and Davis, 1991; Davis et al., 1997; Arthurs and Busenitz, 2003; Hernandez, 2012), and intrinsic motivation (Deci and Ryan, 1985; Frey and Jegen, 2001; Fehr and Falk, 2002; Kolev et al. 2012). Trust literature criticizes agency theory's pessimistic assumptions about human behaviour pointing out that this approach precludes trust and cooperation, crucial elements for successful organizations. It argues that corporate agents may show an attitude of trust and cooperation depending on contextual and personal factors, therefore not always behaving selfishly. Overall, this literature considers trust as an efficient mechanism to maximize the principal's utility. Stewardship theory views executives as "stewards" of the organization who are motivated to act responsibly based on an assumption of trust. It considers that managers obtain greater utility when developing a collaborative approach than when behaving selfishly, primarily when they identify with organizational values and goals. The literature on motivation points out that non- pecuniary motives shape human behaviour, including intrinsic pleasure arising from work, the desire to obtain social approval and the sense of reciprocation. It also contends that extrinsic rewards such as those emphasized by agency theory may undermine the role of intrinsic rewards on motivation and increase an agent's opportunistic behaviour.

The above also fits in an emerging line of research that criticizes agency theory's simplistic and inflexible assumptions about human behaviour and the narrowness of its predictive validity (Tirole, 2002; Charreaux, 2005; Van Ees et al., 2009; Cuevas-Rodríguez et al., 2012; Martin et al., 2012; Wiseman et al., 2012). Overall, these works call for new approaches toward corporate governance by widening the agency concept through a behavioural perspective. It is believed that this paper contributes to this literature by prescribing three specific areas of concentration for the emergent behavioural approach to corporate governance based on an analysis of corporate scandals from the earlier 21st century and the fragilities of the homo economicus premise evidenced by numerous recent works.

Cost of Corporate Gatekeeping Failures

After the stock market peaked in August 2000 and the technology-driven bull market ended, the financial markets started a steady decline. A short national recession began in March 2001 and ended in November 2001, with the gross domestic product declining until the fall. The market plunge deepened in the wake of the September 2001 terrorist attacks; however, a rally began in late 2001 as economic data showed that the national economy was not falling into a deeper recession. In early 2002 the economic prospects appeared to be improving, and a USA Today survey of investment strategists published in January of that year showed expectations of a modest market gain for the year. The markets did continue to rise until March 2002, by which point the public focused on the numerous evolving corporate scandals that then drove markets sharply lower through the summer. During this period—between mid-March and mid-July—the markets declined by almost 28 per cent. Part of this decline was related to data showing that neither corporate profitability nor the overall economy made a significant comeback. Just as markets appeared to be stabilizing at the end of 2002, they began to fall again due to concerns over a war with Iraq which led to the third consecutive year of market declines as the Standard and Poor's 500 Stock Index fell more than 20 per cent for the year. Concerns about military conflict continued to pull the market down in early 2003, although markets rallied briefly in March during the early stages of the war. As the war progressed, markets

Table 2: Common causes associated with corporate governance scandals

Type of Cause associated with Corporate Scandals	Common Cause	This cause is manifested when…
Fundamental Cause	Excessive concentration of power	Corporate decisions tend to come from the single views of specific individuals without the appropriate counterbalances.
	Ineffective Board of Directors	Boards do not satisfactorily perform their role of monitoring managers and providing the right strategic direction.
	Passivity of investors	Investors do not correctly exercise their role as active shareholders and end up wrongly rewarding firms with unsustainable practices by inflating their stock prices.
	Failure of gatekeepers	Reputational intermediaries such as auditors, stock analysts, credit rating agencies, attorneys, investment banks and consultants who pledge their reputational capital to vouch for information that investors cannot verify fail in their duties.
	Poor Regulation	Poor or non-existent regulation allows the occurrence of governance problems.
Mediating Cause	Illusion of success of the business	People inside and outside the organization come to believe that the company is an absolute success, ignoring contrary evidence and generating a feeling of invincibility.
	Internal atmosphere of greed and arrogance	An internal atmosphere of euphoria and hubris creates an inner sense of superiority to people outside the company.
	Lack of ethical tone at the top	Leaders fail to promote high ethical standards within their organizations, not treating the issue as something essential and priority.
	Corporate governance seen as a marketing tool	The company seeks to meet the check-list of recommended governance practices without embracing the theme at its core prior to the emergence of the scandals. Three corporate statements below provide examples of this: *"Enron Values: 1) Communication: we must communicate. 2) Respect: we treat others as we would like to be treated ourselves. 3) Integrity: We work with customers and prospects openly, honestly and sincerely. 4) Excellence: We are satisfied with nothing less than the very best in everything we do." – Enron Annual Report 2000. "We are committed to being an active and responsible member of every community where we do business worldwide, and we have set the goal of becoming best-in-class in corporate governance, business practices, sustainability and corporate citizenship… We believe that an unwavering commitment to corporate responsibility is vital for our long-term success. That is why we go to great lengths to balance business, ethical, environmental and social concerns… We are committed to financial transparency, compliance with the financial*

Continue

Type of Cause associated with Corporate Scandals	Common Cause	This cause is manifested when…
		Reporting requirements of German stock corporation law and U.S. Capital market regulations, and open communication with our shareholders. Binding rules and guidelines ensure that our dealings with business partners are ethical and adhere to all relevant legal requirements" – Siemens Annual Report 2005."Safety, people and performance, and these remain our priorities. Our number one priority was to do everything possible to achieve safe, compliant and reliable operations. Good policies and processes are essential, but, ultimately, safety is about how people think and act. That is critical at the front line, but it is also true for the entire group. Safety must inform every decision and every action. The BP operating management system turns the principle of safe and reliable operations into reality by governing how every BP project, site, operation and facility is managed. Our work on safety has been acknowledged inside and outside the group" – BP Report 2008.
Immediate Cause	Overexpansion of the business	Excessive growth of the company in the years immediately preceding the governance problems, primarily via acquisitions, contribute to the scandal.
	Biased strategic decisions	Unintentionally bad top-level strategic decisions are made due to cognitive biases such as overconfidence, groupthink, information cascades.
	Inflated Financial Statements	The company intentionally publishes doctored financial statements, often inflating its profits or hiding its debts.
	Weak internal controls	The main components of a sound internal control system are missing, such as an adequate control environment, effective risk management and control activities.
	Inadequate compensation system	A compensation system too aggressive and too connected to short-term goals substantially contributes to governance problems.

became more volatile in response to the daily reports of battlefield successes and failures. Nevertheless, by mid-April, the military conflict appeared to be winding down, and the financial markets had begun to advance again, although there were fluctuations due to fiscal developments, domestic economic news, and corporate profitability reports. The markets were still moving forward in mid-August 2003.

In general, the performance of the financial markets contributes to the wealth of individuals. Increased wealth occurs with the sale of a financial instrument and the realization of a capital gain. However, increases in the financial markets create unrealized paper wealth that makes individuals feel better off—known as the "wealth effect." Over time, as households feel they have more money, they gradually increase their consumption to match their perceptions. Likewise, as households see their financial holdings become less valuable, they feel poorer and modify their spending behaviour to deal with this contingency. Because approximately half of all households in the own nation stock, movements in the financial markets can significantly impact actual and perceived wealth and significantly affect consumer spending, representing about two-thirds of the national economy. Rising financial markets also increase the ease with which businesses can access capital and lower the cost. It, in turn, helps fuel growth in business investment, which is necessary for continued productivity growth and expanding the economy. Thus, both businesses and consumers benefit from rising financial markets.

Corporate Gatekeeping failure resulting from Accounting Scandals

All was not rosy as the three decades starting from the 1940s through to the 1960s came to a close. Threatening clouds began to form over the accounting profession in the middle and latter 1960s. A dark shadow was cast on the accountancy profession during this time. Financial scandals burst onto the scene, raising questions about the performance of auditors. Trailing in the wake of these scandals, auditors found themselves as defendants in several highly publicized lawsuits.

Moreover, the accounting profession lost its prized authority to pronounce on generally accepted accounting principles (GAAP) to an independent body, with unfortunate ramifications for the vitality of professional discourse. Accounting scandals are political and/or business scandals that arise with disclosing financial misdeeds by trusted executives of corporations or governments. Such misdeeds typically involve complex methods for misusing or misdirecting funds, overstating revenues, understating expenses, overstating the value of corporate assets or underreporting the existence of liabilities, sometimes with the cooperation of officials in other corporations or affiliates.

In public companies, this type of "creative accounting" can amount to fraud, and investigations are typically launched by government oversight agencies, such as the Securities and Exchange Commission (SEC) in the United States. It is reasonably easy for a top executive to reduce the price of his/her company's stock – due to information asymmetry. The executive can accelerate accounting of expected expenses, delay accounting of expected revenue, engage in off-balance-sheet transactions to make the company's profitability appear temporarily poorer, or promote and report severely conservative (e.g. pessimistic) estimates of future earnings. Such seemingly adverse earnings news will be likely to (at least temporarily) reduce share price. (This is again due to information asymmetry since it is more common for top executives to do everything they can to window dress their company's earnings forecasts). There are typically very few legal risks to being 'too conservative' in one's accounting and earnings estimates.

A reduced share price makes a company an easier takeover target. When the company gets bought out (or taken private) – at a dramatically lower price – the takeover artist gains a windfall from the former top executive's actions to surreptitiously reduce share price. It can represent tens of billions of dollars (questionably) transferred from previous shareholders to the takeover artist. The former top executive is rewarded with a golden handshake for presiding over the fire sale that can sometimes be in the hundreds of millions of dollars for one or two years of work. It is nevertheless an excellent bargain for the takeover artist, who will tend to benefit from developing a reputation of being very generous to parting top executives.

Similar issues occur when a publicly held asset or non-profit organization undergoes privatization. Top executives often reap tremendous monetary benefits when a government-owned or non-profit entity is sold to private hands. Just as in the example above, they can facilitate this process by making the entity appear to be in financial crisis – this reduces the sale price (to the purchaser's profit) and makes non-profits and governments more likely to sell. It can also contribute to a public perception that private entities are more efficiently run, reinforcing the political will to sell off public assets. Again, due to asymmetric information, policy makers and the general public see a government-owned firm that was a financial 'disaster' – miraculously turned around by the private sector (and typically resold) within a few years. Top executives cause not all accounting scandals. Often managers and employees are pressured or willingly alter financial statements for the personal benefit of the individuals over the company. Managerial opportunism plays a significant role in these scandals, and public accountants become part of these scandals through a certification process. For example, managers who would be compensated more for short-term results would report inaccurate information since short-term benefits outweigh long-term pension obligations.

Estimating the Economic Impact of Corporate Gatekeeping Failures

In the January 1999 Federal Reserve Bulletin, "Aggregate Disturbances, Monetary Policy, and the Macro economy: The FRB/U.S. Perspective," an article examined the relationships utilized in the Federal Reserve's national econometric model. This model is used to simulate the economy's behaviour after potential fiscal, and monetary policy actions are taken to respond to different disturbances in the national economy. The relationships cover a broad range of topics and issues, including employment, earnings, prices of goods and labour, and the cost of capital, rates of return on investment, consumption, behavioural adjustments, and expectations. Understanding the behaviour of the financial markets is a significant concern, as they affect rates of inflation, the resources available for business investment, the wealth of consumers, and their spending patterns. The relationships affecting household wealth and spending are critical, as consumer spending accounts for about two-thirds of economic activity in the nation. Paper covering the economic impact of accounting scandals (New York State Office of the State Comptroller 2003) examples of the model in use, such as evaluating the impact of interest rate changes, shifts in productivity, changes in the value of the dollar, increases in income, or price shocks. One of the conditions explored involves. Reserve economists found that a sustained 20 per cent decline in stock market wealth ultimately reduces the GDP by 0.4 per cent after one year, 0.8 per cent after two years, 1 per cent after three years, and 2.1 per cent after ten years. The declines in GDP occur because of reduced consumption spending (with the reduction in personal wealth) and less investment (with the rise in the cost of capital).

These relationships between stock market wealth and the economy were applied in an August 2002 policy brief by the Brookings Institution entitled *Cooking the Books: The Cost to the Economy*. As the financial markets deteriorated with continued news of corporate scandals and accounting irregularities through early 2002, the brief's authors sought to estimate how much the scandals contributed to a decline in wealth, and in turn, economic output (for a discussion of the authors' methodology. The decline caused by the scandals would be part of the much more significant decline in wealth—and reduction in GDP—arising from the financial markets' decline from its 2000 peak.

Using the Federal Reserve's relationships between changes in stock market wealth and the economy, Brookings estimated that the corporate scandals would reduce the GDP by $35 billion, or 0.34 per cent, in the first year, assuming that

A chronology of stress on Accounting Scandals

Company	Year	Audit Firm	Country	Notes
Associated Electrical Industries, after being acquired by General Electric Company plc	1967		United Kingdom	
Pergamon Press	1969		United Kingdom	
Lockheed Corporation	1976		United States	
Nugan Hand Bank	1980		Australia	
ZZZZ Best	1986		United States	Ponzi scheme run by Barry Minkow
Barlow Clowes	1988		United Kingdom	Gilts management service. £110 million missing
MiniScribe	1989		United States	
Polly Peck	1990		United Kingdom	
Bank of Credit and Commerce International	1991		United Kingdom	
Phar-Mor	1992	Coopers & Lybrand	United States	mail fraud, wire fraud, bank fraud, and transportation of funds obtained by theft or fraud
Informix Corporation	1996	Ernst & Young	United States	
Sybase	1997	Ernst & Young	United States	
Cendant	1998	Ernst & Young	United States	
Waste Management, Inc.	1999	Arthur Andersen	United States	Financial misstatements
Micro Strategy	2000	PWC	United States	Michael Saylor
Computer Associates	2000	KPMG	United States	Sanjay Kumar
Lernout & Hauspie	2000	KPMG	Belgium	Fictitious transactions in Korea and improper accounting methodologies elsewhere
Xerox	2000	KPMG	United States	Falsifying financial results
One.Tel	2001	Ernst & Young	Australia	
Amir-Mansour Aria	2011	IAO (Audit organization) and other Audit firms	Iran	Business Loans Without Putting any Collateral and financial system financial transactions among banks and
Bank Saderat Iran	2011	IAO (Audit organization) and other Audit firms	Iran	Getting a lot of Business Loans Without Putting any Collateral
Enron	2001	Arthur Andersen	United States	Jeffrey Skilling, Kenneth Lay, Andrew Fastow

Contination

Company	Year	Audit Firm	Country	Notes
Swissair	2001	Price water house Coopers	Switzerland	
Adelphia	2002	Deloitte & Touche	United States	John Rigas
AOL	2002	Ernst & Young	United States	Inflated sales
Bristol-Myers Squibb	2002[20][26]	Price water house Coopers	United States	Inflated revenues
CMS Energy	2002[20][27]	Arthur Andersen	United States	Round trip trades
Duke Energy	2002[20]	Deloitte & Touche	United States	Round trip trades
Dynegy	2002	Arthur Andersen	United States	Round trip trades
El Paso Corporation	2002	Deloitte & Touche	United States	Round trip trades
Freddie Mac	2002	Price water house Coopers	United States	Understated earnings
Global Crossing	2002	Arthur Andersen	Bermuda	Network capacity swaps to inflate revenues
Halliburton	2002	Arthur Andersen	United States	Improper booking of cost overruns
Homestore.com	2002	Price water house Coopers	United States	Improper booking of sales
ImClone Systems	2002	KPMG	United States	Samuel D. Waksal
Kmart	2002	Price water house Coopers	United States	Misleading accounting practices
Merck & Co.	2002	Price water house Coopers	United States	Recorded co-payments that were not collected
Merrill Lynch	2002	Deloitte & Touche	United States	Conflict of interest
Mirant	2002	KPMG	United States	Overstated assets and liabilities
Nicor	2002	Arthur Andersen	United States	Overstated assets, understated liabilities
Peregrine Systems	2002	KPMG	United States	Overstated sales
Qwest Communications	2002	1999, 2000, 2001 Arthur Andersen 2002 October KPMG	United States	Inflated revenues

Contination

Company	Year	Audit Firm	Country	Notes
Reliant Energy	2002	Deloitte & Touche	United States	Round trip trades
Sunbeam	2002	Arthur Andersen	United States	Overstated sales and revenues
Symbol Technologies	2002		United States	Overstated sales and revenues
Tyco International	2002	Price water house Coopers	Bermuda	Improper accounting, Dennis Kozlowski
WorldCom	2002	Arthur Andersen	United States	Overstated cash flows, Bernard Ebbers
Royal Ahold	2003	Deloitte & Touche	United States	Inflating promotional allowances
Parmalat	2003	Grant Thornton SpA	Italy	Falsified accounting documents, Calisto Tanzi
HealthSouth Corporation	2003	Ernst & Young	United States	Richard M. Scrushy
Nortel	2003	Deloitte & Touche	Canada	Distributed ill-advised corporate bonuses to top 43 managers
Chiquita Brands International	2004	Ernst & Young	United States	Illegal payments
AIG	2004	Price water house Coopers	United States	Accounting of structured financial deals
Bernard L. Madoff Investment Securities LLC	2008	Friehling & Horo witz	United States	Massive Ponzi scheme.[44]
Anglo Irish Bank	2008	Ernst & Young	Ireland	Anglo Irish Bank hidden loans controversy
Satyam Computer Services	2009	Price water house Coopers	India	Falsified accounts
Lehman Brothers	2010	Ernst & Young	United States	Failure to disclose Repo 105 transactions to investors
Sino-Forest Corporation	2011	Ernst & Young	Canada-China	
Olympus Corporation	2011	Ernst & Young	Japan	*tobashi* using acquisitions
Autonomy Corporation	2012	Deloitte & Touche	United States	Subsidiary of HP

stock markets did not deviate significantly from their levels of July 19, 2002. This base estimate assumed that about 60 per cent of the 28 per cent decline in the stock market between March 19, 2002, and July 19, 2002, resulted from the corporate scandals. Using their alternate lower and upper interval assumptions about the amount of the market decline attributed to the corporate scandals (30 per cent and 90 per cent), the Brookings authors then estimated that the range of the economic impact of scandals could vary in the first year from a lower limit of $21 billion, or 0.2 per cent of the GDP, to an upper limit of $50 billion or 0.48 per cent of the GDP.

It is important to note that these estimates only represent the scandals' contribution to a decline in wealth and output. The declines in the financial markets due to the corporate scandals represent only part of the overall decline in the market since the end of the bull market in 2000. As noted earlier, the financial market decline between its August 2000 peak and its February 2003 low amounted to almost 44 per cent or 648 points. Looking at the cumulative impact of three years of stock market declines and using the Federal Reserve's relationships between wealth and economic output, we estimate that about $140 billion worth of GDP has been lost during this period. The corporate scandals represent a significant component of the lost output.

Brookings also looked at an alternate approach to check their estimates. Comparing the actual mid-2002 market performance with the expectations of Wall Street investment strategists as reported in a USA Today poll at the start of the year, Brookings found that the July 19 close was about 30 per cent below the mean projection for the survey. Applying their low, base, and high assumptions about the amount that the scandals contributed to the market decline, using the Federal Reserve relationships, they calculated an alternate impact on GDP in the range of $19 billion to $57 billion. Expectations for GDP growth in the national economy during 2002 diminished as the year progressed. The Blue Chip Economic Consensus Forecasts had plunged in the wake of the September 2001 terrorist attacks but were gradually recovering; they reached 2.8 per cent by May 2002. Amid rising public awareness of the corporate scandals and growing concerns that the economy may have stalled, these forecasts fell to 2.3 per cent in August 2002 and remained near there for the rest of the year. During that time, there was an equivalent drop in the forecast for 2003, which showed that the expected impact would continue into the following year. The 2003 outlook continued to drop over the remainder of the year as war worries began to build.

An important consideration about these estimates, emphasized in both the Federal Reserve and Brookings Institution papers, is that a decline in wealth must be maintained for an extended period to realise the projected impact on the economy fully. To the extent that financial markets recover, they will again contribute to a gain in wealth. Over time, as businesses and consumers feel that the increase in wealth is genuine and not likely to reverse shortly, they will modify their behaviour toward increased consumption and investment. It would help diminish the long-term effect of the original decline in wealth.

Political and regulatory Reaction to the Corporate Gate Keeping Failures

The political and regulatory response to the scandals had two branches: criminal proceedings against companies and individuals accused of acting negligently or fraudulently in the past and legislative proceedings aimed at reducing the incidence of future negligence and fraud.

Criminal Proceedings: Criminal law is created, administered, and prosecuted by governments. In criminal law, defendants found guilty in securities cases can be punished with prison sentences, fines, asset seizures, or disbarment from practice. Additional costs borne by defendants include legal fees, reputation, loss of employment prospects, time, and stress on themselves and their families. The United States initiated criminal proceedings against a range of individuals and corporations involved in the accounting scandals.

Legislative Proceedings: The Sarbanes-Oxley Act 2002. The legislative response to the accounting scandals was straight out of the Stigler (1964, 1971) - Peltzman (1976) playbook. Applying Peltzman's (1976) theory, Watts and Zimmerman (1986, pp. 229-231) argue that the political process has an incentive to avoid perceived responsibility for investor losses and that legislative action is a political attempt to escape blame. Spurred on by the White House and the press, by declining US prestige, by a declining dollar, by declining share prices, by the events of September 11, and by an economic downturn, Congress rushed to pass the Sarbanes-Oxley Act. The House vote was 423-3, and the Senate vote was 99-0. President George W. Bush immediately signed it into law on 30 July 2002.

Market Reaction to the Corporate Gate Keeping Failures: We do not have the opportunity to observe a world in which market or political/regulatory processes operate independently, so it is only possible to conjecture the response of a completely unregulated marketplace would have been. Even if we could observe market forces separately, Hayek (1945, 1988) continually reminds us that they are complex, dispersed, difficult to identify fully, and easy to underestimate. Nevertheless, it is possible to identify some market mechanisms that operated and attempt an assessment of their effectiveness. In parallel to the political and regulatory response to the scandals, the market response had two branches:

penalties assessed against those accused of past negligence or fraud and adaptive changes in institutional arrangements aimed at reducing its future incidence.

Civil Proceedings and Damages Awards for Corporate Gate Keeping Failures: While the criminal prosecution cases attracted most worldwide public attention, a blizzard of private litigation was launched against firms, managers, board members, audit firms, insurance companies, and any parties alleged to have been complicit in financial reporting malpractices. Civil litigation is prosecuted by private litigants who allege the actions of others harmed them. Litigants included stockholders, creditors, bondholders, employees, labour unions and pension plans. Defendants found guilty in securities cases are punished by the courts awarding monetary compensation to the litigants for the damages they have incurred due to the harmful actions. Unlike criminal proceedings, civil litigation is a private, market process of enforcing explicit and implicit contracts between firms, managers, auditors, creditors, shareholders and other contracting parties.

Reputation, Bonding and Insurance Effects of Corporate Gate Keeping Failures: Reputation effects have long been viewed as a robust market mechanism, imposing penalties on parties found to have acted up. Karpoff and Lott (1993) document substantial reputational costs to firms committing fraud generally. In the audit industry, the audit firm's reputation for independent, professional work is central to performing its economic role of verifying financial statements for use by uninformed outsiders. DeAngelo (1981) argues that large audit firms, like Arthur Andersen before its demise, earn substantial quasi-rents, which they stand to lose if they perform poor-quality work. Research has shown that audit firm reputation is associated with audit fee premiums (Simunic, 1980; Francis, 1984; Francis and Simon, 1987; Palmrose, 1986; Craswell, Francis and Taylor, 1995) and with the market valuation of their clients (Kellogg, 1984; Beatty, 1989). Palmrose (1986, 1987) links litigation risk to audit quality. Events that could reduce auditors' reputations, such as regulatory action or private litigation against them, are associated with stock price reductions for clients (Loebbecke *et al.*, 1989; Firth, 1990; Moreland, 1995; Franz *et al.*, 1998), with loss of clients (Firth, 1990; Wilson and Grimlund, 1990), and with reductions in audit fees (Davis and Simon, 1992).

Audit Firm Conflicts of Interest of Corporate Gate Keeping Failures: Part of the adverse public and political reaction to the accounting scandals was the revelation that audit firms conduct substantial non-audit work for their clients, thereby creating at least the appearance of a conflict of interest. Conflicts of interest were given at least partial blame for the scandals by the press (e.g., Herrick and Barrionuevo, 2002) and by some researchers (e.g., Coffee, 2002). In response to the adverse reaction, Sarbanes-Oxley prohibits the type of non-audit work by the company's auditor that would compromise its independence in performing the audit. Examples include the provision of bookkeeping and internal audit services, where as an external auditor, it would, in effect, be auditing its work. The Act sensibly does not prohibit other services, such as tax advice. There are several reasons to doubt whether this statutory prohibition was advisable or necessary. *First*, the hypothesis that audit firms allow their audit judgment to be compromised by non-audit revenues does not make as much sense as one might initially believe. Why would audit firms attach such a low value to their reputations as independent auditors? Why would they willingly place the entire capital of the partnership at risk by cutting audit quality? The hypothesis might seem to make sense if one accepted the premise that they were earning quasi-rents on non-audit business but none on audits. They then might seem to have little to lose by reducing audit quality to attract lucrative non-audit engagements. However, even if one accepted that premise, the argument still would make no sense. Why would they willingly risk losing quasi-rents on their non-audit work by gaining a reputation for poor audit quality? Would not the existence of quasi-rents earned from non-audit business imply that firms with substantial non-audit revenues put up a more powerful bond to guarantee their audit quality and hence are less likely to compromise it? The motives of audit firms are not as clear-cut as many commentators have portrayed them.

Second, if client firms view their reputations are valuable assets, one would expect them to voluntarily avoid contracting for the audit firm to provide any non-audit services that could compromise audit independence. Kinney, Palmrose and Scholz (2004) test this hypothesis, using the need to subsequently restate previously issued financial statements as indicators of low quality financial reporting and auditing. They do not find a pervasive relation between non-audit.

Third, one should not lose sight of the benefits non-audit work brings to clients. The accounting firms have built substantial businesses in consulting, systems, taxation, and litigation support. They have done so in a competitive market. Their comparative advantage appears to lie in a combination of training, cost and specific client and industry knowledge. Excessive restrictions on using their comparative advantage can impair economic efficiency.

Fourth, there is substantial evidence that non-audit business does not lead to audit firms compromising their audit judgments. If anything, the evidence in these studies points to non-audit revenues being associated with less favourable audit treatment, most likely because financially weaker firms exhibit greater use of consultants and also receive harsher audit opinions. *Fifth*, before the passage of Sarbanes-Oxley and in response to the scandal-induced *perception* that conflicts of interest influenced audit judgment, all but one of the major accounting firms decided to cease providing internal audit and audit-related technology consulting services to clients where they are the external auditor. This decision was made by Arthur Andersen (still operating at the time), Ernst & Young, KPMG, and Price water house Coopers. Deloitte & Touche alone among the then Big Five audit firms resisted the change, arguing with some justification that the issue was one of perception arising from "the level of hyperbole in the debate. Nevertheless, perceptions do matter, and it is not clear that Deloitte would have been able to hold out on this position for long. In any event, Sarbanes-Oxley codified the standard that the market had moved mainly to in response to the scandals.

Failure of Corporate Gate Keeping Resulted in Bank Scandals Show How Powerless we Are

1. In September 2013, JP Morgan Chase announced they would pay $970 million in fines to US and British regulators and made a rare admission of wrongdoing over action involved in last year's "London Whale" trading scandal. Additionally, the Consumer Financial Protection Bureau announced that JPMorgan Chase and Chase Bank have agreed to pay refunds totalling $309 million to more than 2.1 million customers after the Office of Comptroller or Currency "found that Chase engaged in unfair billing practices for certain credit card 'add-on products' by charging consumers for credit monitoring services that they did not receive."
2. The LIBOR scandal came into focus last year when it was discovered that banks were allegedly falsely inflating or deflating their interest rates to profit from trades or give the impression that they were more creditworthy than they were. The Libor is an average interest rate calculated through submissions of interest rates by the Central Bank in London, which means that banks allegedly were lying A LOT to sound better. The LIBOR underpins about $350 trillion in derivatives, a type of security that gains its value from the value of underlying entities–i.e., interest rates. It is allegedly a massive price-fixing scandal, arguably the biggest ever.
3. 2009, Wells Fargo Bank agreed to pay $175 million to settle accusations that its brokers discriminated against black and Hispanic borrowers during the housing boom.
4. This past summer, 21-year-old Bank of America Intern Moritz Erhardt was found dead in the shower. Erhardt had reportedly worked three consecutive all-nighters. Numerous outlets have indicated this is not

uncommon with banking interns and is part of an unofficial "hazing culture" where interns work around the clock.

5. 2012, UBS lost $2.3 billion after 32-year-old Kweku Adoboli went rogue and made several "vast and risky bets." Britain's financial regulator fined UBS after determining that its "internal controls were inadequate." Adoboli was sentenced to seven years in prison.
6. 2010 was reported that a Kabul Bank took $861 million out of war-ravaged Afghanistan in a massive fraud cantered around fake loans to 19 individuals and companies. A bailout of the bank costs the equivalent of 5 per cent of Afghanistan's GDP, ensuring this is one of the world's most extensive banking failures of all time.
7. August 2012, the Senate reported that HSBC's lax anti-money laundering policies allowed Mexican drug money and Iranian terrorist to enter the U.S. and gain access to U.S. dollar liquidity over the past few years. Forbes reported that "HSBC actively circumvented rules designed to 'block transactions involving terrorists, drug lords, and rogue regimes.'" They were ordered to pay US and British regulators $1.9 billion.
8. December 2012, British bank Standard Chartered paid $327 million in fees to U.S. regulators over alleged illegal transactions with Iran, Sudan, Libya, and Burma. In August 2012, Standard Chartered paid $340 million to a New York state regulator over similar allegations. The NY Department of Financial Services noted that the British bank colluded with the Iranian government for almost an entire decade, reaping hundreds of millions of dollars in fees through thousands of secret transactions, coming to a total of $250 billion.
9. Early/mid-2000's financial services firm Lehman Brothers borrowed significant amounts to fund its investing, a process known as leveraging. A significant portion of this investing was in housing-related assets, making it vulnerable to a downturn in that market. When that happened, Lehman was forced to file for bankruptcy–it remains the largest bankruptcy filing in history, with Lehman holding over $600 billion in assets.
10. March 2010, a report from Anton R. Valukas, the Bankruptcy Examiner, called attention to the use of Repo 105 transactions to boost Lehman Brothers' apparent financial position around the date of the year-end balance sheet. Attorney general Andrew Cuomo later filed charges against the bank's auditors Ernst & Young in December 2010, alleging that the firm "substantially assisted… a massive accounting fraud" by approving

the accounting treatment. A month later, a New York Times story revealed that Lehman had used a small company named Hudson Castle to move several transactions and assets off Lehman's books as a means of manipulating accounting numbers of Lehman's finances and risks.

11. Fall of 2010, major U.S. lenders such as JP Morgan Chase, Ally Financial (GMAC), and Bank of America suspended judicial and non-judicial foreclosures across the United States over the potentially fraudulent practice of robo-signing. It became known as "foreclosuregate," which refers to "the widespread epidemic of improper foreclosures initiated by large banks and other lenders."
12. In June 2009, the SEC charged Angelo Mozilo, the former executive of mortgage lender Countrywide Financial with fraud for allegedly misleading investors about the quality of Countrywide's loans. Among other things, this included tens and billions of dollars of risky subprime and adjustable-rate mortgages. Before Countrywide was sold to Bank of America, it had been the largest NY mortgage lender. In 2010 Mozilo agreed to pay \$67.5 million in fines and was hit with a lifetime ban from serving as an officer/director of any public company.
13. In 2009 a grand jury accused Raj Rajaratnam, founder of one of the world's most significant hedge funds called "the Galleon Group", of using a network of company insiders to tip him off to information that netted \$20 million in illegal profits over three years. He was found guilty in May 2011 and was sentenced to 11 years in prison.
14. In October 2009, the SEC demanded a jury trial on claims that Bank of America misled shareholders about \$3.6 in bonuses paid to Merrill Lynch employees before the companies merged. According to Reuters, "U.S. District Judge Jed Rakoff was disturbed that the SEC did not require the bank to disclose the names of executives and lawyers who vetted the bonuses."
15. In December 2008, it was revealed that the Wall Street Firm Bernard L. Madoff Investment Securities LLC was a massive Ponzi scheme–meaning it paid back investments with money from other investors instead of actual profit. Prosecutors estimated the size of the fraud to be \$64.8 billion. Not too shabby.

Section II: Existence of Corporate Gatekeepers

Theoretically, the services of gatekeepers can be performed from within or outside the corporation. Legally, corporations undertaking business transactions must have their accounts audited by an external auditor but are otherwise free to choose

Cost of Scams in the banking sector due to Corporate Cate Keeping in Bangladesh

Banks	Key irregularity	Measures taken
Sonali, Janata, NCC, Dhaka, Mercantile Bank (2008–2011)	BDT 40.89 million (approximately US$ 0.58 million) bank loan with forged land documents (Dhaka Tribune, 28 August 2013)	On 1 August 2013, Anti-Corruption Commission (ACC) filed cases against Sonali Bank, Fahim Attire, and certain individuals; BDT 10 million (US$ 0.13 million) was given back to Sonali Bank (Dhaka Tribune, 2 August 2013; New Age, 2 August 2013; The Daily Star, 2 August 2013)
Basic Bank (2009–2013)	BDT 45,000 million (approximately US$ 604 million) with dubious accounts and companies (The Daily Star, 28 June 2013)	In September 2015, ACC filed 56 cases against 120 people (New Age Bangladesh, 13 August 2018)
Sonali Bank (2010–2012)	BDT 35,470 million (approximately US$ 472 million) embezzled by Hall Mark and other businesses (The Daily Star, 14 August 2012)	In October 2012, ACC filed 11 cases against 27 people (Dhaka Tribune, 11 July, 2018)
Sonali Bank (2010–2012)	BDT 35,470 million (approximately US$ 472 million) embezzled by Hall Mark and other businesses (The Daily Star, 14 August 2012)	In October 2012, ACC filed 11 cases against 27 people (Dhaka Tribune, 11 July, 2018)
Janata Bank (2010–2015)	BDT 100,000 million (approximately US$ 1.3 billion) appropriated by Crescent and AnonTex (Dhaka Tribune, 3 November 2018)	On 30 October 2018 the Enquiry Committee of Bangladesh Bank submitted a report (Dhaka Tribune, 3 November 2018)
Janata Bank, Prime Bank, Jamuna Bank, Shahjalal Islami Bank, Premier Bank (June 2011–July 2012)	BDT 11,750 million (approximately US$ 151 million) by Bismillah group and associates. (The Daily Star, 7 October 2016)	On 3 November 2013, ACC filed 12 cases against 54 people (The Independent, 11 September 2018)
AB Bank (2013–2014)	BDT 1,650 million (approximately US$ 21.2 million) (The Daily Star, 12 June 2018)	On 25 January 2018 ACC filed a case against the former chairman and officials of AB Bank (The Daily Star, 12 March 2018)
NRB Commercial Bank (2013–2016)	BDT 7,010 million (approximately US$ 90 million) of loan (New Age Bangladesh, 10 December 2017)	On 29 December 2016, the Bangladesh Bank appointed an observer to check irregularities (Dhaka Tribune, 7 December 2017)
Janata Bank (2013–2016)	BDT 12,300 million (approximately US$ 158 million) of loan scam (The New Nation, 22 October 2018)	In October 2018, Thermax requested to reschedule the loan, and Janata Bank's board endorsed it and sent it to the Bangladesh Bank (The Daily Star, 21 October 2018)
Farmers Bank (2013–2017)	BDT 5,000 million (approximately US$ 63.7 million) of fund appropriation by 11 companies (The Daily Star, 24 March 2018)	In January 2018, the Bangladesh Bank directed that an audit be conducted. In April 2018, ACC arrested four accused persons (The Independent, 11 April 2018)
Bangladesh Bank (5 February 2016)	BDT 6,796 million (approximately US$ 86.6 million) by international cyber hacking from the treasury account of Bangladesh Bank (The Daily Star, 5 August 2017)	On 19 March 2016, the Government formed a three-member investigation committee (The Daily Star, 5 August 2017)

Mirza Hassan, Syma Haque, Towhid Iqram Mamood, Salim Raihan (2020) Political Economy of Bank Governance in Bangladesh Institutional Diagnostic WP20/BDID[06] Source: Khatun (2018) whether to rely on the market for gatekeeping services. Typically, they choose to rely on external gatekeepers. Analysis of the question begins with Ronald Coase's seminal insight that a firm will make products or services internally until the costs of doing so exceed the costs of relying on the market (Ronald H. Coase, 1937). In applying this criterion to the market for gate keeping services, the firm will weigh production cost advantages of relying on the market against the transaction cost disadvantages of doing so. Transaction costs are the costs of searching for, contracting with, and monitoring the market providers of the services [(Don E. Waldman & Elizabeth J. Jensen, (1998); Oliver E. Williamson, (1985)].

In the gatekeeping context, corporations must also weigh the information cost advantages of relying on the market. The production cost advantages of relying on the market arise from economies of scale, scope, and experience. Economies of experience— the cost advantages resulting from the accumulated experience over an extended period, also known as "learning by doing"—can be substantial in industries involving complex, labour-intensive activities [(David Besanko & Ronald R. Braeutigam, 2008)]. For example, bankers will develop skills in structuring and negotiating transactions, in applying valuation techniques, and in conceiving business transactions [(Robert G. Eccles & Dwight B. Crane, (1988)]; lawyers will become more adept at negotiating and drafting underwriting and acquisition agreements, responding to regulatory hurdles, and conducting due diligence, a process involving the review of hundreds, even thousands, of documents, many of which adhere to standard forms.

Economies of scale—the decrease in production costs that occurs as production increases—may also be realized by relying on the market for gatekeeping services. With a sizeable transactional flow, gatekeeping firms will build up a greater reservoir of knowledge of transaction structures and standard form agreements [(Michele DeStefano Beardslee et al., Feb. 21, 2010)] and thus be able to provide their services more cheaply than could a corporation with a weaker transactional flow. The need for indivisible units, such as document management systems and physical libraries, the costs of which are invariable to the number of users, would also favour relying on external firms since unit costs would decrease as output (or the number of users) increases. Further cost advantages stem from the ability of external gatekeeping firms to absorb the risk of lumpy demand for professional services more effectively.

A key feature of gatekeepers is their role in economizing on the information costs due to information asymmetry between the two sides of a business transaction. In the context of a securities offering, where this role is most salient, investors face high costs associated with acquiring information to accurately value the assets to be transferred and greet a corporation's disclosures with caution, aware of its incentives to mislead. Gatekeepers certify that corporation's disclosures by associating themselves with a transaction by acting for the corporate issuer. Gatekeepers thus represent a response—either legal or market, depending on whether the gatekeeper's role is legally mandated—to the problem of information asymmetry [(Ronald J. Gilson, (1984)].

Gatekeeper certifications provide a measure of assurance to investors as to the accuracy of corporate disclosures, reducing the extent to which investors, fearing they will be sold "lemons," discount the value of the asset being sold [(George A. Akerlof, 1970)]. In metaphorical terms, gatekeepers are regarded as renting their reputations to corporations, a function that economizes on information costs (Ronald J. Gilson & Reinier H. Kraakman, (1984) and creates value for the relevant corporations. Gatekeepers thus function as so-called reputational intermediaries.

This reputational function of gatekeepers is one suited to the external gatekeeping firm. As an external firm, it can serve as a repeat advisor to corporations. Expecting to be engaged in future transactions to perform the certification role, an external gatekeeper will have strong reasons to build and preserve a reputation for diligence and honesty. In contrast, corporations will have weaker incentives and opportunities to build and preserve reputations since they usually undertake transactions infrequently [(Ronald J. Gilson & Reinier H. Kraakman, (1984)]. They also have direct financial stakes in transactions, weakening their incentives to certify disclosures accurately [(Margaret M. Blair et al., (2008)]. Thus, the certification function of gatekeepers also favours corporations relying on the market for gatekeeping services. The final piece to the analysis concerns transaction costs, which are the costs to corporations associated with searching for, contracting with, and monitoring providers of gatekeeping services. These costs are weighed against the production cost and information cost advantages of relying on the market for gatekeeping services. Transaction costs arise from both the difficulty of writing complete contracts and the opportunism of outside service providers. Incomplete contracts may fail to constrain opportunistic conduct fully, the consequences of which will be more severe when transactions involve greater asset specificity, are more frequent, and are more uncertain. When transaction costs associated with relying on the market exceed the cost advantages of doing so, a corporation will likely produce the necessary inputs internally. Assessing the transaction costs associated with relying on the market for gatekeeping services presents an empirical challenge. We may infer from the pervasive use of gatekeeping firms in business transactions that the cost advantages of relying on the market exceed the associated costs of transacting. This inference is supported by the observation that, for some business transactions, standardized practices and contracts have been developed that would reduce transaction costs [(Cox et al., 2005)]. Of course, the picture is more complicated than this: corporations do rely on the market for gatekeeping services, but their internal "deal teams" also provide some gatekeeping services [(Vipal Monga & Suzanne Stevens, 2009)]. Nevertheless, even the most sophisticated corporations continue to turn to external advisors for significant transactions and may even demand a greater breadth of advice from them than they have in the past.

Existence of Multiple Gatekeepers

Having decided to rely on the market for gatekeeping services for a transaction, corporations will turn to multiple distinct gatekeeping firms rather than a single multidisciplinary firm that bundles legal, accounting, financial, and other services. This phenomenon is the immediate result of legal regulation. The relevant professional bodies have "fought zealously to protect their professional autonomy" [(Ronald J. Gilson & Reinier H. Kraakman, (1984)], prohibiting their practitioners from forming multidisciplinary firms and preventing other professions from making incursions onto their turf. (John Flood, 2001). These measures may be explained as the product of demand for favourable regulation by the professions acting as political interest groups [(George J. Stigler, Richard A. Posner (1974)]. The legal profession, in its Model Rules of Professional Conduct, prohibits lawyers from forming partnerships or professionally associating with non-lawyers, including auditors and underwriters [(Model Rules of Professional Conduct (2009)]. Accountants are subject to strict rules preventing them from simultaneously providing auditing services and other services that may be seen to impair the auditor's independence of judgment (AIPCA 2004). An auditor cannot, for example, venture into the investment banking field, such as by underwriting a securities offering for one of its auditing clients. These rules requiring auditor independence were reinforced by provisions of the Sarbanes-Oxley Act of 2002. While the Financial Industry Regulatory Authority, the securities industry's self-regulatory body, does not similarly restrict the activities of investment banks, the rules of the legal and accounting professions, together with the legislative over-lay of the Sarbanes-Oxley Act, effectively prevent investment banks from providing auditing and legal services for business transactions [(the United States v. Arthur Young & Co., (1984)].

Whether the legal framework preventing the formation of multidisciplinary gatekeeping firms reflects economic forces or stands in opposition to them is more difficult to assess. One economic explanation for the lack of multidisciplinary firms is the concern among corporations about conflicts of interest that would afflict the independence of judgment of gatekeepers. While the provision of multiple products and services may provide economies of scale and scope, it also produces conflicts of interest that risk impair a gatekeeper's judgment and thus the certification role the gatekeeper performs. In an extreme case, one could imagine lawyers or auditors in a multidisciplinary gatekeeping firm acquiescing in corporate conduct (which they might otherwise oppose) to facilitate a transaction that would be particularly lucrative to the firm's investment banking unit. This tension between multi-product or multidisciplinary practice and the potentially adverse effects of conflicts of interest has been particularly evident in the accounting profession [(Frederic S. Mishkin, (9th ed. 2010)]. The concern stems from auditors' pressure to skew audit reports where doing so could win their firm other, more lucrative business, such as consulting work. Similar issues arise in the debate concerning the merits of financial conglomeration [(statement of Joseph E. Stiglitz, (2009)]. In the investment banking context, client concerns about conflicts of interest are manifested in corporations increasingly hiring so-called independent investment banks as "a counterpoint to the advice of integrated firms" (Philip Augar, (2005). Client concerns may also explain the failure of multidisciplinary firms, which arose in continental Europe from combinations of accounting and law firms, to break into advising on global securities offerings, a context in which the reputations of advisors are of considerable importance.

Cost advantages, or synergies, and conflicts of interest may well be two sides of one coin, a point suggested by the now-disgraced former securities analyst Jack Grubman, who was quoted as saying (before his ban from the securities industry), "What used to be a conflict [of interest] is now a synergy [(Arianna Huffington, June 6, 2002)]." Conflicts of interest afflicting gatekeepers, and the corresponding lack of independence, can impair a gatekeeper's reputation and the quality of its certification as to the accuracy of a corporation's disclosures. For this reason, doubt exists as to whether, if the existing legal barriers were removed, multidisciplinary firms would evolve and be relied upon by corporations undertaking business transactions.

While this issue need not be pursued for present purposes, it is sufficient to note that particular consequences associated with the multiple gatekeeper phenomenon, which are discussed next, are the immediate product of legal rules and might be alleviated if market forces were given more extraordinary reign.

The Gatekeeping Web

Various consequences flow from the multiple gatekeeper phenomenon. One is that the services performed by gatekeepers intersect, overlap, and complement one another. The boundaries among the skills that are "legal," "accounting", and "financial" are not delineated. [(James C. Freund, (1975); Milton C. Regan, Jr., (2005)]. The traditional distinctions among professionals have blurred and broken down and are likely to continue to do so. For example, business lawyers must know and use accounting concepts since they "affect the structuring of deals, their disclosure, the form and amount of consideration, and other aspects of negotiations and compliance [(Lawrence A. Cunningham, (2002)]." Today, investment bankers are tested on their knowledge of federal securities laws, corporate law principles, and other legal matters to receive industry certification. Still, each profession has particular areas of expertise and spheres of influence in transactions [(William Powers, Jr. et al., (Feb. 1, 2002)]. The professions can also be expected to vary in terms of the information they hold and their means of gathering information about their client. Accordingly, a gatekeeper may need to rely on the information or advice of another gatekeeper in order to perform its role.

Against this backdrop, it is unsurprising that optimally deterring securities fraud may require more than a single gatekeeper to take precautions. By extension, gatekeepers are more accurately envisioned as an interlocking and interacting web of protection against securities fraud than as a single guardian or even a series of guardians acting in isolation of one another, as portrayed by existing literature. A further consequence of the multiple gatekeeper phenomenon concerns the variability of the contours of the gatekeeping web. Where overlaps among the functions of gatekeepers exist, corporations may have less success with a strategy of shopping for gatekeepers, using them sequentially until finding one that acquiesces in corporate wrongdoing. On the one hand, the presence of multiple gatekeepers increases the likelihood of cross-checks and greatly complicates that strategy, diminishing its appeal.

On the other hand, the existence of multiple gatekeepers may lead each to become a mere functionary, responsible only for a limited portion of the transactional process and with correspondingly diminished knowledge of both the client and the nature of the transaction. This latter scenario relates to the deterioration of gatekeepers' capacity to monitor and control corporate conduct, potentially leading to gaps in gatekeeper oversight that permit corporate wrongdoing. It may even create incentives for gatekeepers to minimize their involvement in transactions, since doing so would allow them plausibly to deny knowledge of client wrongdoing—a relevant consideration when liability under Rule 10b-5, the broadest antifraud provision in the regulatory arsenal, as well as rules of professional responsibility, requires proof of scienter. This concern is borne out by the practice of professionals in providing opinion letters to clients (as to the accuracy of the corporation's disclosures) of heavily qualifying their assertions and narrowly defining their area of expertise and scope of involvement in the transaction. If securities fraud did occur, the concern would be manifested by multiple gatekeepers pointing an accusatory finger at other gatekeepers.

Another potentially troubling product of the multiple gatekeeper phenomenon is the opportunity it creates for clients to disaggregate their work among multiple gatekeepers to minimize the ability of any individual gatekeeper to deter securities fraud. The adverse effects of such a practice could be exacerbated if the client also interposes between the various gatekeepers, rather than allowing them to interact directly. The 2008 merger of Bank of America and Merrill Lynch illustrates this concern. That transaction dominated financial media headlines and attracted congressional and regulatory scrutiny after revelations that Bank of America knew of massive losses by Merrill Lynch, the company with which it merged, but failed to disclose information about these losses to its shareholders adequately. Bank of America's law firm, which possessed no independent knowledge of the quantum of Merrill Lynch's losses, advised the bank to disclose those losses prior to the shareholder vote, according to allegations of the New York Attorney General. The firm was then allegedly "marginalized" by the bank from decision making concerning the disclosure issue. The bank's accounting firm, another gatekeeper centrally involved in the deal, noted the disclosure problem since the firm was involved in quantifying the losses and recommended that the bank seek the advice of legal counsel. However, by this time, the legal advisor had already been marginalized. The fragmented nature of gatekeeping services and the interposition of the client appear to have weakened the gatekeeping net, diminishing the capacity of the gatekeepers to deter potential securities fraud.

Section III: Differentiating Corporate Gatekeepers

Collective blame for recent business failures has fallen on gatekeepers. The conventional view is that auditors, lawyers, underwriters, analysts, and others have shirked their responsibilities and permitted illegal conduct. If we clarify and enhance the responsibilities of gatekeepers, some say we will avoid such debacles in the future [(Assaf Hamdani, (2003); Hillary A. Sale, (2003); John C. Coffee, Jr., (2004); Frank Partnoy, (2004)]. This claim traditionally depended on a rational actor model under which a gatekeeper would prevent misconduct by a primary violator because the gatekeeper's expected liability or reputational harm from failing to prevent misconduct exceeded the benefits gained in fees [Lawrence A. Cunningham, (2004); Jill E. Fisch & Carolina M. Gentile, (2003); Sean Griffith, (2003); Reinier Kraakman, (Peter Newman ed., 1998)]. Because investors

Brief History of Corporate Governance: (1600-2010)

1600s: The East India Company introduces a Court of Directors, separating ownership and control (the U.K., the Netherlands)

1776: Adam Smith, in the "Wealth of Nations", warns of weak controls over and incentives for management (U.K.)

1844: First Joint Stock Company Act (U.K.)

1931: Berle and Means publish its seminal work "The Modern Corporation and Private Property" (U.S.)

1933/34: The Securities Act of 1933 is the first act to regulate the securities markets, notably registration disclosure. The 1934 Act delegates responsibility for enforcement.

1968: The EU adopts its first company law directive (EU)

1987: The Treadway Commission reports on fraudulent financial reporting, confirming the role and status of audit committees and develops a framework for internal control, or COSO, published in 1992 (U.S.)

1987: The National Assembly of Vietnam adopts the Foreign Investment Law

1990: The National Assembly of Vietnam adopts the Company Law13 and the Law on Private Enterprises14

Early 1990s: Polly Peck (£1.3 billion in losses), BCCI and Maxwell (£480 million) business empires collapse, calling for improved corporate governance practices to protect investors (U.K.)

1992: The Cadbury Committee publishes the first code on corporate governance, and in 1993, companies listed on the U.K.'s stock exchanges are required to disclose governance on a "comply or explain" basis

1994: Publication of the King Report (S. Africa)

1994,1995: Rutteman (on Internal Controls and Financial Reporting), Greenbury (on Executive Remuneration), and Hampel (on Corporate Governance) reports are published (U.K.)

1995: Publication of the Vienot Report (France)

1995: The National Assembly of Vietnam adopts the Law on SOEs.

1996: Publication of the Peters Report (the Netherlands)

1999: The National Assembly of Vietnam adopts the Law on Enterprises, which replaces the Company Law and the Law on Private Enterprises

2000: The National Assembly of Vietnam amends the Foreign Investment Law of 1996

2000: The National Assembly of Vietnam adopts the Law on Insurance Business

2001: Enron Corporation, then the seventh-largest listed company in the U.S., declares bankruptcy (U.S.)

2001: The Lamfalussy Report on the Regulation of European Securities Markets (EU) is published

2002: The Government Office of Vietnam issues the first Model Charter of listed companies16

2002: The Enron collapse and other corporate scandals led to the Sarbanes- Oxley Act (U.S.); the Winter Report on company law reform in Europe is published (EU)

2003: The Higgs Report on non-executive directors is published (U.K.)

2003: The National Assembly of Vietnam adopts the new Law on SOEs to replace the Law on SOEs of 1995

2004: The Parmalat scandal shakes Italy, with possible EU-wide repercussions (EU)

2004: The National Assembly of Vietnam adopts the Law on Competition

2004: The National Assembly of Vietnam amends the Law on State Bank of 1997and the Law on Credit Institutions of 1997

2005: The National Assembly of Vietnam adopts the new Law on Enterprises and the Law on Investment, which replaces (i) the Foreign Investment Law, (ii) the Law on Enterprises of 1999, and (iii) the Law on SOEs

2006: The National Assembly of Vietnam adopts the Law on Securities

2007: The MOF of Vietnam adopts the CG Regulations and the Model Charter.

2010: The MOF of Vietnam adopts Circular 09/2010/TT-BTC governing the disclosure of information on the securities market.

1996: The National Assembly of Vietnam adopts the new Foreign Investment Law, which replaces the Foreign Investment Law of 1987 **1997:** The National Assembly of Vietnam adopts the Law on State Bank and the Law on Credit Institutions **1998:** Publication of the Combined Code (U.K.) **1999:** OECD publishes the first international benchmark, the OECD Principles of Corporate Governance **1999:** Publication of the Turnbull guidance on internal controls (U.K.)	**2010:** The National Assembly of Vietnam adopts the new Law on State Bank and new Law on Credit Institutions

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understand a gatekeeper would not act irrationally, his statements are believed [John C. Coffee, Jr. (2005)]. While this model has merits, it fails to distinguish among gatekeepers, likely to respond differently to incentives. It also fails to appreciate differences in the character of a gatekeeper's relationship with a primary violator and to consider whether such differences bear upon gatekeeper behaviour [John C. Coffee, Jr., (2004)].

This section examines gatekeepers by focusing not on their similarities but their differences. All gatekeepers are not alike. They vary widely in their functions, skills necessary for the job, relationships with their principals, and duties they owe. There are differences in their approaches as well. Accounting determinations, for example, are often formalistic and unambiguous, while legal advice is said to be more nuanced, requiring an attorney to explore a range of options with a client, who evaluates the lawyer's advice and then makes up her mind [Steven L. Schwarcz 2005)]. The securities analyst, unlike the accountant or lawyer, makes predictions, which are frequently wrong. Distinguishing among the character of gatekeepers' evaluations is helpful, but it masks more significant differences in the structure of gatekeepers' relationships with their clients.

This article focuses on one difference in the particular that bears closely on whether the gatekeeper can be effective: whether, as a normative matter, the gatekeeper is meant to be independent of the client, acting as a neutral umpire [John C. Coffee, Jr., (2003)] or whether the gatekeeper is meant to be dependent on the client, charged with promoting the client's ends in a fiduciary or similar capacity. The label *dependent* is used because certain gatekeepers depend on the client to determine their agency's nature, purpose, and scope. Distinguishing between independent and dependent gatekeepers, however, is only a starting point. One also must ask why gatekeepers have not been more robust monitors. At least part of the answer is that the conventional view of the gatekeeper's role is inadequate, focusing on the actions of a single individual rather than the dynamics of the group. Similarly, until recently, Congress, regulators, and courts have relied mainly on a command and control philosophy of governance, rather than addressing biases that can cause one slight misstep but lead incrementally to large scale disasters. Thus, rather than looking at the gatekeeper problem from the perspective of a rational actor, this paper explores it from a behavioural viewpoint.

Advances in behavioural and social psychology demonstrate that others strongly influence individual behaviour [S.T. Fiske, Neil J. Smelser & Paul B. Baltes eds., 2001)]. Commenters in this area have begun to pay attention to the institutional and interpersonal context in which gatekeepers formulate judgments about whether the conduct of others is appropriate [11th Annual Business Law Forum (2006); Symposium, *Corporate Misbehaviors* (2005); Sung Hui Kim, (2005; Marleen A. O'Connor, (2002); Robert A. Prentice, (2000); Donald C. Langevoort, (1993); James D. Cox & Harry L. Munsinger (1985); Revision of the Commission's Auditor Independence Requirements (Dec. 5, 2000)]. Joining this chorus, this article maintains that dependent gatekeepers, far more than independent ones, perform their responsibilities under the yoke of unconscious bias that affects the rigour they bring to the gatekeeping task and the accuracy of their judgments.

Thus, the thesis advanced is that independent agents are better gatekeepers than dependent ones. However, drawing on this literature does not suggest that people who make poor decisions or fail to guard against wrongdoing are not responsible. However, it is easier to investigate harm after it occurs and assign blame than to conduct a searching inquiry into one's underlying decision process to improve it [Elliot Aronson, (8th ed. 1999)]. Furthermore, this paper does not attempt to provide a complete behavioural explanation of gatekeeper conduct but instead raises, for future consideration, whether insights from behavioural psychology can be married with the understanding of the structure of gatekeeper relationships.

Independent and Dependent Gatekeepers

Differentiating Independent from Dependent Gatekeepers: The emphasis on gatekeepers in the financial markets is not new. The early securities laws recognized the difference between independent and dependent gatekeepers in the context of directors. The Securities Act of 1933 placed responsibilities on gatekeepers such as auditors, underwriters, and company directors, and the legislative history to the Securities Act highlighted their role [James M. Landis

(1933)]. In the 1970s, Securities and Exchange Commission actions against gatekeepers such as lawyers and accountants were based on the so-called access or passkey theory of liability. Certain professionals like lawyers and accountants [Roberta S. Karmel (1982)]. Today such actions often fall under the rubric of "aiding and abetting" or "secondary liability," and the SEC has broad authority to impose sanctions against those who aid and abet violations of the law [Harold S. Bloomenthal & Samuel Wolff, (2d ed. 2006)]. This section distinguishes independent from dependent gatekeepers by examining the roles of four types of gatekeepers: auditors, analysts, lawyers, and underwriters.

Independent Gatekeepers: Gatekeepers are retained as agents to perform a task or a series of tasks for a principal. In the course of doing so, they receive information, as the access theory suggests, that puts them in a unique position to evaluate whether the principal has violated, or is about to violate, the law. However, the tasks they perform and the relationships with their principals vary. Some gatekeepers are supposed to be independent of their clients to critically evaluate a set of facts and render an unbiased opinion for an unknown audience. The normative qualities of independent gatekeepers are illustrated through a closer look at auditors and analysts.

a. Auditors

The auditor of a public company should be the archetypal independent gatekeeper. Federal law requires that financial information filed by public companies be audited by an independent public accountant. In the world of auditing, independence has a special meaning beyond exercising the independent judgment required of most professionals. Independence calls for the independence of the *audit client*. The Supreme Court contrasted the roles of the auditor and the lawyer concerning independence. In deciding whether the work-product privilege applies to auditors, the Court explained:

> *The Hickman work-product doctrine was founded upon the private attorney's role as the client's confidential advisor and advocate, a loyal representative whose duty is to present the client's case in the most favourable possible light. An independent certified public accountant performs a different role. By certifying the public reports that collectively depict a corporation's financial status, the independent auditor assumes a public responsibility transcending any employment relationship with the client [the United States v. Arthur Young & Co (1984)].*

An auditor cannot be the client's advocate. In the Arthur Young case, the Court concluded by saying that the "'public watchdog' function demands that the accountant maintain total independence from the client at all times and requires complete fidelity to the public trust." Indeed, the courts have stated that accountants have disclosure obligations because of their "special relationship of trust vis à-vis the public" and their duty to "safeguard the public interest [Rudolph v. Arthur Andersen Co., (11th Cir. 1986)]." An accountant who knows of or recklessly disregards fraud can be liable for aiding and abetting it. The law discourages auditors and clients from developing long-term relationships. An auditor's long-term relationship with a client can jeopardize independence, something accounting literature refers to as a *trusted threat [AICPA, Guidance for Independence Discussions with Audit Committees*, May 1999 (Updated through November 1, 2000)]. Under SEC rules required by Sarbanes-Oxley, audit partners must "rotate off" an audit engagement after no more than seven years—presumably to cut short the relationship between auditor and client before it can blossom into a trust relationship that can impair independence [Securities Act Release No. 8183 (Feb. 5, 2003)].

The contrast between auditors and lawyers also is seen by comparing rules of imputation used by accounting firms, as opposed to law firms. Unlike accounting firms, law firms have strict imputation rules that arise from the lawyer's duty of loyalty [Model R. of Professional Conduct (2003)]. If one lawyer in a firm has a conflict of interest for a client, the conflict is imputed to the firm. With hundreds of clients and lawyers switching firms often, conflicts quickly arise [Casita, LP v. Maplewood Equity Partners (N.Y. Sup. Ct. Feb. 22, 2006)]. Large law firms manage conflicts daily by imposing procedures to ensure that information gained by an attorney regarding one client does not fall into the hands of another attorney at the firm, who might be under a duty to use the information for the benefit of another client. Accounting firms are not so constrained. A conflict by one member of an accounting firm will only preclude the firm from accepting an engagement if the conflict could be viewed as impairing another member's objectivity [Aicpa Code of Professional Conduct (1995)]. Similarly, AICPA rules impose duties of confidentiality, but they do not impute the knowledge of one member of the firm to everybody else. Accounting firms routinely audit the books of competitors or companies that have business relationships with one another.

b. Securities Analysts

The second example of an independent gatekeeper is the securities analyst. An analyst is supposed to research a company to judge its value as an investment [Jill E. Fisch & Hillary A. Sale (2003]. The analyst's role should review corporate information and present an unvarnished view of the company to investors or potential investors. The analyst's role should not be to advocate on behalf of the company but rather, as the auditor, objectively analyse the facts. Conflicts of interest must be disclosed [Securities Act (Supp. II 2002)]. The Supreme Court noted that the analyst's role in many cases is to expose adverse facts the company may wish to withhold [Dirks v. SEC (1983)]. Like with auditors, long-term relationships between analysts and issuers are discouraged. Evidence indicates that the longer an analyst follows a company, the more likely he is to evaluate the company positively [Paul M. Healy & Krishna G. Palepu (July 2003)]. Longevity leads to error. The view of the analyst as independent is under attack. Over the past several years, the principal criticism waged against analysts is that they have slowly lost their independence and become adjuncts of the investment banking departments of the firms that employ them [Nocera, N.Y. TIMES, Mar. 4, 2006]. These criticisms are valid and reinforce the view that the norm for the analyst is independence. If independence were not expected, analysts would not be denounced for losing their objectivity.

Dependent Gatekeepers

While some gatekeepers like auditors and analysts are supposed to be independent of their principal, others are not. Dependent gatekeepers provide advice and recommendations to assist a client in meeting its goals. They often act in a fiduciary capacity, owing to both a duty of loyalty and care to the client. As a fiduciary, these agents must act for the client's benefit, furthering its ends [Restatement (Second) of Trusts (1959)]. Courts maintain that the essence of the fiduciary duty is to act with "utmost good faith for the benefit" of the principal [Barbara A. v. John G., 145 Cal. App. 3d 369, 372 (1983)] and "single-mindedly pursue the interests of those to whom a duty of loyalty is owed [Birnbaum v. Birnbaum, 73 N.Y.2d 461 (1989)]." Regardless of the context, fiduciary cases are replete with language about how the fiduciary must act to further the principal's objectives [Willers v. Wettestad, 510 N.W.2d 676, 680 (S.D. 1994)].

A fiduciary relationship is characterized by values such as longevity and mutual trust, and fiduciary cases refer to a close bond that exists between the fiduciary and the principal [Broomfield v. Kosow, 212 N.E.2d 556, 561 (Mass. 1965); Strode v. Spoden, (Ky. Ct. App. 1955)]. However, those same bonds are anathema to relationships held by independent gatekeepers, such as auditors and analysts. Moreover, an auditor is not considered a fiduciary to the client when performing the audit function [VTech Holdings, Ltd. v. PricewaterhouseCoopers, (S.D.N.Y. 2004)]. The differences in the type of relationships independent and dependent gatekeepers have with their clients are striking. The characteristics of dependent gatekeepers are illuminated by examining more closely the role of attorneys and underwriters.

An Attorneys

A prime example of a dependent gatekeeper is the lawyer. Lawyers have a special place in the adversary system, recognising that conflict is inevitable and cannot always be resolved through consensus [Martin H. Redish (2001)]. In the adversary system, lawyers are not meant to be impartial. An attorney is required to "advance the client's lawful objectives and interests." Every lawyer knows about the duty of zealous advocacy. As Geoffrey Hazard has written, "A lawyer's service consists of guiding affairs for the client's private and often selfish purposes, with an eye to legal requirements that have been designed for the very purpose of limiting or regulating selfish purposes."

The relationship between client and lawyer is akin to an "informal partnership." They work together toward a common goal, although the client, not the lawyer, ultimately calls the shots. It is particularly true of in-house lawyers because of their long-term role as employees or subordinates of the client. In describing the lawyer's role, it is helpful to contrast it with the role of the judge. The traditional figure of justice—blindfolded— represents the court or the judge, not the lawyer. The lawyer, particularly in litigation, seeks to achieve success for his or her client to the disadvantage of the opposing client; the judge interposes herself between the two positions, seeking justice. The judge's ethical norm is impartiality; the lawyer is loyal.

Notwithstanding the role of a zealous advocate, the attorney's duty of loyalty is not unlimited. Courts and commentators have recognized the tension between the lawyer's fidelity to his client on the one hand and his role as a gatekeeper on the other—and lawyers are at the centre of the corporate governance debate[Jill E. Fisch & Kenneth M. Rosen, (2003); Dan Ackman, FORBES, (Nov. 30, 2001), Beck, (2003); Jenny B. Davis, (April 2002)]. ABA rules provide that a lawyer cannot "counsel a client to engage, or assist a client, in conduct the lawyer knows criminal or fraudulent." ABA rules permit an attorney to withdraw from representation where the client "insists upon taking action that the lawyer considers repugnant." Recent changes to the ABA Model Rules, which expand the circumstances when a lawyer may breach client confidentiality, illustrate the complexity of the lawyer's role *[The ABA Task Force on Corporate Responsibility (2003)]*. Certain states, such as New Jersey, go farther than the Model Rules and require lawyers to disclose information to prevent a client "from committing a criminal, illegal or fraudulent act that the lawyer reasonably believes is likely to result in death or substantial bodily harm or substantial injury to the financial interest or property of another."

Studies suggest that attorneys do not take this language entirely seriously. Particularly about financial injury, only a tiny percentage of lawyers make the required disclosure [Leslie C. Levin, (1994)]. It is not surprising as the overall role of the lawyer is to promote the aims and objectives of his client. The unwillingness to make such disclosures is consistent with the insights from behavioural psychology explored below. As one writer noted, "In the law, bias is a professional obligation [Paul G. Haskell (1998)]." While lawyers are occasionally found liable for wrongdoing, the facts of those cases are generally egregious.

While this paper places lawyers in the dependent gatekeeper class, occasionally, one hears that lawyers must be independent. What does independence mean in this context? Geoffrey Hazard has distilled a lawyer's independence to four principles: independence from the state, independence from improper relationships (including other clients and colleagues), independence from personal views regarding politics or morality, and independence from the *client*. This last principle warrants a closer look because if lawyers are supposed to be independent of their clients, they will fall into the category of other independent gatekeepers, like auditors.

However, a lawyer's independence from the client is different from the auditor's or analyst's independence. Hazard explains that a lawyer's independence from the client means forbearing from assisting a client in violating the law or rendering advice that encourages a violation. Such conduct ultimately would harm the client and be tantamount to a violation of the duty of loyalty. Therefore, independence in this particular sense is better described as a *corollary* of the duty of loyalty, not opposed to it. A lawyer is also said to be morally independent from his client because while the lawyer acts on behalf of the client, the actions and responsibilities of the two are distinct [Richard W. Painter (1994)]. Moral independence in that regard does not detract from the thesis of this paper; it supports it because it demonstrates that lawyers, as zealous advocates, make arguments that they may feel uncomfortable making on their behalf.

The lawyer's role as gatekeeper is most evident when giving legal opinions; one should look to determine whether a lawyer is independent of his client. A legal opinion is an informed judgment, usually reduced to writing, on discrete legal issues [Special Committee on Legal Opinions in Commercial Transactions et al., (1979)]. An opinion generally provides the recipient with the lawyer's judgment on how a particular court would resolve a discrete issue *[Third-Party "Closing" Opinions: A Report of the TriBar Opinion Committee, (1998)].*

Lawyers provide opinions to clients and non-clients on several matters that allow a transaction to go forward [Charles J. Johnson, Jr. & Joseph McLaughlin, (3d ed. 2004); Jeanne M. Campanelli & Bradley J. Gans, (2001)]. In giving an opinion, the lawyer does not function as a conventional advocate. Instead, the goal of the opinion giver should be to fairly and accurately provide a legal conclusion based on the relevant facts [Steven L. Schwarcz (2005)]. When a lawyer gives an opinion, and he knows or has reason to know that a third person is likely to rely on it, the lawyer owes a duty of reasonable care [Jay M. Feinman (2000)].

The lawyer's responsibility to a third person when preparing an opinion is in tension with his responsibility to his client. The lawyer as opinion giver is not entirely objective for several reasons. First, a lawyer rendering an opinion often serves a dual role as opinion-giver and engineer of the opening transaction. In that sense, the lawyer is passing on his work, which, as discussed, is prohibited for the independent auditor. Second, opinions typically are negotiated documents whose terms are agreed in advance of the consummation of a transaction. Third, unlike an audit, a legal opinion is considered one aspect of counselling a client who has requested that the lawyer provide the opinion to a third party. As Steven Schwarcz notes, lawyers should have the right to issue opinions to facilitate lawful transactions. They should not be expected to assess the overall legality of the transaction. Finally, an opinion does not give rise to a lawyer-client relationship with the third-party recipient. Even those who advocate a more powerful gatekeeping role for lawyers rendering legal opinions concede that opinion givers are not independent in the same sense as auditors.

b. Securities Underwriters

An investment bank acting as an underwriter in a public securities offering plays a crucial gatekeeping role, but, as we shall see, the underwriter is a dependent gatekeeper in many respects. It may be surprising because the underwriter is said to play a unique role as the only participant who, as to matters not certified by the auditor, has the background and knowledge to conduct a sufficient investigation to protect the investor. Section 11 of the Securities Act names the underwriter, unlike the lawyer, as a potential defendant in a private lawsuit if a registration statement is misleading. Section 11 also provides a due diligence defence to the underwriter, who must undertake a "reasonable investigation" to assure that statements made in the registration statement are factual. The underwriter must perform this responsibility on its own. It cannot rely on information provided by the issuer. "Tacit reliance on management assertions is unacceptable; the underwriters must play devil's advocate." Thus, there is a sense in which the underwriters are acting independently of the issuer to perform the due diligence required by the Securities Act. The role of the underwriter, however, is more complex.

Notwithstanding the emphasis on due diligence, the underwriter is not meant to be wholly independent of the issuer in the same way the auditor is independent. The issuer engages the underwriter to promote the distribution of its securities [James D. Cox, Robert W. Hillman & Donald C. Langevoort, (5th ed. 2006)]. In that regard, the underwriter's role, as an adviser to the issuer, usually predates the offering itself. In many cases, the managing underwriter provides advice on many issues pertinent to the offering, such as the type and amount of securities sold, the timing of the offer, and steps the issuer can take to make itself more attractive. As a result of advice given, some courts have begun to recognize a fiduciary relationship between an underwriter and an issuer [EBC I, Inc. v. Goldman, Sachs & Co., (N.Y. 2005)]. In addition, an underwriter often has a direct or indirect financial interest in an offering. Some underwriters invest directly in their clients, [Royce de Barondes (2005)] prohibited for independent accountants. Also, many underwritings are performed on a so-called best efforts basis where the underwriter will not receive a fee unless some or all of the securities are sold. In a recent Second Circuit case, the court summarized the underwriter's incentives as follows:

Underwriters have strong incentives to manipulate the IPO [initial public offering] process to facilitate an issue's complete distribution and sale. Underwriting is a business; competitive forces dictate that underwriters associated with successful IPOs will attract future issuers. Moreover, because underwriters assume a considerable measure of risk if an IPO fails, they have a direct interest in the IPO's success. Moreover, underwriters perform multiple services for their clients. Performance of such services, notwithstanding the due diligence responsibility under section 11, distinguishes underwriters from auditors and makes them dependent in a way that auditors now cannot be. Unlike auditors, which are restricted in the performance of non-audit services, underwriters continue to be interested in cultivating the client relationship to obtain additional consulting and other work. The very provision of advice can turn a non-fiduciary relationship into a fiduciary one by dint of reliance by the principal on the skills and expertise of the agent and the trust and confidence reposed in him.

Application of National Association of Securities Dealers (NASD) rules demonstrates that an underwriter is a dependent gatekeeper. In some cases, NASD rules require its members to hire an independent agent (known as a qualified independent underwriter) to conduct due diligence on a registration statement and provide an independent pricing opinion [William M. Prifti, Securities Pub. & Priv. Offerings (June 2006); Harold S. Bloomenthal, Securities Law Handbook

(2006)]. If a conventional underwriter were independent, the NASD rules would be superfluous *[Amendments to the Corporate Financing Rule*, NASD Notice to Members 04-13, Feb. 2004].

This Part demonstrates that all gatekeepers are not alike. Some, like auditors, are meant to be independent of their clients. Others, like attorneys, are dependent on the goals and objectives of their clients and often serve in a fiduciary capacity. Part II explores social and behavioural psychology aspects to determine whether these differences bear on how gatekeepers are likely to behave. Drawing on these insights, Part III discusses how dependent gatekeepers, charged with furthering the interests of their clients, are less likely to be effective gatekeepers than independent ones and what we should do about it.

Section IV: Regulatory regime of gatekeeper liabilities

A. Directors

In the *United States*, the Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley) imposes increased responsibilities on directors, without direct legal penalties for directors who breach those responsibilities [Public Company Accounting Reform and Investor Protection Act (Sarbanes-Oxley) 18 U.S.C. §7261 (2002)]. In the *United Kingdom*, there have been recent amendments to company law that have relaxed the provisions protecting directors and other company officers from liability [Companies (Audit, Investigations, and Community Enterprise) Act, 2004, Ch. 27, § 19-20 (U.K)]. Amongst these changes are the introduction of director liability to third parties, under sections 19 and 20 of the Companies (Audit, Investigations and Community Enterprise) Act 2004 (C(AICE)). The current Canadian gatekeeper liability regime for directors is in line with the U.S. model but has not gone the U.K. route of attaching additional liability to the additional responsibilities now placed upon directors, particularly independent directors, as gatekeepers.

The *academic literature* suggests that the exact nature of the gatekeeping role that directors should play remains unclear. For example, James Kirkbride and Steve Letza suggest that non-executive directors might serve as internal monitors of CEO behaviour because they have access to privileged information about firm operations, which is inaccessible to public enforcement officials [James Kirkbride & Steve Letza, (2005)]. However, they outline some of the problems associated with imposing gatekeeper liability, including the cost element; if gatekeepers cannot shift their liability risks, they will charge higher premiums. It suggests that imposing increased liability on directors as gatekeepers do not necessarily contribute to a more effective gatekeeper liability regime.

Indeed, *public opinion* does not support an increase in sources of director liability [Ditchley Foundation Conference, Confidence, Control and Compensation: Questions for the Modern Corporation (Sept. 5-7, 2003)]. Instead, increasing transparency and disclosure about directors' salaries may help allay general concerns. The sharp rise in directors' salaries relative to the salaries of the average employee was cited as a significant problem by many Ditchley Foundation conference participants, including business people, regulators, and politicians. Further demonstrating the problem with directors' salaries, the Ontario Teachers' Pension Plan released a report in June 2006 showing little correlation between CEO pay and total stock return [Institutional Shareholder Services, Spotlight on Executive Pay and Board Accountability 38 (2006)]. To combat the *public perception problems* with directors' compensation, the Canadian Coalition for Good Governance has suggested transparency guidelines and assists in their implementation *[Good Governance Guidelines for Principled Executive Compensation,* (Canadian Coalition for Good Governance, Working Paper, 2006)].

Additionally, the recent introduction of the *secondary market civil liability scheme in Ontario* presents an opportunity to evaluate the impact of increased gatekeeper liability for directors and, at the same time, examine the judiciary's role in applying such a regime. Further amendments are not recommended until this experience has been thoroughly evaluated in the Canadian context. Following an evaluation of the current regime, *further consideration should be given to attaching increased liability to the added responsibilities placed on directors, particularly independent directors.*

B. Lawyers

In Canada, the *United States, and the United Kingdom*, lawyers are regulated by law societies and securities statutes. Under section 307 of Sarbanes-Oxley, the SEC has developed rules of professional conduct for lawyers, and those who violate the rules are subject to all remedies and sanctions available to the SEC for the violation of federal securities laws [Sarbanes-Oxley, 18 U.S.C. § 307 (2005)]. *Lawyers are also regulated by their state bar association,* many of which have adopted the American Bar Association's Model Rules of Professional Conduct (Model Rules), though it is up to each bar association to develop its own rules and standards. *In the U.K.*, the Law Society sets out The Guide to the Professional Conduct of Solicitors [The Guide to the Professional Conduct of Solicitors, (Nicola Taylor ed., 8th ed. 1999)]. *Lawyers in the U.K. are also regulated* under the Financial Services and Markets Act 2000 [(FSMA 2000].

Unlike the *U.S. model and more akin to the U.K. model, the Canadian model for gatekeeper liability* for lawyers assigns the essential regulatory function to the provincial law societies. The benefit of this model is that the problem of *conflicting standards in the U.S. between the Rules of Professional Conduct*, set by each state Bar Association and the SEC rules does not arise. It is also the case that the law societies are keenly aware of the competing tensions between lawyers' gatekeeping function and the confidentiality requirements that are required generally of all lawyers. However, there is *variation among the law societies* to the extent that they have created specific rules to address lawyers' gatekeeping functions.

Ontario appears to have created the model most similar to the U.S. model, *striking a balance between lawyers' roles as gatekeepers and advocates.* To improve the competitiveness of Canadian capital markets, it is recommended that each law society consider adopting a similar set of rules—with the input of each provincial securities commission. A more uniform and comprehensive set of rules of professional conduct will simplify the existing system and at the same time ease investors' concerns about the role that lawyers are playing in Canadian capital markets. Following a provincial consultation process, it may be helpful to form a national working group to develop a uniform set of rules of professional conduct.

C. Auditors

After the financial collapse of Enron, there was very little public confidence in auditors and accountants. While it was an American corporation, seventy-three per cent of Canadians doubted their public protections and believed an Enron-like scandal would take place there as well [Pollara, (May 2002)]. Further, inconsistencies between the Canadian and American systems have been highlighted by Al Rosen, founder of the forensic accounting firm Rosen & Associates Ltd. He contends that in 2003, two-thirds of Canadian companies would have lower reported profits if American accounting rules were used in place of their Canadian counterparts. Recent Canadian reforms, detailed below, have helped address these concerns, and this article offers additional suggestions to increase public confidence in auditors further. In the U.S., Sarbanes-Oxley imposed extensive federal regulation on the accounting profession. The act created the Public Company Accounting Oversight Board (PCAOB) to oversee the audit of public companies. *Accounting firms must register* with the PCAOB, which has broad powers to promulgate binding rules and standards, conduct investigations, and impose discipline; by shifting control of the accounting profession to a new body, the PCAOB aims to address the problem of accounting irregularities by establishing auditing standards and imposing professional discipline.

The U.K.'s counterpart to the PCOAB is the *Financial Reporting Council* (FRC), an independent regulator for corporate reporting and governance, created in April 2004 under the authority of the C(AICE) Act. The functions of the FRC include: establishing, monitoring, and enforcing accounting and auditing standards; regulating auditors; operating an independent investigation and disciplinary scheme for public interest cases; overseeing the regulatory activities of professional accountancy bodies; and promoting high standards of corporate governance [Financial Reporting Council, *Regulatory Strategy* 2 (2006)]. Drawing on the U.S. and the U.K. *models*, the author believes that consideration should be given to conferring SRO status on the Canadian CPAB, subject to oversight by each of the securities regulators; the development of the CPAB provides an opportunity to improve the current gatekeeper liability regime for auditors. The current model, in which the CPAB relies on the ethical standards imposed by the industry bodies that have jurisdiction over auditors, is consistent with the current Canadian self-regulatory approach. However, the status of the CPAB, as a creature of contract, is distinct from other similar organizations, creating issues concerning legitimacy, fairness and effectiveness. Currently, three SROs are recognized by the OSC and most other provincial securities regulators. The SROs currently recognized by the OSC are the Investment Dealers Association of Canada (IDA), the Mutual Fund Dealers Association of Canada (MFDA), and Market

Regulation Services Inc. (RS). It is recommended that the CPAB be accorded SRO status. An SRO is an entity that represents registrants and is organized to regulate the operations, standards of practice, and business conduct of its members and their representatives, to promote the protection of investors and the public interest. In its capacity as an SRO, the CPAB will be better positioned to work with the industry bodies that regulate the accounting profession, thereby ensuring that the ideal level and form of gatekeeper liability for auditors are in place. It would improve investor confidence in the CPAB, as regulator, and auditors, as gatekeepers, because their chief regulator—the provincial securities commission—will be perceived as more legitimate and fair. At the same time, this change will bring the Canadian position more in line with the U.S. and U.K. positions.

The recent reforms and the changes proposed still leave the "two master problem" unresolved: auditors are still asked to treat the public as master but continue to be paid by the corporation [Amy Shapiro (2005)]. While this is *recognized as an issue for gatekeepers*, there is insufficient evidence to suggest that the current Canadian system needs to be overhauled entirely at this time. Much has happened in Canada, the U.S., and the U.K. in the context of oversight of auditors over the last five years, and at this point, it is justifiable to resist making further changes and allow the current system to develop while continuing to monitor it. In particular, the recent expansion of the number of accountants who may perform public audits should be observed *[Certified General Accountants Association of Canada, Public Accounting Rights for Certified General* Accountants in Canada, May 2005]. The role that increased competition may play will be a *factor in future regulatory decisions.*

D. Credit Rating Agencies

Commentators such as Frank Partnoy see CRAs as possessing little informational value. While initial credit ratings guide purchases, it is unclear whether they provide any information beyond that already reflected in the "price talk" before a fixed instrument is issued. In the current American context, Partnoy argues that CRAs are important not because they offer valuable information, but because they grant issuers "regulatory licenses"—that is, a good rating entitles the issuer to certain advantages related to regulation. Building on this critique, the best reforms should create incentives for CRAs to generate more excellent informational value while reducing the impact of ratings on markets.

The effectiveness of CRA's *gatekeeping role remains an open question.* However, public perception and academic writing suggest that the existing liability regime does not instil confidence in capital markets and that there is room for modernizing Canadian securities legislation to improve the current situation. Accordingly, reforms to the current regime should focus on creating incentives for CRAs to generate informational value while reducing the market impact of ratings from a small group of CRAs. Given the uncertainty around CRAs' role and no Canadian SRO or industry body charged with regulating CRAs, the securities commissions could play a critical role. Securities legislation should be amended to create a mandatory registration requirement for all CRAs, and the provincial securities commissions should have the power to revoke or suspend the registration of a wayward registrant.

The disclosure obligations formulated by the IOSCO should be a condition to registration with the provincial securities commissions. The registration requirement would bring the treatment of CRAs more in line with the spirit of Canadian securities legislation related to oversight of corporate gatekeepers. Registration would also create a threat of liability for rating malfeasance. Given concerns with imposing civil liability on CRAs, *the ideal gatekeeper liability* *scheme should focus on administrative liability* [Stephane Rousseau, (Aug. 2005)]. The IOSCO Code, which CRAs have already generally adopted, presents a good model for imposing liability on CRAs.

E. Financial Analysts

Because of their unique intermediary role in capital markets, *conflicts often arise between an analyst's duty to provide independent, objective advice to investor clients and pressures to support investment banking revenues. In the* current context, buy-side pressures on financial analysts are increasing insignificance. For example, there is an incentive for a mutual fund with extensive holdings in stock to persuade an analyst not to put a "sell" recommendation on the stock that might contribute to a decline in its price. Following the SICAS Report, the IDA has taken significant measures to address the gatekeeping role played by analysts. However, given the recent reforms in the U.S. and the U.K. to *bolster confidence in analysts' function as gatekeepers, analysts should require more detailed disclosure by analysts, with accompanying liability for failure to disclose*. U.S. reforms include SEC Regulation AC (Analyst Certification), effective April 2003, which requires that when a broker, dealer, or covered person furnishes research prepared by a research analyst, the research must include a statement by the research analyst that the research truly reflects the analyst's opinion, and disclose whether or not an analyst received compensation in connection with his or her specific recommendations or views [David J. Labhart, (2004); Sec. and Exchange Commission, Regulation Analyst Certification (Apr. 2003)]. Penalties under the Securities Act (or rules or regulations promulgated under the act, such as Regulation AC) may amount to fines of up to $10,000 or imprisonment of up to five years.

Since July 2004, firms that publish impartial research must have implemented a policy on identifying and managing conflicts to ensure analysts' impartiality. The U.K.'s attempt to raise confidence in analysts' function is found in the Financial Services Authority's (FSA) Conduct of Business Sourcebook, section 7.17, which imposes "fair presentation" and disclosure requirements on analysts [Emilios E. Avgouleas (2005)]. The FSA's rules set out minimum standards for conflict management processes and procedures [Fin. Services Authority (Sept. 2005)].

In Canada, IDA Policy No. 11205 should be amended to require: 1) a statement by the analyst that the research truly reflects the analyst's opinion, and 2) a prohibition on the investment banking department supervising or controlling analysts. Currently, Rule 2(b) requires that members disclose their system for ratings. More specific disclosure requirements, including identification of the analyst responsible for the production, dissemination of the research and a statement by the analyst that the research truly reflects the analyst's opinion, would bolster investors' confidence in the provided information. This reform will address both sell-side and buy-side pressures facing financial analysts. In addition, members should set policies and procedures under IDA Rule 11 to avoid conflicts of interest and put in place controls and maintain records of supervision of analysts and explicitly prohibit supervision and control of analysts by the investment banking department. While such measures may appear to be outdated to the American reader given that similar measures were introduced in the U.S. in 2003 following Eliot Spitzer's investigation of conflicts of interest at Wall Street investment firms, they are not outdated in the Canadian context [(Conduct Rule 2310) Eliot Spitzer, Office of New York State Attorney General, Conflict Probes Resolved at Citigroup and Morgan-Stanley (Apr. 28, 2003)]. These measures will bring the Canadian approach to gatekeeper liability for analysts more in line with the U.S. and the U.K. approaches while maintaining the Canadian self-regulatory model.

F. Retail Investment Advisors

Recent reform efforts regarding the liability of investment advisors in Canada have not focused on their role as corporate gatekeepers. Instead, the focus has been on establishing consumer protection mechanisms to address power imbalances in investment advisors' relationships with customers. The evidence suggests that consumer protection issues are the most pressing concern in the Canadian context. In certain instances, there is an overlap between liability introduced for more general consumer protection purposes and liability for failure to perform a corporate gatekeeping function. However, recent U.S. and U.K. reform efforts demonstrate that similar issues arise concerning the role of analysts and investment advisors as corporate gatekeepers. Accordingly, similar gatekeeper liability regimes (specific to the role of each gatekeeper) are justified and should be put into place. In the U.S., a complete service investment advisor is obligated to recommend only those securities that match the customer's financial needs and goals (the "suitability obligation"), which is imposed on NASD members through the Rules of Fair Practice. Similar consumer protection issues arise in the American context, a breach of the suitability obligation has grown into the most commonly alleged basis of investor recovery against investment advisors.

To a certain extent, the corporate gatekeeping role of investment advisors in Canada has been underestimated. As a national SRO, the IDA is ideally suited to develop and implement a parallel policy to Policy No. 11, which is specific to the role of investment advisors. In particular, like Policy No. 11, the policy for investment advisors should build on the existing requirements in securities legislation for disclosure of possible conflicts resulting from the firm's relationships to issuers and clients. The new policy should respond to issues created by relationships in the firm in the same way as Policy No. 11 seeks to respond to relationships between analysts and investment bankers.

G. Underwriters

Recent reforms in the U.S. have not focused on imposing or modifying the liability to which underwriters are subject as gatekeepers. For example, Choi writes that underwriters face strong incentives to act as certifiers; if they can provide credible assurances that an issuer's disclosures are truthful, investors will be willing to pay more for the issuer's securities. *The issuer will then pay more for the underwriter's certification service. There is less need for underwriter liability if they are incentivized to become more independent and arguably better gatekeepers by the market for independent certifiers*. This argument applies to the Canadian context, suggesting that underwriters do not need to be subjected to additional liability.

The current regime subject underwriters to civil, administrative and criminal liability for failure to perform their gatekeeping role. However, the focus is on disclosure of conflicts rather than on enlarging the instances and possibility for gatekeeper liability. In this way, the current regime is consistent with the model that Choi advocates. The reforms introduced by National Instrument 33-105210 help promote this model in Canada and are consistent with the recent and proposed reforms in the U.S. and the U.K. to improve the effectiveness of underwriters' role as gatekeepers. There is insufficient evidence suggesting that increasing or modifying the gatekeeper liability regime underwriters are currently subject to will contribute to more competitive Canadian capital markets. At the same time, time constraint issues related to fast track offerings and the implications for the ability of underwriters to conduct adequate due diligence should continue to be monitored.

Summary

The analysis of the academic literature and the comparative context suggest that developing a streamlined approach to amending the gatekeeper liability scheme in Canada, which comes closer to the U.S. and the U.K. models, is not desirable. Overall, the polycentric legal environment for gatekeeper liability in Canada appears to be developing in a manner that gives gatekeepers guidelines on how to perform their functions and adequate reason to do so. It can be demonstrated by indexes such as the Rotman School of Management's Board Shareholder Confidence Index, which found that governance scores, designed to reflect the degree to which a company implements elements of good governance, have improved every year since 2003 [Michael Wilson, (Dec. 2005)]. In examining the existing Canadian model where the boundaries between law and professional practice are somewhat blurred, and subsystems of liability that apply to various gatekeepers differ both from gatekeeper to gatekeeper and also geographically, it became apparent that participants in the market and other members of the public may not be aware of the extent of the existing corporate gatekeeper liability regime in Canada. Awareness of the liability scheme plays a crucial role in developing confidence in Canadian capital markets. Accordingly, a final recommendation is made regarding the widespread dissemination and availability of papers that seek to map out the existing gatekeeper liability regime in Canada and situate it in the context of recent academic literature and reforms in comparable jurisdictions.

Section V: Gatekeeper Motivation and Bias

Intuition tells us that a dependent gatekeeper will be ineffective. The dependent gatekeeper faces a dilemma. The gatekeeper can act as a weak monitor, enhancing his potential liability but preserving his client relationship and positioning himself for future business. Alternatively, he can act as a robust monitor, shielding himself from potential liability but possibly damaging his client relationship and acting inconsistently with his fiduciary duty. Liability for breach of fiduciary duty could be overcome by fiat. Congress or regulators could draft laws or rules to trump state common law and limit liability for certain violations of the duty of loyalty. Although such terms could be difficult to negotiate and enforce, the same result might be achieved through a contract. The SEC's attorney conduct rules, which require lawyers to report violations of law "up the ladder" in the business organization, was a partial measure in this regard. In adopting the rules, the SEC reaffirmed that they "shall prevail over any conflicting or inconsistent laws of a state or other United States jurisdiction in which an attorney is admitted or practices [Investment Company Act (Feb. 6, 2003)]." While the rules are controversial, the ABA recognized that federal law might provide a basis for the pre-emption of attorney-client confidentiality [Letter from Alfred P. Carlton, Jr., President, American Bar Assoc. to Jonathan G.Katz, Sec'y, SEC (December 18, 2002)]. Even if such protections are available, open-ended responsibilities placed on fiduciaries to act as gatekeepers are unlikely to be effective. One reason for this, Part I demonstrates, is that a dependent gatekeeper should be committed to furthering the goals of his principal. This part explores a related reason, namely whether a gatekeeper's decision-making process in determining whether to act in a way that could harm his principal is constrained by unconscious bias. This Part begins with a short discussion of how conventional analysis has failed and why incorporating behavioural and social psychology lessons is essential.

a. Failures of Conventional Analysis

The primary failure of the traditional analysis of gatekeeper liability is that it did not sufficiently consider the dynamics of the group. People are motivated to act in the way they do out of biases deeper than an urge to maximize their wealth, reputation, or another measure of well-being. They are concerned about many other factors, such as how peers perceive them, and they make decisions in many cases based on what will be acceptable to the group. Moreover, most people stick to their decision, even if the decision turns out to be wrong-headed, long after they figure that out. These group dynamics, however, are only now getting significant attention in the literature regarding gatekeeper reform. Focus on the individual, as opposed to the group, pervades our system of justice. Our system determines the guilt of an individual actor [James A. Fanto, (2005)]. It is consistent with the emphasis in corporate law on discrete rational individuals acting to maximize their wealth [Daniel J.H. Greenwood (2005)]. Ignoring group dynamics, however, is inconsistent with the way individuals operate in a business environment. This observation is not new. Law and economics scholars, often criticized by proponents of social psychology, recognized long ago that the nature of the corporation could be best understood by placing the individual into the group and recognizing the role of the individual within it [Frank H. Easterbrook & Daniel R. Fischel, (1991)]. Ignoring group dynamics leads one back to a rational actor model of individualized action and stresses a "bad apples" approach to understanding corporate wrongdoing [John M. Darley (2005)]. It deemphasizes the influence one person or group of persons has on another, such as the interaction of a board of directors or the relationship between and among gatekeepers and their principals. This de-emphasis elides the complicated causes of misbehaviour and may prevent meaningful reform.

Second, analysts of gatekeeper liability have ignored specific root causes of corruption. Corruption can begin with certain small steps that "have their origins in actions that are not themselves corrupt." Small or insignificant actions can spread within an organization, with each subsequent actor rationalizing that their conduct is not much different from conduct that preceded it. If this is correct, wrongdoing cannot be alleviated in large organizations by screening out individuals deemed corrupt. The problems are deeper because many or most people are susceptible to the kinds of actions they ultimately might brand as wrong.

Moreover, even if one is not susceptible to committing an action that could be considered corrupt in hindsight, conventional analysis has not accounted for how loyalty in an organization can cause some persons to fail to question others. A related frequently ignored concern is the haste with which individual decisions in large organizations are often made. This phenomenon is masked by the time it takes for tangible results to be achieved, such as introducing a new product or service. However, hundreds of thousands of more minor decisions are made within an organization to achieve the tangible result, often with little or no reflection. John Darley has explained that wrong decisions "may be overridden by the more deliberate thinking of the reasoning system, but only if something triggers that system into action."

Third, in addressing gatekeepers' behaviour, ideas of agency cost theory and the nexus-of-contracts approach are overemphasized. This approach focuses on purported contractual relationships, such as an individual director and the corporation. It recognizes that a director's interests may diverge from the shareholders' and it considers ways shareholders can ensure that a director's interests are aligned with shareholders' interests. Under this view, a manager or director's fiduciary duty is nothing more than a safeguard to ensure he makes the right decisions on behalf of investors, as the residual claimants of the firm [Frank H. Easterbrook & Daniel R. Fischel, (1983)]. However, the individualism characteristic of the contractualist view is inconsistent with board experience and fails as an explanatory theory of the recent business failures [Rakesh Khurana & Katharina Pick (2005)]. Finally, conventional analysis remains primarily wedded to a "command and control" (as opposed to a self-regulatory) corporate governance model. Where a command and control model relies on external sanctions and rewards, a self-regulatory model relies on shaping employees' internal motivations [Tom R. Tyler, (2005)]. Behavioural and social psychologists have shown that people are not profit maximizes [Marius Aalders & Ton Wilthagen, (1997); Neil Gunningham & Joseph Rees, (1997); Andrew A. King & Michael Lenox, (2000); Clifford Rechtschaffen, (1998); Darren Sinclair, (1997)); Melvin Aron Eisenberg, (1995 Jon D. Hanson & Douglas A. Kysar (1999) Cass R. Sunstein, (1997)].

b. Social Psychology

Lessons from sociology bridge psychology, which emphasizes the mental processes and behaviour of the individual, and sociology, which emphasizes social structure, social institutions and processes, and human interaction. In general terms, social psychology addresses the influences people have on the beliefs and behaviour of others. Much of the work in this area focuses on an individual's behaviour in a social environment and motivations that affect the individual's decision making [E.F. Borgatta, (3d ed. 2001); Michael A. Hogg (2005)]. It is a broad field with, by one count, some 600 theories to explain human behaviour. The research suggests that unconscious bias can affect gatekeeper decisions. Social psychology teaches that goals and motives influence reasoning—the way people process information and their judgments. Motives affect reasoning by inducing people to rely on a limited set of cognitive processes that reflect the goals we seek to achieve. Cognitive processes that can become corrupted include how one accesses information and constructs and evaluates beliefs [Ziva Kunda, (1990)].

Gatekeeper decisions also can be biased because of a related reliance on heuristics, which are shortcuts or rules of thumb we use all the time to aid decision making. Most work in the area of heuristics and biases concerns facts. Heuristics, however, also are used in moral and legal decision making [Cass R. Sunstein (2004)]. By utilizing heuristics, one can avoid the complex cognitive work of receiving, understanding, and interpreting complex information and analysing the costs and benefits of alternative courses of action [Jennifer S. Lerner & Philip E. Tetlock, (1999); Philip E. Tetlock, Linda Skitka & Richard Boettger (1989)]. Heuristics work well most of the time, but not always [Amos Tversky & Daniel Kahneman, (1974); (Daniel Kahneman et al. eds., 1982)]. They fail us when a generalization that results from a heuristic is taken out of context and used as a universal principle where it no longer applies.

c. Reducing Dissonance

Psychologists explain that goals and motives influence reasoning because people seek to maintain consonance between relevant cognitions. The lack of consonance, or dissonance, produces pressure to avoid situations and information that increase the dissonance. One type of dissonance is post-decisional dissonance, which arises where a person must choose between two alternatives with positive and negative features [J.B. Campbell (3d ed. 2001); Leon Festinger, (1962) (1957)]. Most people typically choose the alternative that will result in less, not more, dissonance after the decision is made. In making such decisions, research demonstrates that reasoning can be driven by accuracy goals on the one hand or directional goals on the other. When one has accuracy in mind, the motive is to arrive at an accurate conclusion. When one has a directed goal in mind, the motive is to arrive at a particular conclusion. Accuracy goals yield better reasoning; directional goals yield strategies intended to reach a conclusion desired.

The distinction between accuracy and directional goals goes to the core of the difference between independent and dependent gatekeepers discussed in Part I.

Independent gatekeepers should be concerned with accuracy. They owe duties of objectivity and accuracy to the public. They should not be motivated by the clients' goals and end in the same way dependent gatekeepers are. Dependent gatekeepers, by contrast, are interested in reaching a particular result. A dependent gatekeeper, as discussed in Part I, must act for the client's benefit, furthering its ends and presenting the client in "the most favourable possible light [the United States v. Arthur Young & Co., (1984)]."

d. Motivational Goals

This section discusses mechanisms that result in thought processes to reduce dissonance related to accuracy versus directional goals that arise in the context of group dynamics. The focus is on two mechanisms—accountability and commitment—that are likely to bear on gatekeepers' decisions and that likely bear differently on dependent and independent gatekeepers as well as related heuristics that may lead to bias.

Accountability

a. The Perils of Accountability in Decision Making

Generally, accountability refers to an expectation to justify one's beliefs, feelings, or actions to others [Karen Siegel-Jacobs & J. Frank Yates, (1996)]. Accountability enhances accuracy because people who are held accountable will avoid making arbitrary or incorrect decisions. Politicians, teachers, supervisors, and colleagues are often called upon to be more accountable. They are providing compelling justifications results in positive ones. But researchers have uncovered a negative side to accountability as well. Failure to provide sufficient justification for a decision can result in negative consequences. Accountability, in some cases, can negatively affect the formation of attitudes and the accuracy of judgments. One way to understand accountability is that it acts as a constraint on everything we do. Constraint caused by accountability can lead people to censure particular views and short-circuit their decision process, omitting essential considerations.

We short-change accuracy goals for the sake of directional goals. Students, for example, are asked to complete evaluations of faculty anonymously to ensure that the students will not be held accountable. Imagine how *inaccurate* evaluations would be if we told students they must affix their signature and justify their beliefs to the evaluation faculty. This example suggests that the effect of accountability on accuracy differs depending on whether the audience's views to whom one is accountable are known or unknown to the decision-maker. In the example, the audience's views (the faculty) are known to the decision-maker (the student) because the student would be justifying her evaluation to the same faculty she is rating. People are generally motivated to seek approval from their audience and are biased in favour of conclusions that conform to their views. When the audience's views are known to the decision-maker before she forms an opinion, she will redirect her opinion to conform to them. Directional goals take over. People adopt positions that are likely to be pleasing to those to whom they are accountable. When the audience's views are unknown, conformity is not possible, and accuracy goals predominate. In that case, people are more likely to consider multiple objectives and engage in a more thoughtful, deliberate, self-critical analysis. As Jennifer Lerner and Philip Tetlock explain, "When participants expect to justify their judgments [to an unknown audience], they want to avoid appearing foolish in front of the audience.

They prepare themselves by engaging in an effortful and self-critical search for reasons to justify their actions." Thus, in our example, accountability could promote accuracy if we hold students accountable to an independent board whose views about the faculty were unknown. Psychologists call the acceptability heuristic, which is closely related to the motivation to conform one's views to a general audience. Adopting the position of one's audience circumvents hard cognitive work. Studies demonstrate that when participants were unaware of the audience's views, they engaged in more complex information processing [Serena Chen, David Shechter & Shelly Chaiken (1996)]. When one expects to discuss one's views with an audience whose views are known, one will shift attitudes toward those of the audience, even if the results are inefficient. People do this in several ways. One possibility is to rely on irrelevant information in making a decision. In one study, when asked to predict grade point averages of a student audience, accountable participants short-circuited their reasoning and relied on irrelevant information, such as the number of plants a student keeps, as opposed to the number of hours the student studied. It allowed the participants to pursue their directional goals—predicting high GPAs—at accuracy's expense.

b. Accountability and Gatekeeper Bias

How do accountability and audience views bear on decisions made by independent and dependent gatekeepers? Independent gatekeepers should be accountable to an audience whose views are unknown. The audience for independent gatekeepers, such as auditors and analysts, is a diverse public with heterogeneous views. Financial statements, for example, are necessary not only for management to get a complete snapshot of the company's affairs but also for use by creditors, suppliers, analysts, employees, competitors, and, perhaps most importantly, public investors. While some may wish to see a clean opinion from an auditor or a "buy" recommendation from an analyst, others may want the opposite. Empirical studies of auditors confirm that when audience views were known, auditors were animated by directional goals and conformed their conclusions to them. When the views were unknown, auditors were accuracy-oriented and engaged in a more deliberative process. While the issuer may retain an auditor, it must conduct itself independently of the issuer. As Robert Haft has explained, "There is a greater tendency for courts to decide that a duty to disclose material facts to non-client investors exists for accountants than for attorneys . . . ." [Robert J. Haft, (1995)] Similarly, analysts should be independent of the companies they research and should present the company to the public in an objective fashion. These gatekeepers cannot know the views of their audience as the audience comprises public investors.

Dependent gatekeepers, by contrast, are accountable to an audience whose views are known, the clients who hired them. The lawyer's primary audience is his client; the same is true for an underwriter. As discussed in Part I, dependent gatekeepers advocate on their clients' behalf and, in some cases, owe them fiduciary duties. The dependent gatekeeper is charged with furthering the client's goals, which the gatekeeper appreciates and understands because the purpose of his engagement is to promote those goals. Sung Hui Kim refers to lawyers' "ethical ecology," explaining that "alignment pressure can distort the lawyer's judgments." Underwriters, while subject to section 11 liability, assume a substantial risk if an offering fails. Thus, while the underwriter's dependence may not be as clear as the lawyer's, the underwriter faces alignment pressure just like the lawyer. By contrast, lawyers are exempt from section 11 liability— Congress simply did not include them in the list of potential defendants.

Moreover, lawyers generally are accountable to their clients, not third parties, for their legal opinions [Jay M. Feinman (1996)]. As one court stated, "The law, as a general rule, only rarely allows third parties to maintain a cause of action against lawyers for the insufficiency of their legal opinions." The comment to the relevant section in the Restatement of the Law Governing Lawyers explains, "Making lawyers liable to non-clients, moreover, could tend to discourage lawyers from vigorous representation. Hence, a duty of care to non-clients arises only in… limited circumstances." Thus, in the case of dependent gatekeepers, the audience's views are known, and the gatekeeper has a strong desire to maintain views consistent with them.

Commitment

a. Commitment and Bias

Once people commit to a course of action, they tend to escalate their enthusiasm. Even after it becomes clear that the disadvantages of pursuing a course of action outweigh the advantages, people refuse to let go. "Groups may stick to a consensus view, even in the face of changing information, because consensus assures them their assessment or decision is correct." Social psychology teaches that when an individual is a group member committed to the purposes and tasks of the group, the task of the individual is first to become a "prototypical member of that group, and then help the group as best she can in reaching its goals." Moreover, after committing to a decision, people are highly motivated to avoid self-criticism and justify their original decision if called upon to justify the choice. Studies show that subjects concern themselves with thinking up as many reasons for why they were right and their critics wrong. Psychologists refer to this as *retrospective rationality or defensive bolstering*.

The presence of commitment marks an important distinction between independent and dependent gatekeepers and between accuracy versus directional goals. Commitment to the principal's interests is the cornerstone of the fiduciary relationship, which, as discussed, describes the link between dependent gatekeepers and their principals. Dependent gatekeepers, as fiduciaries, owe a duty of loyalty to their clients to act on their behalf. They are directed to advance the client's lawful interests and must single-mindedly pursue those interests. The traditional model of lawyering often is referred to as the *total commitment* model [Marie A. Failinger (1999); Roger C. Cramton, (1985); Roger C. Cramton, (2002); Charles P. Curtis, (1951)].

To see how commitment might take hold, consider the role of gatekeepers in a securities offering. The process begins with the issuer, who will look to an investment bank as a lead underwriter. The lead underwriter will investigate the issuer and decide whether to underwrite its securities. After the issuer and underwriter sign a letter of intent, the underwriter's experts and its lawyer's labour, along with the issuer and its attorneys, understand the company from several perspectives and assess its prospects. The effort is a joint commitment by the issuer, the underwriter, and their respective lawyers [Harold S. Bloomenthal & Sam Wolff, (West 2004)]. They have a joint stake in seeing the project through; they share the same directional goal. This group dynamic is vital to understanding gatekeeper behaviour. The role of the auditor, however, is more circumscribed. After undertaking its own investigation, the auditor issues a certificate under its name as to the accuracy and completeness of the financial statements—the goal is accuracy. Commitment, once established, can affect decision making in several ways. Continuing with the example of an offering, it is likely that the decision to participate entails some dissonance because not all aspects of an engagement are likely to be positive, and most transactions entail some risk. After making decisions, one-way people reduce dissonance is to reassure themselves they made the right choice by focusing on information that will lead them to that conclusion. Once a dependent gatekeeper has agreed to an engagement, he has committed himself to the client's ends and is more likely to focus on positive aspects of the choice and downplay negative ones.

This commitment has significant consequences. After executing an underwriting agreement, which generally occurs immediately before the offering closes, an underwriter must continually assess whether the prospectus should be updated or revised not to be materially misleading. However, since directional goals predominate over accuracy goals, an underwriter committed to the transaction has an incentive to filter information to avoid amending the registration statement with negative information, which would impede selling efforts [John J. Jenkins, (1999)]. It was the context of the famous case of *SEC v. Manor Nursing Centers, Inc*. The court held that the appellants, including the underwriters, were duty to amend the prospectus to reflect developments after the SEC declares the registration statement effective. The failure to do so was a violation of the registration provisions and the anti-fraud provisions [Joseph McLaughlin, (2006)].

b. Commitment to Outcome Versus Process

Recent research bridging accountability and commitment reinforces the negative relationship between commitment and accuracy. This line of research distinguishes outcome accountability from process accountability. Outcome accountability is accountability for the outcome of a decision; it is goal-directed. Process accountability is accountability for the quality of the process used to arrive at a decision. Outcome accountability increases commitment to previous decisions about what the outcome should be and leads to defensive bolstering. Outcome-accountable subjects in decision making displayed what is known as more scatter (the presence of irrelevant judgments) than subjects who had to account for procedures or subjects who were not accountable.

Process accountability, by contrast, leads to a better decision-making process, such as more consideration of alternatives and less self-justification. If justification focuses on the process used to make judgments, then accountability can be helpful. Outcome accountability, however, had no beneficial effects whatsoever and was harmful compared to no accountability [Tom R. Tyler &

Stephen L. Blader (2000)]. The distinction between outcome and process accountability mirrors the distinction between directional goals and accuracy goals. The distinction between outcome and process accountability explains the rules concerning gatekeepers discussed below, and it demonstrates the difference between them. Independent gatekeepers are not held accountable for outcomes in the same way dependent gatekeepers are. Special protections exist for independent gatekeepers—particularly auditors— when the client disagrees with the outcome. It is difficult for a public company to terminate an auditor when the client disagrees with the outcome. Terminating an auditor is a public event and must be reported on an SEC form designed to disclose certain material events when they occur. No such protections exist for lawyers.

The dependent gatekeeper's commitment to outcome is closely related to a heuristic called *anchoring and adjustment*. Anchoring and adjustment describe the phenomenon that, in making decisions, we begin with a starting point and adjust our estimates upward or downward insufficiently relative to where we started. Insufficient adjustments result in bias. If a sale item costs $1 and the sign says "limit 10 per customer," you are more likely to leave with seven or eight, although you need only one.162 Similarly, when executives forecast a project's completion, they adjust the estimates based on new information, but they prepare the original estimates making their success case, which skews subsequent forecasts toward optimism [Dan Lovallo and Daniel Kahneman, (2003)]. Dependent gatekeepers are likely to be more prone to bias through anchoring and adjustment than independent gatekeepers. Think again about the offering example. The issuer and its lawyers are the ones who generally draft the initial version of a registration statement [Bloomenthal & Wolff, Johnson & Mclaughlin, Escott v. BarChris Constr. Corp., (S.D.N.Y. 1968)]. In doing so, they are preparing a document they hope will result in a successful distribution. With the assistance of the underwriters, they come up with an initial draft that will then be adjusted based on comments from third parties and the SEC staff. However, the initial draft of the registration statement serves as the anchor, and any amendments must be justified as departures from the original.

Accountants performing an annual audit or analysts researching a public company do not have the same anchors to contend with. They are not wedded to the issuer's numbers. Under Auditing Standard No. 2, auditors must obtain independent evidence, employ professional scepticism, and use the work of others only in limited circumstances. The same is valid for analysts. Instead of using financial data provided by an issuer as an anchor, an analyst may choose instead to use industry averages against which to measure an issuer's performance. In that regard, an underwriter may seek out analysts' views, in the context of an offering, to learn of the strengths and weaknesses of the competition [Johnson & Mclaughlin (2003)].

Given that dependent gatekeepers are accountable to their principals and committed to furthering their ends, careful consideration should be paid to how directional goals and bias may affect their decisions. One cannot ignore the powerful draw that motivations have on judgment and the unconscious bias that can result. Moreover, simple heuristics like acceptability and anchoring can bias judgments as well. If gatekeepers' decisions about whether to stop a transaction from going forward or report wrongdoing to a third person were clear-cut, one would have little cause for concern. Such decisions, however, are highly indeterminate. Part III addresses the indeterminate nature of such decisions and, drawing on the above, what to do about them.

Reforming Gatekeeper Bias

The observations in the earlier section advance the understanding of gatekeeper behaviour. This Part considers recent and potential reforms. The discussion so far suggests two possible paths for reform. One path is to discount the work of dependent gatekeepers. To the extent they are charged with promoting their clients' ends, as discussed in an earlier section, they are prone to directional goals instead of accuracy goals, as discussed in earlier sections, and destined to fail. It appears to be the path suggested by some commenters, who discuss shrinking the scope of underwriter liability [John C. Coffee, Jr., (1997); Donald C. Langevoort (2000)]. Another path is to expand the scope of liability of dependent gatekeepers precisely because of the biases discussed. The observations in Parts I and II regarding the differences among gatekeepers and the tendency to self-justify are magnified because of indeterminacy in the law. One result of indeterminacy is that when one wants to reach a particular result, one often can reach it and then defend the result as reasonable. It is not true to the same degree for independent gatekeepers. While auditors face some ambiguity in the course of an audit, as a general matter, auditors use relatively objective rules that contain few principles and standards, leaving wide latitude for interpretation. If managers sought to influence financial statements improperly, Generally Accepted Accounting Principles (GAAP) inhibit such conduct even if the auditors were willing to oblige. This Part, therefore, begins with a discussion of the indeterminacy inherent in the corporate and securities area.

a. Indeterminacy in Corporate and Security Law

Securities and corporate law are inherently ambiguous for several reasons. First, notwithstanding many technical provisions, the responsibilities of issuers and market professionals often turn on state common law fiduciary duties—a notoriously ambiguous area of the law [Ehud Kamar (1998); Marcel Kahan & Ehud Kamar, (2001)]. It is particularly true for the duty of care, which is an open-ended requirement to exercise the care and skill of an ordinarily prudent person. Courts, particularly in the corporate law area, recognize that the duty to pay attention to corporate matters is inherently ambiguous. In Barnes v. Andrews, Judge Learned Hand remarked, the measure of a director's duties in this regard is uncertain; the courts contenting themselves with vague declarations, such as that a director must give proper attention to the corporate business. The latitude inherent in the duty of care is embodied in the business judgment rule, which provides that, in the absence of fraud or bad faith, courts will not second guess directors' decisions if they turn out badly [Dennis J. Block, Nancy E. Barton & Stephen A. Radin, (5th ed. 1998)].

1. Standard of Care

The ambiguity of the duty of care renders the gatekeeper's responsibilities highly indeterminate. Under the Securities Act of 1933, the underwriter (and others) can defend against a liability claim if it conducts a "reasonable investigation" into the facts disclosed in the registration statement. However, there is little or no guidance on what a reasonable investigation entails, and few litigated cases have been decided on this point. The leading case, *Escott v. Bar Chris Construction Company*, is nearly 40 years old and, in that case, the court stated, "There is no direct authority on this question, no judicial decision defining the degree of diligence which underwriters must exercise to establish their defence under Section 11." The court could not arrive at a rule: "It is impossible to lay down a rigid rule suitable for every case defining the extent to which such verification must go. It is a question of degree, a matter of judgment in each case." More recent cases addressing whether due diligence should be decided by a judge or jury make the same point. In the end, the standard required for due diligence under the Securities Act is the vague duty of care. This standard is now codified in section 11(c) of the Act, which reads, "In determining . . . what constitutes a reasonable investigation and reasonable ground for belief, the standard of reasonableness shall be that required of a prudent man in the management of his property."

2. Materiality Requirement

The law is hard to pin down because at the heart of every disclosure requirement and every claim of fraud under the securities laws is a materiality requirement. The materiality standard turns on the following: [Whether] there is a substantial likelihood that a reasonable shareholder would consider it important in deciding how to vote . . .. Put another way, and there must be a substantial likelihood that the reasonable investor would have viewed the disclosure of the omitted fact as having significantly altered the "total mix" of information made available.

The standard is ambiguous. It depends on what a reasonable investor would decide, which often depends on how a particular judge or regulator views the facts [Yvonne Ching Ling Lee, (2004)]. Attempts to quantify materiality or provide a bright-line rule have been rejected [Staff Accounting Bulletin (Aug. 19, 1999)]. In Basic Inc. v. Levinson, the Supreme Court rejected a bright-line rule to determine when merger negotiations would be considered material, stating that "ease of application alone is not an excuse for ignoring the purposes of the Securities Acts and Congress' policy decisions. Any approach that designates a single fact or occurrence as always determinative of an inherently fact-specific finding such as materiality must necessarily be over-inclusive or under-inclusive [Basic, Inc. v. Levinson, 485 U.S. 224, 236 (1988)].

3. Form of Rules

In addition to these substantive points, corporate and securities law is indeterminate because of the rules themselves. First, securities regulation is often promulgated through standards as opposed to bright-line rules. The conventional distinction between rules and standards is that rules are clear cut and set forth the law ex-ante, whereas standards provide only general principles that judges can apply to a particular set of facts. Rules constrain judicial discretion more than standards. However, standards are common in the securities area. A frequent criticism about the SEC is that it has always resisted bright-line rules to preserve flexibility in enforcement cases. The SEC in many cases, refuses to adopt bright-line rules and instead provides factors that apply flexibly depending on the facts. For example, in the due diligence context, the Commission sought to guide Securities Act Rule 176. In doing so, however, the Commission only set out factors to be considered to determine whether due diligence was met. The rule is inconclusive, and the Commission explicitly left the ultimate conclusion regarding the satisfaction of due diligence to the courts.

A second reason the form of rules in the securities area leads to ambiguity is that litigation is rare. In many cases, rules are pronounced through settled enforcement cases instead of through litigated cases or administrative rulemaking. Most SEC actions and many state law corporate cases, particularly in Delaware, are settled. A legal rule announced through a settlement necessarily lacks the level of specificity that would attend a decision after a litigated case on the merits with a fully developed record. Moreover, when cases do not settle, many are decided at a preliminary stage in the proceedings where the record is not fully developed. Such opinions are likely to be more indeterminate than cases decided later in the proceedings when the record is complete [Jill E. Fisch, (2000)]. Finally, a settlement sidesteps the need for the government to articulate the legal theory on which the action is based and leaves potential questions about its precedential effects.

Indeterminacy has important implications for gatekeepers. Consider two examples of the kinds of decisions gatekeepers must make. First, under new SEC rules governing attorney conduct, the duty to report "up the ladder" is triggered when the attorney "become[s] aware of evidence of a material violation" by the issuer. Material violation is defined as "a material breach of fiduciary duty [Investment Company Act Release No 25,919, 68 Fed. Reg. 6296, 6296 n.7 (Feb. 6, 2003)]. The attorney, therefore, must interpret what constitutes "evidence," what constitutes a "violation" and whether the violation is "material." Since the definition of violation includes a breach of fiduciary duty, the attorney is left to determine when a fiduciary breach has occurred. Second, in the context of public offerings, the underwriter must determine whether the registration statement "contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading [Securities Act § 11, 15 U.S.C. § 77k(a) (2000)]" The underwriter, therefore, must determine when a fact is "untrue," whether it was "material," or whether an omitted fact was "required" or necessary to make other statements "not misleading." In these cases, the gatekeeper consciously or unconsciously may conclude acceptable to the client because of ambiguity in the law.

Finally, it is essential to distinguish the ex-ante from the ex-post perspectives when assessing gatekeepers' conduct. From an ex-post perspective, one could always argue that gatekeepers' actions or inactions were *inappropriate* because they assisted the client with a wrong end. From an ex-ante perspective, a dependent gatekeeper has other values to consider. One such value is client autonomy. The legal system accommodates individual autonomy by giving significant latitude for individual decision making above a floor of clear illegality [Stephen L.Pepper, (1986)]. Dependent gatekeepers have multiple considerations in deciding whether to "report up" in the organization or force an issuer to make certain disclosures. As mentioned, federal securities laws do not require disclosure of all material information; disclosure is only required if an omission renders something that was said misleading. If the attorney discovers something wrong, it must not necessarily be disclosed. It is precisely in the vagary of determining whether the omission is necessary to render other information not misleading that the gatekeeper's biases are likely to take hold.

Section VI: Multiple Corporate Gate Keeping

Gatekeepers and Business Transactions

This Part describes the paradigmatic conception of the gatekeeper as a unitary actor. It then explains the multiple gatekeeper phenomenon, analysing why gatekeepers exist in the context of business transactions and why corporations rely on a multiplicity of gatekeepers in a single business transaction. It then describes potentially adverse consequences arising from the phenomenon.

a. The Unitary Gatekeeper

In laying the theoretical foundation for gatekeeper liability, Reinier Kraakman conceived of the gatekeeper as an actor with the capacity to monitor and control, or at least to influence, the conduct of its corporate client and thereby deter wrongdoing (Reinier H. Kraakman, (1984). Drawing on Gary Becker's seminal work on the economics of crime and punishment [(Gary S. Becker, (1968). Professor Kraakman framed his inquiry as a search for external legal controls that would "yield the 'right amount of compliance with legal rules—bearing in mind that enforcing these duties is itself costly (Kraakman, 1983). He conceived gatekeepers as occupying a position within the larger legal framework and regarded liability as a mechanism to ensure the optimal deterrence of corporate wrongs. In this framework, wrongdoing could be directly deterred by the imposition of liability on corporations and individual corporate managers. Only where supplemental deterrence was required were gatekeepers to face potential liability to provide incentives for them to exercise their ability to monitor and control. Gatekeepers were thus considered in terms of their capacity to deter corporate wrongdoing.

Since Professor Kraakman's pioneering work, scholars have either modelled the liability of a single gatekeeper or analysed the liability of each of several gatekeepers independently of one another. In early work, Howell Jackson considered the possibility of imposing gatekeeper liability on lawyers in the context of advising financial institutions [(Howell E. Jackson, (1993)]. Stephen Choi developed an analytical framework for the role of gatekeepers, taking into account variations in the accuracy with which they monitor and control client conduct [(Choi (1998)] and applied the framework to the position of underwriters in securities offerings. John Coffee, in his book *Gatekeepers*, traced the historical evolution of numerous gatekeeping professions and considered, for each, reforms that would improve the gatekeeping effectiveness of these actors [(John C. Coffee, Jr., (2006)]. Assaf Hamdani modelled the paradigmatic relationship between a gatekeeper and a client and warned of the adverse selection problems that may arise where a gatekeeper cannot distinguish among its clients based on their potential wrongdoing. Numerous other vital contributions have been made (Lawrence A. Cunningham, (2007). Scholars, however, have yet to question the unitary conception of the gatekeeper and, correspondingly, have failed to recognize the interdependencies existing among multiple gatekeepers in terms of their capacity to deter corporate fraud. Professor Kraakman notes that wrongdoing might be deterred by "an interacting network of gatekeepers," at least for complex offences. He does not, however, pursue the insight. Professor Hamdani also observes that legal regimes should consider "market-specific characteristics," such as the "presence of multiple gatekeepers." Hamdani further observes that the presence of multiple gatekeepers "complicates the task of designing an optimal regime of gatekeeper liability" in the context of securities fraud, but notes that the "risk is somewhat mitigated because the third parties involved can often contract privately to ensure that the party best positioned to ensure compliance will ultimately incur the cost of liability."

b. The Multiple Gatekeeper Phenomenon

A pattern of multiple gatekeeper involvement characterizes business transactions. Typically, a corporation will engage a law firm, an accounting firm, and an investment bank (Charles R. Geisst, (1995)—and often several of each—to assist it whenever it undertakes a business transaction of any significance [(James D. Cox et al., (6th ed. 2009)]. Investigating this phenomenon involves asking two questions. First, why do corporations rely on the market for gatekeeping services at all? Why do corporations choose to "buy" these inputs into the transactional process rather than "make" them? Second, having decided to rely on the market for gatekeeping services, why do corporations rely on multiple distinct gatekeepers (F.M. Scherer & David Ross, 1990).

Differentiating Gatekeepers

Collective blame for recent business failures has fallen on gatekeepers. The conventional view is that auditors, lawyers, underwriters, analysts, and others have shirked their responsibilities and permitted illegal conduct. If we clarify and enhance the responsibilities of gatekeepers, some say we will avoid such debacles in the future [Bank of America Corp., (Feb. 4, 2010)]. This claim traditionally depended on a rational actor model. A gatekeeper would prevent misconduct by a primary violator because the gatekeeper's expected liability or reputational harm from failing to prevent misconduct exceeded the benefits gained in fees [Report of the New York City Bar Association (2007)]. Because investors understand a gatekeeper would not act irrationally, his statements are to be believed [John C. Coffee, Jr., (2004) Frank Partnoy, (2004); John C. Coffee, Jr., (2004); Assaf

Hamdani, (2003); Reinier H. Kraakman, (1986); Frank Partnoy, (2001)]. While this model has merits, it fails to distinguish among gatekeepers, likely to respond differently to incentives. It also fails to appreciate differences in the character of a gatekeeper's relationship with a primary violator and to consider whether such differences bear upon gatekeeper behaviour.

This section examines gatekeepers by focusing not on their similarities but their differences. All gatekeepers are not alike. They vary widely in their functions, skills necessary for the job, relationships with their principals, and duties they owe. There are differences in their approaches as well. Accounting determinations, for example, are often formalistic and unambiguous, while legal advice is said to be more nuanced, requiring an attorney to explore a range of options with a client, who evaluates the lawyer's advice and then makes up her mind. The securities analyst, unlike the accountant or lawyer, makes predictions, which are frequently wrong. Distinguishing among the character of gatekeepers' evaluations is helpful, but it masks more considerable differences in the structure of gatekeepers' relationships with their clients.

This section focuses on one difference in the particular that bears closely on whether the gatekeeper can be effective: whether, as a normative matter, the gatekeeper is meant to be independent of the client, acting as a neutral umpire [Dodd-Frank Wall Street Reform and Consumer Protection Act, (2010)], or whether the gatekeeper is meant to be dependent on the client, charged with promoting the client's ends in a fiduciary or similar capacity. The label dependent is used because certain gatekeepers depend on the client to determine their agency's nature, purpose, and scope. Distinguishing between independent and dependent gatekeepers, however, is only a starting point. One also must ask why gatekeepers have not been more robust monitors. At least part of the answer is that the conventional view of the gatekeeper's role is inadequate, focusing on the actions of a single individual rather than the dynamics of the group. Similarly, until recently, Congress, regulators, and courts have relied mainly on a command and control philosophy of governance, rather than addressing biases that can cause one slight misstep but lead incrementally to large scale disasters. Thus, rather than looking at the gatekeeper problem from the perspective of a rational actor, this paper explores it from a behavioural viewpoint.

Harnessing Multiple Gatekeepers Optimality

This Part describes optimal deterrence theory, the prevailing paradigm for considering gatekeeper liability. It then provides a case study involving multiple gatekeepers and develops a simple taxonomy of interactions among gatekeepers that serves as a basis for extending the literature on gatekeeper liability.

A. Optimal Deterrence Theory

1. General Principles

Securities fraud compromises the accuracy of the price of the corporation's securities relative to its fundamental value (Marcel Kahan, 1992). Moreover, thereby reducing social welfare. In the present context, securities fraud concerns intentional, material misstatements or omissions in corporate disclosure in the course of a business transaction (although, of course, securities fraud may also occur outside this context, such as in connection with a corporation's periodic reporting requirements). For securities offerings, in particular, securities fraud typically takes the form of misstatements or omissions in offering documents provided to investors to induce them to purchase the securities. Investors' anticipation of trading on unfavourable terms, rather than simply the existence of inaccurate prices, reduces social welfare (Amanda M. Rose, 2010). Anticipating unfavourable terms, investors may discount the price they are willing to pay for securities. It would increase corporations' cost of capital, leading to its misallocation among corporations and alternative uses (Frank H. Easterbrook & Daniel R. Fischel, 1984). In the secondary market, investors may be reluctant to trade at all. It would reduce securities' liquidity, increase transaction costs, and possibly lead investors to hold non-optimal portfolios. Merritt Fox explains that securities fraud may also reduce the effectiveness of corporate governance mechanisms (Merritt B. Fox, 2009) and may distort a corporation's investment decisions, leading it to reject socially desirable investment projects or accept socially undesirable projects.

Optimal deterrence theory prescribes the legal rules that optimally deter socially harmful conduct. Developed by Steven Shavell and others [(Steven Shavell. 2007, 1987); Guido Calabresi, (1970)] the theory predicts how particular rules of liability will affect the conduct of actors and makes normative claims as to the desirability of those rules based on a particular criterion of social welfare. In predicting the conduct of actors, the framework draws on the expected utility theorem and decision making under risky conditions. It adopts the standard neoclassical assumption of complete and perfect rationality by actors. Accordingly, actors are assumed to behave as if they evaluate and choose among expected consequences at no cost [(Kenneth J. Arrow, (1970). After evaluating expected consequences based on their expected utility, actors will act as if to maximize their expected utility (Steven Shavell. 2007, 1987); Guido Calabresi, (1970)]. In making normative claims about the desirability of legal rules, optimal deterrence theory adopts the social goal of minimizing the sum of the expected social costs of the wrongdoing, the costs of precautions, and the administrative costs associated with enforcement.

Since administrative costs—the costs associated with "detecting, prosecuting, defending, and adjudicating securities fraud cases"—are not within the control of actors, they are set aside for present purposes (although they must, of course, be considered in determining optimal arrangements). Where legal rules lead actors to satisfy this criterion—to minimize the expected social costs of the wrongdoing and the costs of precautions—optimal deterrence is achieved. Acting optimally, actors would, in effect, bear the costs of precautions until their marginal costs exceed the marginal reduction in the costs of expected wrongdoing (David Rosenberg (1987). It follows from the theory that conduct should not be regulated simply because it reduces social welfare (John C. Coffee, Jr., Market (1984). Regulation is costly and desirable only where the social welfare criterion would be satisfied. For similar reasons—because precautions are costly—the optimal level of precautions may not be that which prevents the wrongdoing or even minimizes its probability. Again, this is because desirable precautions are those under which the social welfare criterion would be satisfied. Applying the theory requires that liability rules be finely calibrated: adopting more extraordinary precautions would over-deter securities fraud, just as adopting lesser precautions would under-deter securities fraud.

2. The Gatekeeping Context

As explained above, gatekeepers occupy a position within a broader legal framework. Since a corporation is simply a fictional person, an individual or individuals perform the relevant acts comprising securities fraud. The fraud may be deterred directly by the imposition of potential liability on the corporate enterprise, as well as on individual corporate managers. Such liability would create incentives for the corporation and its managers to take precautions to exercise their control over individual wrongdoers. The fraud may also deter gatekeepers, who have existing incentives—even without those created by gatekeeper liability—to monitor and control corporate conduct. As repeat players expecting to engage in future transactions, gatekeepers have incentives to build and preserve good reputations since a good reputation will enhance a gatekeeper's prospects of acting on future transactions. The reputational mechanism operates to produce incentives for gatekeepers to certify the disclosures of their clients diligently and honestly. Gatekeeper liability would only be desirable to supplement enterprise liability and individual managerial liability where these more direct forms of liability and reputational constraints fail to provide sufficient deterrence (Victor P. Goldberg, (1988). The standard case where gatekeeper liability is desirable arises where the corporation is insolvent. More direct forms of liability would likely then fail to produce sufficient deterrence.

Having situated the gatekeeper in the broader regulatory context, let us now focus on identifying the liability regime that would induce gatekeepers to take optimal precautions to deter securities fraud. Securities fraud is intentional wrongdoing, and individuals are therefore assumed to avoid it without cost. By taking precautions, gatekeepers exercise their capacity to monitor and control the corporation's conduct. As depicted by the diagram above, gatekeepers may exercise this power over both corporate management and other corporate employees. Applying optimal deterrence theory first requires predicting the gatekeeper's response to particular liability regimes in terms of the precautions it takes. For a type of securities fraud, each gatekeeper must choose the particular level of precautions to take as she performs her gatekeeping functions. The probability of the fraud occurring will be a function of the level of precautions taken. Typically, the greater (or, the higher the level of) the precautions, the more likely the securities fraud will be deterred—that is, the lower its probability of occurrence. The gatekeeper must also weigh the cost of precautions. It will choose among levels of precautions—and thus the expected consequences (namely, the securities fraud occurring with a particular probability)—as if it were acting to maximize its expected utility. It will prefer one level of precautions to another only if its consequences yield a more excellent expected utility value. Applying the theory also requires the identification of liability regimes under which gatekeepers will be led to act optimally—that is, to take precautions that would minimize the sum of the costs of the expected wrongdoing and costs of precautions. An optimal regime would thus force gatekeepers to internalize the social costs of their clients' wrongdoing, providing incentives for gatekeepers to invest in a socially optimal level of precautions.

In practical terms, what are precautions for gatekeepers? Precautions represent the mechanisms through which gatekeepers exercise their control over the conduct of their corporate clients and include any activities that affect the probability of securities fraud in the form of disclosure misstatements or omissions. In business transactions they would include fraud-detection and fraud-prevention measures, such as the conduct of due diligence, discussions with management and other personnel about the corporation's operations, and attendance at meetings to draft the offering document. Precautions would also include verifying the information or advice of another gatekeeper and asking for changes to proposed corporate disclosures. In some cases, precautions would include shutting the "gate" to a transaction, such as refusing to provide a written opinion on which execution of the transaction is conditioned.

3. *Analogy with Joint Tortfeasors*

The position of gatekeepers is conceptually similar to that of tortfeasors. Both types of actors must determine what level of precautions to take to deter a particular securities fraud or accident, as the case may be. More specifically, the gatekeeper's position is akin to that of the accidental tortfeasor in a unilateral accident. The gatekeeping context is unilateral in the sense that the victims of any failure by gatekeepers to take adequate precautions—namely, the investors—do not contribute to the risk of securities fraud. Investors typically exercise no control over a corporation's disclosure decisions in business transactions. Gatekeepers' conduct is also more likely to be accidental than intentional. However, the analysis adopted in this Article—identifying liability regimes that will lead gatekeepers to adopt efficient precautions to deter harm—does not turn on a gatekeeper's state of mind (Posner, 2007). One potential distinction between tortfeasors and gatekeepers is that tortfeasors typically contribute to the risk of the accident because of their capacity to create it, whereas gatekeepers contribute to the risk of fraud by having the capacity to deter it. More specifically, gatekeepers contribute to the risk of corporate wrongdoing by having the power to monitor and control corporate conduct, which they may exercise by taking precautions. Thus, gatekeeper liability attaches not for gatekeepers' wrongs—although gatekeepers can indeed inflict harm directly on investors—but for the wrongs attributed to the corporation that could have been optimally deterred by taking precautions by gatekeepers. Gatekeepers' contribution to the risk of wrongdoing is the mirror image of that of most tortfeasors. In any case, for analytical purposes, a strong analogy exists between gatekeeper liability and tortfeasor liability in unilateral accidents.

4. *Limits of Reputation*

Gatekeeper liability would be desirable only where other deterrence measures, including the disciplining effect of reputation on gatekeeper behaviour, are insufficient. The effectiveness of reputation as a constraint on gatekeepers is subject to fundamental limits that are worth briefly exploring (Rachel Brewster (2009). One such critical limit concerns the informational content of reputation and its sensitivity to gatekeeper failure in past transactions. Given the nature of the gatekeeping role, the relevant firm reputation reflects its performance as a certifier of the accuracy of the disclosures of its corporate client—in other words, its reputation for honesty and diligence. However, information about past gatekeeper conduct may not be widely disseminated, and even where it is, it may not allow a reliable assessment of the gatekeepers' performance. In business transactions, much of gatekeepers' work is never publicly disclosed, and, when allegations of securities fraud arise, most disputes settle before the underlying facts are fully ventilated in a trial [(Mitchell Polinsky & Steven Shavell, (2010)]. Even where facts are revealed, perceptions as to propriety differ, and difficulties exist in distinguishing between the conduct of the various actors. Moreover, gatekeepers may well rehabilitate their reputations by changing personnel or improving internal controls. All this suggests that reputations may not be well-calibrated to the quality of gatekeeper performance in past transactions and are thus noisy or crude indicators of gatekeeper performance.

A further potential limit on reputation as a deterrence measure arises because the relevant reputation for constraining misconduct is that of the gatekeeping firm, while the incentives of individuals at the firm may diverge from those of the firm. Since the interests of individuals may diverge from those of the firm, perhaps due to individuals' shorter time horizons, firm reputation will act as an imperfect constraint on individual conduct. Ultimately, though, whether the reputational mechanism is sufficient is an empirical question.

A. Multiple Independent Gatekeepers

In a business transaction involving multiple gatekeepers, gatekeepers will be independent for a particular type of securities fraud where that fraud would be optimally deterred by a single gatekeeper taking precautions. It is the world of the unitary gatekeeper that scholars have inhabited until now. Since optimal deterrence would be served by a single gatekeeper taking precautions, a regime imposing liability on that act alone would be desirable. Borrowing from tort law, that actor should be the "cheapest cost avoider," that is, the actor who can most effectively reduce the cost of accidents. In these circumstances, it would be desirable for the other actors to take no precautions, despite their involvement in the transaction.

A standard of either strict liability or fault-based liability would lead this gatekeeper to take optimal precautions to deter securities fraud. A rule of strict liability under which the lowest-cost gatekeeper would bear liability for all of th e client's wrongdoing would be efficient since it would force the gatekeeper to internalize the social costs of that wrongdoing fully and thus adopt optimal precautions. A fault-based rule would also be efficient, provided the gatekeeper escaped liability only by adopting optimal precautions. Although both rules are efficient, some scholars prefer a rule of strict liability because it leads wrongdoers to engage in the optimal level of activity and relieves courts of determining what constitutes optimal precautions.

B. Multiple Interdependent Gatekeepers

Gatekeepers will be interdependent for a particular wrong where that wrong is optimally deterred by more than one gatekeeper taking precautions. This Section introduces a stylized example in which gatekeepers face a choice among sets of precautions. In consonance with optimal deterrence theory, the gatekeepers evaluate the expected consequences of each choice based on its expected utility and act as if to maximize their expected utility. A particular liability regime is optimal if it would induce gatekeepers to satisfy the social welfare criterion. The following liability regimes are considered:

1. Strict Liability

Consider first whether a regime under which multiple gatekeepers face strict liability for the corporation's wrongdoing would induce the gatekeepers to take optimal precautions. Under this regime, irrespective of fault, the gatekeepers would face liability for the wrongdoing of their corporate client. The gatekeepers must share the liability in some proportion, and because the fault is of no moment under a strict liability regime, they will do so in some fixed proportion unrelated to their respective contributions to the risk of wrongdoing (Lewis A. Kornhauser & Richard L. Revesz, (1989).

Under which liability is apportioned among gatekeepers on a fixed share basis, this regime corresponds to a rule of joint and several liabilities with a right of contribution (Liability Regime (i) above). Joint and several liabilities is a method of apportionment under which each gatekeeper is alternatively liable, at the plaintiff's option, for all or any part of the harm assessed. In other words, from the plaintiff's perspective in any proceedings, the entire liability for the harm assessed may rest on any gatekeeper individually or all gatekeepers collectively. As between the gatekeepers, though, where the regime includes a right of contribution, any gatekeeper that has paid to the plaintiff more than its share of liability, as measured by its contribution to the wrongdoing, may recount that excess from another liable gatekeeper or gatekeepers. Thus, where liability is ultimately apportioned among gatekeepers on a fixed share basis, the regime is equivalent to joint and several liabilities with a right of contribution; whether the plaintiff targets the gatekeepers jointly or severally, the right of contribution ensures liability is ultimately apportioned in fixed shares. Such a strict liability regime may not lead gatekeepers to take optimal precautions. This conclusion follows from the possibility that the gatekeepers may not cooperate but instead may act in isolation from each other in determining whether to take precautions in response to the risk of a particular wrong. The reasons for this are best illustrated with a basic numerical example. Assume that two gatekeepers—a law firm and an accounting firm—contribute to the risk of a particular type of securities fraud, in the sense that both taking precautions optimally deter the fraud. Assume also that if the fraud occurs, it will produce social harm of 1000. Let us consider a strict liability rule that allocates liability equally between the two gatekeepers.

Where both gatekeepers take precautions, the total expected costs of wrongdoing—comprising the sum of the expected costs of wrongdoing and the costs of precautions—would be minimized, and thus optimal deterrence would be achieved. Even considering the costs of both gatekeepers exercising precautions (equal to 14), the total expected costs of securities fraud (equal to 94) would be minimized relative to the costs had only one or neither taken precautions. The question is whether this particular liability regime would induce the gatekeepers to act optimally by taking precautions. Consider the law firm's behaviour. If the accounting firm fails to take precautions, the law firm's liability would be 50 if it also fails to take precautions (representing 50% of the expected costs of corporate wrongdoing of 100) or 45 if it takes precautions (representing 50% of the expected costs of corporate wrongdoing of 90). However, if the accounting firm takes precautions, the law firm's liability would be 45 if it fails to take precautions (representing 50% of the expected costs of 90) or 40 if it also takes precautions (representing 50% of the expected costs of corporate wrongdoing of 80). Whether or not the accounting firm takes precautions, the law firm would reduce its liability by five. However, because the costs of precautions (8) exceed the expected benefits (5), the law firm would lack incentives to take precautions, despite it being socially desirable for the firm to do so.

The accounting firm would face parallel incentives. If the law firm takes precautions, the expected benefit to the accounting firm of taking precautions relative to not taking precautions would be 5 (representing its share of the costs of securities fraud being reduced from 45 to 40). Similarly, if the law firm fails to take precautions, the expected benefit to the accounting firm of taking precautions relative to not taking precautions would be 5 (representing its share of the costs of corporate wrongdoing being reduced from 50 to 45). Like the law firm, however, the accounting firm's costs of precautions (6) exceed the expected benefits from taking precautions (5), and therefore, like the law firm, the accounting firm would not take precautions. Because it fails to ensure that the gatekeepers would adopt precautions, this liability regime is not efficient. Altering the sharing of liability would not change the economic efficiency properties of the liability regime. For example, increasing the accounting firm's share of liability might lead it to take precautions, but it would leave the law firm with even less incentive to take precautions.

Extending the analysis to three or more gatekeepers also would not change the demonstrated inefficiency of this regime. For the intuition behind this, consider a transaction involving an accounting firm, a law firm, and an investment bank, in which all gatekeepers contribute to the risk of corporate wrongdoing. Consider the decision facing the law firm if the investment bank and accounting firm are taking precautions. If the law firm decides against taking precautions, it would be relieved of the cost of precautions and bear only a proportion (1/3 in this example) of the increase in the costs of the wrongdoing arising from it not taking precautions. If the costs of precautions exceed its share of the increase in liability, the gatekeeper will not take precautions.

This example shows why the analysis in the numerical example above is not contingent on the proportions in which the gatekeepers share liability or how many gatekeepers contribute to the risk of wrongdoing. Now consider a strict liability regime in which liability is apportioned jointly and severally but without a right of contribution (Liability Regime (ii) above). Under this regime, each gatekeeper would be held alternatively liable, at the plaintiff's option, for all or any part of the harm assessed. For similar reasons to those provided above, this regime may not lead gatekeepers to take precautions. Consider the same example in which an investment bank and accounting firm take precautions, and a law firm must decide whether to do so. The law firm would decide against taking precautions if the costs exceed the law firm's expected share of liability—an expectation that would depend on the likelihood of the law firm being the plaintiffs' chosen target. As before, this method of apportionment would not guarantee optimal behaviour by the law firm—or, indeed, by any gatekeeper facing that predicament—and thus would be undesirable.

2. *Fault-based Liability*

Let us now consider the desirability of fault-based liability regimes. Under these regimes, a gatekeeper would bear liability only where it fails to take adequate precautions and, correspondingly, is at fault or negligent. The discussion below assumes that the legal standard of care is set equal to the socially optimal level of care and corresponds to the taking of precautions. Consider first the fault-based regime under which liability is apportioned among negligent gatekeepers jointly and severally with rights of contribution (Liability Regime (iii)). Multiple gatekeepers would be led to take precautions. The explanation is apparent in light of two scenarios related to the numerical example above. First, either gatekeeper alone could act negligently by failing to take precautions and avoid the costs of precautions (either 6 or 8) but face a liability of 90. Second, both gatekeepers could act negligently by failing to take precautions and avoid the costs of precautions, but each would face a liability of 50 (representing the total expected costs of corporate wrongdoing of 100 shared equally). As Professor Shavell recognizes in the analogous context of joint tortfeasors, neither of these alternatives can be equilibrium. Each gatekeeper in both scenarios would reason that, whatever the conduct of the other gatekeeper, it is better off taking precautions. Under this regime, a negligent actor would avoid the costs of precautions by failing to take care but would "bear the full brunt of liability" if it alone does not take precautions. Unlike under strict liability, the other gatekeeper will not be required to share liability where it takes precautions. Since social welfare is maximized when all the actors take precautions, the liability borne by the negligent gatekeeper must exceed the costs of precautions avoided. Thus, both gatekeepers would be led to act optimally under this regime by taking precautions.

Parallel incentives arise in scenarios involving more than two gatekeepers. It would not be rational for all gatekeepers to be negligent since, irrespective of how the costs of securities fraud were allocated among the gatekeepers, at least some would have to pay more than they would save by not taking precautions. It is because the aggregate costs of securities fraud exceed the aggregate costs of precautions. Regarding the same liability regime in the similar joint tortfeasor context, Professors Kornhauser and Revesz explain as follows: Any actors who had to pay more than their increased benefits would opt to be non-negligent. However, once those actors chose to be non-negligent, the apportionment rule would allocate damages exceeding their increased benefit to other actors. Regardless of how many actors are negligent, the increase in aggregate damage caused by that negligence would continue to be greater than the increase in the aggregate benefit. It would not be equilibrium for more than one gatekeeper to be negligent. Nor would it be equilibrium for one gatekeeper to be negligent since it would bear the full brunt of liability alone. Correspondingly, the regime creates incentives for all gatekeepers to take precautions. Consider now the same fault-based liability regime but without rights of contribution (Liability Regime (iv)). Where no rights of contribution exist, liability is apportioned according to the preferences of the plaintiff.

This regime is also efficient. A no-contribution regime is equivalent to a rule of contribution "in which an actor's share is her estimate the probability that she will be the one to be held jointly and severally liable and therefore responsible for the full damage." Such a regime thus shares the efficiency properties of a fault-based regime with joint and several liabilities and a right of contribution. Finally, let us consider a fault-based liability regime coupled with several (or non-joint) liabilities only for negligent gatekeepers (Liability Regime (v). In contrast to the joint and several liability frameworks, negligent gatekeepers would not face liability for corporate wrongdoing attributed to non-negligent gatekeepers. They would face liability only for the contribution of negligent gatekeepers, and they would share that liability according to the predetermined basis of sharing. This regime may not be efficient, resulting from the fact that a negligent gatekeeper may face only a fraction of the liability for the securities fraud to which its negligence contributes. The fraction would depend on the method of sharing with other negligent gatekeepers. In the joint tort context, it has been established that whether several liabilities would lead actors to take optimal precautions depends on the benefit and damage functions and the number of actors. In short, a fault-based regime coupled with several liabilities may be inefficient, creating incentives for gatekeepers to act negligently.

C. Summary and Extensions

This Part has analysed the efficiency properties of the main liability regimes for independent and interdependent gatekeeper harms. The analysis showed that either strict or fault-based liability would lead the relevant gatekeeper to take optimal precautions for multiple independent gatekeepers. For multiple interdependent gatekeepers, the analysis showed the following. First, a regime of strict liability under which gatekeepers are jointly and severally liable may not lead gatekeepers to take precautions when it would be desirable for them to do so. This conclusion does not depend on whether rights of contribution exist or how liability is shared among liable gatekeepers. Second, a regime of fault-based liability under which gatekeepers are jointly and severally liable would be efficient, a conclusion that also stands whether or not rights of contribution exist. Finally, a fault-based regime under which gatekeepers are severally liable may not be efficient.

Importantly, gatekeepers have been assumed in the analysis thus far to be capable of bearing the entire liability imposed on them. Incentive problems will arise where this assumption is relaxed. Gatekeepers' incentives to take precautions are diluted, where they are protected from the total liability arising from their activities. In examining the properties of liability regimes for joint torts, and allowing for the potential insolvency of some of the actors, Professors Kornhauser and Revesz show that no general conclusion can be drawn, on efficiency grounds, as to which liability regime is the most desirable, casting doubt on the generality of the results above (Lewis A. Kornhauser & Richard L. Revesz,1990; William M. Landes (1990). The relative efficiency of regimes will depend on factors including, obviously, the particular solvency levels of the actors in question. Once the potential insolvency of an actor is introduced, inefficiencies may arise even under a fault-based regime with joint and several liabilities—the regime shown above to lead gatekeepers to take precautions where doing so would be desirable.

A gatekeeper may be shielded from the full effects of a liability regime by an uncomplicated insufficiency of assets to satisfy the liability that arises from the harm the gatekeeper's activities contribute. The gatekeeper might also be shielded by a legal barrier, such as the principle of limited liability, which protects the assets of owners of incorporated entities from exposure to the corporation's liabilities. Nevertheless, the incentive problems associated with the shielding of liability should not be overstated. To begin, casual empiricism suggests that gatekeepers rarely become insolvent, with the collapse of Arthur Andersen being an obvious exception. The insolvency of the corporation (the gatekeepers' client) is a more common occurrence than the insolvency of gatekeepers and is the basi s upon which an analysis of gatekeeper liability typically proceeds. Furthermore, even though the personal assets of individuals associated with a gatekeeping firm may be protected from exposure to creditors of the firm under the firm's incorporation, individuals' interests will often be closely aligned with those of the firm since a substantial portion of their wealth—indeed, often their livelihood—is tied up in it.

A further factor to consider is the risk of legal error. Even under an efficient liability regime, gatekeepers take optimal precautions, and gatekeepers may be found liable. This result may arise from legal error by a court, inadvertence by gatekeepers, or agency problems within gatekeeping firms. Where legal error exists, the presence of multiple gatekeepers and the consequent sharing of liability would dilute the incentives of gatekeepers individually to take care, relative to scenarios involving a unitary gatekeeper. One response to the problem of inadequate incentives is to require firms to purchase liability insurance, which may counteract the dilution of incentives caused by asset insufficiency. It may also prompt gatekeepers to take more care where insurers can determine the gatekeepers' levels of precautions and link the insurance premium, or other policy terms, to the gatekeepers' precautions. Where insurers cannot do this, gatekeepers' incentives may be further diluted because of the insurance coverage.181 another response is to hold principals of a gatekeeping firm personally liable where the gatekeeping firm cannot meet its debts. A further response is to discipline individuals at gatekeeping firms. Professional self-regulatory organizations might perform such a role. In sum, incentive problems associated with asset insufficiency of gatekeepers may well arise, and various techniques exist for attempting to solve them.

The Concept of Gatekeeper Liability

The analysis above casts fresh doubt on the suitability of strict liability for gatekeepers, at least in contexts characterized by multiple gatekeeper involvement. A prominent scholarly view, however, endorses the application of strict liability to gatekeepers. As Assaf Hamdani, a critic of this view, explains, proponents of strict liability point to the advantages of that standard of liability over fault-based liability. However, crucially, these scholars are operating in a unitary gatekeeper world, assuming that a single gatekeeper acts on a business transaction or that, where multiple gatekeepers are involved, gatekeepers are independently capable of deterring securities fraud. The analysis in this article has shown that such a unitary conception of gatekeepers is unlikely to reflect reality accurately or provide a firm basis for policy prescription. As this analysis has illustrated, for multiple interdependent gatekeepers, strict liability would not necessarily lead gatekeepers to take precautions to deter securities fraud where doing so would be socially desirable.

A related implication of the analysis in this Article concerns the conception of gatekeeper liability as a form of vicarious liability. Under vicarious liability, the wrong of an agent is imputed to its principal, with the principal and agent facing liability jointly and severally. In a sense, the principal is strictly liable for its agent's wrong because liability attaches to the principal without any requirement that the principal is at fault. Under optimal deterrence theory, however, this article has demonstrated that gatekeeper liability may also be conceived of as direct liability, with gatekeepers facing liability directly because of the precautions they take to exercise their power to monitor and control corporate conduct. Conceiving gatekeeper liability as a vicarious liability in the context of business transactions also overlooks the inevitability that gatekeepers already face some measure of deterrence by the vulnerability of their reputations to damage. It follows from this that holding gatekeepers vicariously liable for securities fraud perpetrated by their clients would lead to over-deterrence. It may also lead to the unravelling of gatekeeping markets, as Professor Hamdani has shown for strict liability.

Risk-shifting Among Gatekeepers

Turning now to consider the interactions among multiple gatekeepers in more detail, the question arises as to why gatekeepers would not bargain among themselves to apportion liability efficiently. This question is especially pertinent considering that the underwriter is identified as the prime target of liability under Section 11, yet multiple gatekeepers may contribute the wrongs. According to the Coase Theorem, voluntarily bargaining parties in a world without transaction costs will reach a mutually beneficial—and thus, efficient—an agreement where the opportunity exists for them to do so, provided legal rights are well-defined. While the Theorem was initially formulated in parties bargaining over property rights, its claim applies in the current context. A study of gatekeeper practices in securities transactions reveals that gatekeepers bargain among themselves to apportion liability arising from disclosure wrongs. In response to potential liability under Section 11, underwriters routinely adopt risk-shifting arrangements with other gatekeepers, namely accountants and lawyers. As a condition precedent to underwriting a proposed securities offering, underwriters will receive "comfort letters," which are also often referred to as "negative assurance letters," from other gatekeepers attesting to the accuracy of various parts of the registration statement. These arrangements are directed to non-expertise portions of registration statements since Section 11 imposes liability solely on the underwriter, irrespective of which gatekeeper or gatekeepers contribute to the wrong in question, whereas the (non-underwriter) gatekeeper that authorizes an expertise portion of the registration statement is the prime target of liability for wrongs in those portions.

The risk-shifting framework is depicted graphically below. The corporation's law firm will provide an adverse assurance letter (the linguistic terms of which track Rule 10b-5) attesting that the law firm or relevant individual lawyers are unaware of any material misstatements or omissions in the registration statement. The accounting firm, similarly, will provide to underwriters a comfort letter giving assurance concerning a wide array of financial information throughout the registration statement, including information disclosed in the text, charts, and graphs— information that is separate from the audited financial statements, which are expertise portions of a registration statement.

These risk-shifting arrangements are intended to serve dual purposes. Primarily, the arrangements are designed to apportion liability. They create devices "by which [the underwriters] can recover on a theory of negligent or fraudulent preparation of the [negative assurance or] comfort letter for any liability the underwriters incur to investors, provided sued-upon misrepresentations were also the subject of [such] a . . . letter [Restatement (Third) of the Law Governing Lawyers (2000)]." It would be optimal for these arrangements to allocate liability so that any gatekeeper contributing to a wrong— and not simply the underwriter— would face potential liability and thus have incentives to take precautions to exercise its power to monitor and control the corporation's conduct. More specifically, where multiple gatekeepers contribute to a particular wrong (in the sense that optimally deterring the wrong would require those gatekeepers to take precautions), it would be desirable for the liability regime to lead those gatekeepers to take precautions. Arrangements among gatekeepers are designed to achieve this outcome rather than to leave the underwriter as the sole bearer of liability. The second and related purpose of these risk-shifting arrangements is to buttress the underwriters' due diligence defence. In determining whether the defence is established, the underwriters' "receipt of [a] comfort letter will be important evidence but is insufficient by itself to establish the defence," mainly where red flags exist.

Assessment

The multiple gatekeeper analysis gains the most traction when considering gatekeepers' liability for non-expertise portions of the registration statement. In terms of optimal deterrence theory, the selection of underwriters as the first (and only) line of defence might reflect Congress's intuition that underwriters are either the "cheapest cost avoiders"— and therefore able most effectively among all gatekeepers to reduce the costs of securities fraud—or, to use another Calabresian notion, the "best bribers"—the actors that can most cheaply identify and enter into arrangements with other gatekeepers in order to reduce the costs of securities fraud. Given the securities offering process dynamics, including the likelihood that optimal deterrence will require precautions to be taken by multiple gatekeepers, the "best briber" explanation is the more plausible interpretation. Correspondingly, the Section 11 approach of making underwriters the sole target of liability appears to reflect a nuanced congressional attempt to deal with the possibility that multiple gatekeepers may optimally deter disclosure wrongs. The elaborate risk-shifting framework described above represents a market response to that approach.

The framework may well fail in its apparent mission. The first problem concerns the risk-shifting arrangements among gatekeepers, which appear not to reflect the forces of free bargaining. First, the assurances given to underwriters are carefully framed within the guidance offered by professional regulatory bodies. The assurances are often extraordinarily narrow. Both the American Bar Association (ABA) and the American Institute of Certified Practicing Accountants (AICPA) have issued guidance to their practitioners as to the terms of their letters [ABA Negative Assurance Report (1995)]. In its guidance, the ABA asserts that a "lawyer is not an insurer of the adequacy of the disclosure in an offering document or a 'reputational intermediary." It then describes with approval the following customary qualifications in letters by lawyers: Virtually all negative assurance letters state that counsel does not assume any responsibility for the accuracy, completeness, or fairness of the offering document, except to the extent that specific sections are addressed in a separate opinion or confirmation. Some letters refer to limitations on counsel's professional engagement and the fact that many of the disclosures in an offering document are non-legal. Some state that counsel is relying on the judgment of management or others regarding the adequacy of disclosure. Many [letters] state that counsel has not undertaken to verify the facts contained in the disclosure document.

Compelling Cooperation Among Gatekeepers

One practical challenge this Article presents is operationalising its analysis by identifying scenarios calling for precautions being exercised by multiple gatekeepers. Put differently, what wrongs are optimally deterred by the exercise of precautions by multiple gatekeepers? Once these scenarios are identified, one could compel cooperation to alleviate problems associated with the fragmentation of gatekeeping services. Cooperation in this sense would involve gatekeepers sharing information and expertise to settle particular disclosure questions. The approach would promise to overcome, and thereby discourage, the practices of some clients or gatekeepers of failing to consult with other gatekeepers on some questions and of clients interposing themselves between gatekeepers. The approach would also promise to overcome the rigid separation of functions among various gatekeepers that may produce gaps in oversight as well as gatekeeper attempts to adopt a "head-in-the-sand approach" to avoid having to say "no" to a client [Herbert Smith, Hong Kong IPO Guide 18 (2006)].

One model approach adopted in the United Kingdom and other British Commonwealth jurisdictions is the practice of formal verification meetings for securities offerings, in which the various gatekeepers meet to substantiate the contents of the offering document. So rigorous and detailed is the process that a comprehensive report is often produced that substantiates each material statement of fact in the offering document by referencing independently written material. Multiple gatekeepers will attend to ensure that their collective expertise and knowledge is brought to bear on disclosure issues. The novelty of the approach is that it requires multiple gatekeepers not simply to exercise precautions but to cooperate in doing so. It also diminishes the extent to which gatekeepers may plausibly deny knowledge of information. Such precautions might be expected to deter that form of misconduct susceptible only to the expertise of multiple, specialized actors cooperating to connect the various dots that will reveal fraud.

Verification meetings have their genesis in domestic U.K. offerings. Nevertheless, practices in the U.K., especially for significant transactions, have evolved with the increasing influence in Europe of U.S.- headquartered investment banks, which underwrite major securities offerings. One result has been adopting U.S. due diligence practices in the United Kingdom in securities transactions by corporations seeking to raise funds internationally, including from

U.S. institutional investors [Howell E. Jackson & Eric J. Pan, (2008)]. A significant feature of this trend is the resistance of U.S. investment bankers, familiar with U.S. due diligence practices, to prepare written verification reports for fear that the reports may include "smoking guns" that might be seized upon by plaintiff lawyers in any litigation. The approach of other British Commonwealth jurisdictions, particularly Australia and Singapore, which have been less influenced by U.S. practices, may be more instructive and focus on the discussion below.

Several features of the verification process deserve elaboration. The first is its integrated nature. Multiple advisers, including underwriters, accountants, and lawyers, meet with representatives of the issuer to pool their expertise and knowledge [Institute of Certified Public Accountants of Singapore, Proposed Audit Guidance Statement on Comfort Letters and Other Assistance for Public Offerings of Equity Securities in Singapore 17–18 (2008); Ian M. Ramsay & Baljit K. Sidhu, (1995); Greg Golding (Dec. 31, 2001)]. In Australia, for example, representatives of the issuer and its various advisers form a committee, referred to as the Due Diligence Committee, which formally delegates the verification of particular aspects of the offering document to individual advisers, charging them with responsibility for reporting back to the committee. The committee is responsible for coordinating and overseeing the due diligence process. In Singapore, auditors often participate in verification meetings without the presence of corporate management, perhaps allowing them to speak more openly regarding disclosure issues than they otherwise might.

A second feature concerns the lack of duplication of due diligence. For example, rarely will an underwriter's law firm duplicate the due diligence of the issuer's law firm, as typically occurs in U.S. securities offerings. Instead, for matters in which lawyers are considered to possess suitable expertise, the committee will task the issuer's lawyers with reporting the findings of its due diligence to the committee, which as a body—drawing on the expertise and information of its various members— will determine whether to probe further into various matters as it assesses the accuracy of the offering document. The committee will identify critical issues for investigation, review reports provided to it, and determine what disclosure response is required. Although information and expertise is inevitably pooled, the general approach is for each adviser on the committee to rely without independent verification on the information or advice for which another adviser on the committee has been delegated responsibility [Accounting Professional & Ethical Standards Board, (2009)].

A further feature of the verification process is preparing a written report, which will be provided to the corporate issuer's board of directors. The committee will prepare a verification report to verify material statements of fact and opinion in the offering document in Australia. It will also prepare a key issues report, which details the critical disclosure issues and how they were dealt with, by disclosure or otherwise. The committee will thus coordinate its efforts with the drafting of the offering document. In sum, the verification process involves the pooling of information and expertise, minimal duplication of due diligence, and producing a written report attesting to the accuracy of the relevant offering document.

Formal verification meetings are not a part of securities law practice in the United States. No due diligence report is prepared for securities offerings, and no formal meeting is held at which the numerous gatekeepers simultaneously attempt to verify material statements in the offering document. However, the practice has the distinct advantage of marshalling the various talents of gatekeepers and bringing them to bear on disclosure issues, and perhaps also of dulling incentives that a knowledge-based standard of liability creates to have only a fragmented knowledge of a corporation's activities. Still, the process is expensive, and the issue arises as to whether it would be worth its cost. The production of a report is anathema to U.S. securities law practice. One compromise, though, that would capture many of the benefits and avoid much of the cost would require gatekeepers to meet to discuss any particularly vexing disclosure issues, possibly even in the absence of management. Examples of such issues would include how to disclose the reasons for the departure of a CEO and how to describe the extent of expected losses of a business being acquired. Not every material statement need to be verified. However, any susceptible statements would be discussed to share expertise and knowledge, to the extent that doing so is considered to reduce the risk of securities fraud at an acceptable cost. Carefully framing the terms of such a requirement would be crucial—and the proposal is simply suggested here as food for thought. An alternative proposal in a similar vein would be to permit, or even to require, a gatekeeper not simply to "report up" potential wrongdoing to a corporate client's general counsel or audit committee but to "report across" to other gatekeepers that have the expertise or other characteristics suited to assessing and deterring potential corporate wrongdoing.

Section VII: The Bangladesh Scenario

Appointment of Board of Directors: Upon appointment, the new director should be issued a letter of appointment, written and signed by the Chairman. Such letter would set out the terms of his/her appointment and include: Provision of Directors' Liability insurance and professional indemnity; Access to independent professional advice; Committees; Details regarding any formal process of induction so that he/she is well informed about the operations of the company; Details regarding on-going directors' training and development; and Policy and process of appointing alternates (if permitted); Term of office; The remuneration and benefits if any; Duties and responsibilities; Expected workload and time commitment; How the appointment can be terminated; Obligation to comply with any Board decisions; Confidentiality policy; Conflict of interests policy; and Review processes.

How board evaluations can help prevent Corporate Failures

The pressure to perform: Averting corporate failure is not the only pressure faced by boards. Increasing demands for organizational performance are also increasing performance pressures on boards. Boards are held increasingly accountable for corporate performance. It represents a paradigm shift in management thinking, and the full implications are just dawning upon companies and commentators alike (Pound, 1995). There has been a dramatic rise in shareholder activism over the past two decades. Increased activism increases the power of large institutional investors, who are becoming far more demanding of boards—increasing media and community scrutiny of all aspects of corporate life. Public scrutiny will continue and only intensify community expectations that boards need to be brought to account for the performance of the companies they govern. Governance Failure results in Corporate Scandals, which negatively impact the GDP—reasons behind governance failures: Strategic failure; Control failure; Ethical failure; and Interpersonal relationship failure.

Power and trust in Board–CEO relationships: Ideal Situation

Board power: The board has considerable insights and knowledge, considerable experience from other firms, considerable industrial experience and expertise Finkelstein's suggestion [(1992); Hillman and Dalziel (2003)]. Measuring power from four manifestations: ownership, structure, expertise and prestige. Board trust: board members accept and admit risks for potential mistakes in their evaluations. The board is willing to advise the CEO based on their knowledge, views and ideas. The board openly supplies the management relevant advice based on personal references and evaluations [Butler 1991; Davis et al. 2000, Mayer et al. 1995; Whitener et al. 1998; Gillespie 2003); Gillespie 2003; Van Ees et al. (2009b). *Relational risks:* The CEO would instead seek advice from the board rather than from external consultancies. All board directors actively participate in discussions in board meetings. Board directors are always available to perform tasks whenever managerial need emerges. Board directors are always well prepared for board meetings. Board service tasks: Board advises CEOs on

Bangladesh: Corporate Gatekeepers and Regulators in Capital Market

Name	Core Function	Admin Ministry	Department	Dependent/ Independent	Kind of Gatekeeping	Non-Capital Market (NCM)	Capital Market (CM)	Response To PAC	Response To PUC
Parliamentary Committee on Public Accounts	For monitoring and supervision, each ministry is accountable to this Standing Committee	All	All Public Sector Entities	Independent		√	√	Parliament	
Parliamentary Committee on Public Undertakings	For monitoring and supervision, each PU is accountable to this Standing Committee	All	All Public Sector Entities	Independent		√	√		Parliament
Registrar of Joint Stock Companies	Regulation & Governance of all registered Companies	Ministry of Commerce	Company wing of MoC	Independent	Regulatory	√	√	PAC	PUC
Bangladesh Bank	Regulation and Governance	Ministry of Finance & Banking	Banking wing and BRPD	Independent	Regulatory	√	√		
Securities & Exchange Commission	Regulation & Governance of all Listed securities and Bonds	Ministry of Finance & Banking	Ministry of Finance	Independent	Regulatory	√	√	PAC	PUC
Insurance Regulatory and Dev Authority	Regulation of all Insurance Cos	Ministry of Finance & Banking	Ministry Finance Insurance co Desk	Independent	Regulatory	√	√		
Stock Exchanges	Regulation of all listed securities and bonds	Ministry of Finance & Banking	Ministry of Finance & SEC, IDRA	Dependent	Regulatory		√	PAC	PUC
Institute of CA Bangladesh	Regulation of Auditing and Financial Reporting	Ministry of Commerce	Ministry of Commerce Professional Institutes	Independent	Regulatory Auditing, Reporting and Disciplining members	IFAC, IASB, SAFA, CAPA √	√	PAC	PUC
Institute CMA Bangladesh	Regulation of Cost Audit	Ministry of Commerce	Ministry of Commerce Professional Institutes	Independent	Cost Auditing, Reporting & Disciplining members	√ IFAC, IASB, SAFA, CAPA	√	PAC	PUC
Credit Rating Agencies	Credit Rating	Finance Ministry	SEC, Bangladesh Bank	Independent	Rating Report	IOSCO		PAC	PUC

Continue

Name	Core Function	Admin Ministry	Department	Dependent/ Independent	Kind of Gatekeeping	Non-Capital Market (NCM)	Capital Market (CM)	Response To PAC	Response To PUC
Auditing Firms	Auditing and Certifying Financial Report	ICA Bangladesh		Independent	Certifying the Audit Reports	√	√	PAC	PUC
IPO Managers			Stock Exchanges, SEC, IDRA, BERC	Independent	Certification of future projection	√	√	PAC	PUC
Valuation Firms	Valuation Report		SEC, IDRA, BERC, Stock Exchanges,	Independent	Valuation certificate	√	√	PAC	PUC
Financial Analysts	Analytical Reports	Regulators, Journalists of Print and Electronic Media	SEC, IDRA, BERC, Stock Exchanges,	Independent		√	√	PAC	PUC
Company Directors	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC, RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers, Stock Brokerage Firms	Dependent	All signed reports, information and figures presented in the report, statements made to the press and media and the regulators	√	√	PAC	PUC
Company Secretary	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC, RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers, Stock Brokerage Firms	Dependent	All signed reports, information and figures presented in the report, statements made to the press and media and the regulators	√	√	PAC	PUC

Continue

Name	Core Function	Admin Ministry	Department	Dependent/ Independent	Kind of Gatekeeping	Non-Capital Market (NCM)	Capital Market (CM)	Response To PAC	Response To PUC
Chief Legal Officer	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC, RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers,	Dependent	All signed reports, information and reported figures statements made to press and media and the regulators	√	√	PAC	PUC
Chief Financial Officer	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC, RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers, Stock Brokerage Firms	Dependent	All signed reports, information and figures presented in the report, statements made to the press and media and the regulators	√	√	PAC	PUC
Chief Compliance Officer	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC, RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers, Stock Brokerage Firms	Dependent	All signed reports, information and figures presented in the report, statements made to the press and media and the regulators	√	√	PAC	PUC
Corporate Legal Counsel	Company Policy and Operational decision in line with relevant comm. Codes and Company AA &MA	To all regulators of capital market and comm. Codes, Public interest groups, shareholders and all stakeholders	SEC, IDRA, BERC,.RJSC, Stock Exchanges, Lending Institutions, Merchant Bankers, Stock Brokerage Firms	Independent	All signed reports, information and figures presented in the report, statements made to the press and media and the regulators	√	√	PAC	PUC

Continue

Name	Core Function	Admin Ministry	Department	Dependent/ Independent	Kind of Gatekeeping	Non-Capital Market (NCM)	Capital Market (CM)	Response To PAC	Response To PUC
Bangladesh Energy Regulatory Commission	Regulation of Energy and Electricity Companies	Energy, Power, and Mineral Resources	Energy, Power, and Mineral Resources	Dependent	Licensing, Regulating, Pricing and Reporting	√	√	PAC	PUC
Bangladesh Telecom Regulatory Commission	Regulation of Telco Operators	Ministry of Post and Teleco	Teleco Division	Dependent	Protecting public interest in terms of pricing and quality of services	√	√	PAC	PUC
Bangladesh Road Transport Authority	Construction Maint of Road & Bridges	Ministry of Road and Bridges	Road and Bridge Division	Dependent	Quality Assurance of Constructions, Driving License	√	-	PAC	PUC
Airport Dev Authority	Regulation and construction of Air Ports	Ministry of Civil Aviation & Tourism	Aviation Industry Division	Dependent	Quality Assurance of Industry Services and Pricing of Tickets	√	-	PAC	PUC
Bangladesh Inland Water Transport Authority	Regulating and Developing Inland Water Transport	Ministry of Inland Water Transport	Transport Division	Dependent	Regulation and Quality Assurance of Services and pricings	√	-	PAC	PUC
Director-General Drug Admin	Licensing, Regulation, Pricing, QA, GMP	Ministry of Health & Family Welfare	Drug Admin Division	Dependent	Licensing, QA, Pricing, Supervision of Procurement, Disciplining Manuf. Process	√	-	PAC	PUC

Board of Directors as Corporate Gatekeeper-Bangladesh

Skills of the Board: Topics and Sample Questions		Bangladesh
Topic	Sample Questions	
Defining governance roles	Is the role of a board member clearly defined?	No
	Is the role of a board member well understood	No
	Does the spread of talent within the board reflect the company's needs?	No
	Do all board members bring valuable skills and experience to the company?	No
	Is the board large enough to carry out the work required of it?	No
Improving Board Process		
Board meetings	Do the board papers contain the correct amount and type of information?	No
	Are board members diligent in preparing for meetings?	No
	Are matters relating to the company discussed in a structured manner?	No
Key Board Functions		
Strategy	Does the board know and understand the company's mission, vision and strategy?	No
	Does the board know and keep abreast of trends and issues affecting the company's market competencies?	No
	Does the board understand the business it is governing?	No
Service/advice/contacts Service/advice/contacts	Do board members actively engage in networking for the benefit of the company?	
Monitoring	Do board members have sufficient financial skills to ensure the board can discharge its governance responsibilities?	No
Compliance	Does the company have relevant internal reporting and compliance systems?	No
Risk management	Are board members aware of their risk assessment duties as directors?	No
	Is there a clear understanding of the company's business risk?	
Continuing improvement		
Director development	Does the board encourage directors to pursue opportunities for personal development?	No
Director selection and induction	Does the board have a succession plan in place for the chairperson?	No
	Does the board have a director succession plan in place?	No
	Are there clear and well-understood policies and procedures in place for director selection and induction?	No

Evaluating Board of Directors

Chairperson	Non-executive director	Committee
Advantage Part of leadership role – explicit acceptance by board members. Clear Accountability. Can align the process with the overall board agenda.	Advantage Clear accountability. More independent view. More time to devote to the task. Other leadership experiences/ skills.	Advantage Relieves chairperson/ non-executive director of Workload. Less reliant on the viewpoint of one person. Less subject to individual bias.
Disadvantage Possible bias. Concentration of power, particularly if the CEO is Chairperson. Heavy workload.	Disadvantage Possible bias. Possible effect on board Dynamics. Knowledge of the company will be less than that of the Chairperson.	Disadvantage Longer Process. Demands more excellent resources (time, money)

Skills Experiences and Attributes Metrics of Members of Board of Directors

Skills	Experiences	Attributes
Practical wisdom and good judgment	Specialist knowledge in a specific area	Highest personal and professional, ethical standards and honesty
Financial literacy; ability to read and understand a financial statement	Detailed knowledge of the industry / relevant industry experience	Integrity, independence and free of conflicts of interest
Specialized professional skills: Accounting, Finance, HR, Legal, ICT, Marketing	Expertise in global issues	An enquiring and independent mind
An understanding of key technologies	Experience in other industries using experience gained in one industry for the benefit of a company in another industry	Willingness and commitment to devote the required amount of time to carry out the duties and responsibilities of Board membership, including time to gain knowledge of the industry, prepare for Board meetings and participate in Committees.
Director education – a clear understanding of the duties of a director and knowledge of the Code.		
	High visibility in the field	
Good interpersonal skills and the ability to communicate clearly	Leadership and management experience, especially in related businesses	Commitment to improving the business, its continued well-being and making a difference. Commitment to making this role a significant priority, not serving just for the money or personal interests.
Decision-maker – exploring options and choosing those that have the greatest benefit to the organisation and its performance	International experience	Willingness to represent the best interests of all stakeholders and objectively appraise board and management performance
Risk Management	Personal networks and external Contacts	Critical analysis and judgment
Interpersonal sensitivity – a willingness to keep an open mind and recognise other perspectives		Vision, imagination and foresight
Ability to mentor other directors		Strategic perspective, able to identify opportunities and threats
Strong ability to represent the company to stakeholders		Innovator - a willingness to challenge management and challenge assumptions, stimulate board discussion with new, alternative insights and ideas
Agility to move from advisor to challenger as well as being a robust supporting voice when needed		Curiosity - possessing an intellectual curiosity about the company and the trends impacting it
Advisory skills		Motivation – drive and energy to set and achieve clear objectives and make an impact
		Conscientiousness - clear personal commitment
		Engagement- full participation and proactive as a Board member
		Courage - willingness to deal with challenging issues
		Maturity and discipline to know and maintain the fine line between governance and managerial oversight

Evaluating Corporate Boards and Directors

Who has the knowledge: Category	Information sources	Knowledge benefits	Potential drawbacks
Internal Sources	Board members	Should have critical knowledge on skills, processes, relationships, level of shared understanding	Suffer from biases (such as groupthink). Little understanding of external perceptions of the board. Do not provide a "set of fresh eyes" with which to examine governance processes.
	Chief Executive Officer	Should have a different perspective on all elements of board activity. Critical insight into the advice role of the board. Essential insight into succession issues.	Potentially suffers from biases. Potentially impression manages for the board, particularly on issues of management activities. May have a limited or biased understanding of external Perceptions.
	Senior managers	Generally good insights into communication between the board and management	May not have enough exposure to the Board. Internal company Politics may taint it.
	Other employees	Should have insight into the culture of the organization. The further removed from the board, the less likely employees can comment on actual performance.	Limited exposure to the board
External sources	Owners/members	Understand ownership aims	It will depend on the ownership structure (maybe disparate)
	Customers	Can have unique insights, particularly if the company has very few customers	Most likely will have little insight into how the board operates. Most likely will have little insight into how the board operates.
	Government	Can have insightful views, particularly in certain areas of compliance, if these are critical	Often limited interaction with most companies
	Suppliers	Can have unique insights, particularly if the company has very few suppliers	Most likely will have little insight into how the board operates
	External experts	Proper benchmarking or best practice insights	May not understand company's context
	Other stakeholders	Will depend on the nature of the company	Will depend on the nature of the company

issues related to legal and accounting. Board advises CEOs on issues related to finance Board advises CEOs on issues related to production and technologies. Board advises CEOs on issues related to marketing. Four items are used. They measure board activities related to advising the CEO in functional areas such as legal and accounting, finance, production, technology and marketing. Board control tasks: Board evaluates and controls issues related to budgeting Board evaluates and controls issues related to capital investment Board evaluates and

Potential Benefits of Board Evaluation

Benefits	To organization	To the board	To Individual directors
Leadership	Sets the performance tone and culture of the organization. Role model for CEO and senior management team.	An effective chairperson utilizing a board evaluation demonstrates leadership to the rest of the board Demonstrates long-term focus of the board Leadership behaviours agreed and encouraged	Demonstrates commitment to improvement at an individual level
Role clarity	Enables clear distinction between the roles of the CEO, management and the board. Enables appropriate delegation principles.	Clarifies director and committee roles. Sets a board norm for roles	Clarifies duties of individual directors. Clarifies protection of directors. Clarifies expectations
Teamwork	Builds board/CEO/ management relationships	Builds trust between board members. Encourages active participation. Develops commitment and a sense of ownership. Focuses board attention on duties to stakeholders.	Encourages individual director involvement. Develops commitment and a sense of ownership. Clarifies expectations
Accountability	Improved stakeholder relationships, e.g. investors, financial markets Improved corporate governance standards. Clarifies delegations. Clarifying strategic focus and corporate goals	Ensures board is appropriately monitoring organization	Ensures directors understand their legal duties and responsibilities. Sets performance expectations for individual members.
Decision making	Improves organizational decision making	Clarifying strategic focus. Aids in the identification of skills gaps on the board Improves the board's ability.	Identifies areas where director skills need development. Identifies areas where the director's skills can be better utilised.
Communication	Improved board–CEO Relationships Improves board–management Relationships. Improves stakeholder relationships. Improves stakeholder Relationships	Improves board–management relationships. Builds trust between board members.	Builds personal relationships between individual directors.
Board operation	Ensures an appropriate top-level policy framework exists to guide the organization.	More efficient meetings Better time management	Saves directors' time. Increases effectiveness of individual contributors. Save directors time. Increase effectiveness of individual contribution

Adopted Kiel, G. C., Nicholson, G. J. and Barclay, M. A. (2005) *Board, Director and CEO Evaluation. Sydney:* McGraw-Hill

Moody's Summary Views on Key Corporate Governance Issues

Issue Area	Moody's View
Board Composition and Independence	In our view, both shareholders and creditors benefit from robust board oversight of senior management, adequate independence, and appropriate skills and backgrounds of board members.
Board Leadership	We view that the presence of an independent chair or independent lead director with substantive responsibilities improves board effectiveness.
Ownership and Control Issues	Much depends on context. We tend to have more comfort with widely held firms subject to complete disclosure requirements. Controlled companies present a unique analytical challenge. Controlling owners can operate with a long-term view, in alignment with creditors' interests. However, controlling ownership can have several risks, including the potential for conflicts of interest and abusive related-party transactions.
Takeover Defences	Mixed views, and much depends on context. On the one hand, they may focus on corporate management in the long term and therefore promote alignment with creditors' interests, but they can also entrench management.
Management Quality	Depth and experience of senior management and robust succession-planning processes are areas of particular focus.
Executive Compensation	We are primarily concerned with pay structures and metrics that focus on long-term sustainable performance and alignment with creditors' interests. Shareholders' and creditors' interests in this area may differ.
Internal Controls, Compliance, and Risk Management	A well-functioning and profoundly embedded system of controls an internal checks and balances reduce operational risk and a company' overall risk profile. Effective risk management is a key credit concern.
Shareholder Activism	The more aggressive variety of activism (i.e. by activist hedge funds is primarily negative for creditors since activists may agitate for strategic, financial, and policy changes that may benefit shareholder at creditors' expense. However, there have been cases where activism has led to positive outcomes for creditors.

Adopted: Corporate governance: perspectives from a credit rating agency Consulting editors Steven A. Rosenblum, Karessa L. Cain, and Sabastian V. Niles, Wachtell, Lipton, Rosen & Katz (2014) *NYSE: Corporate Governance Guide* © December

controls issues related to company liquidity situation Board evaluates and controls issues related to risk management four items. They cover board control activities in budget evaluation, capital investment decisions, company liquidity situations, and risk management.

If any state-owned entity, the listed entity in the stock market, privately owned entities, banks and financial institutions follow the above practices, which are required to be supervised by the designated gatekeeper applying the due diligence approach correctly on a time interval and take appropriate action to the wrongdoers the corporate scandals would be reduced. It would help identify the problems with the creation of gatekeeping scandals and punish them, and the others engaged to do more will be restrained.

Section VIII: Summary, Conclusion and Recommendations

Corporate Gatekeepers are intermediaries who provide verification and certification services to investors by pledging their professional reputations—and, by withholding such support, block admission through the gate (Erik F. Gerding, 2006). Law's gatekeeper approach always imposes a monitoring duty but not necessarily a reporting duty: eventual discovery exposes the gatekeeper to liability for the primary violation, not merely a remedy for non-reporting. Even so, the gatekeeper approach is intended to give professionals regulatory incentives to prevent misreporting. Most gatekeepers are paid for their services by the enterprises that retain them; all have stated duties whose breach exposes them to legal liability. Gatekeepers include auditors and attorneys, who work directly with and essentially inside the enterprise. Lawyers advise on transaction design and disclosure. Duties of both auditors and lawyers arise initially from the contract but include a regulatory overlay of professional standards. Gatekeepers also include other transaction participants, such as investment banks and sometimes rating agencies, plus professionals working apart from transactions outside the enterprise, such as securities analysts and possibly stock exchanges and mutual funds. Coffee's list of gatekeepers are auditors, credit rating agencies, securities analysts, investment bankers, and securities lawyers. Known as gatekeeper liability, the liability of professionals for the wrongs of their clients is premised on the ability of professionals to monitor and control their clients' conduct. The imposition of potential liability provides powerful incentives for professionals to exercise their ability to monitor and control, thereby deterring corporate wrongs. Corporate Scandals of the 21st Century: limitations of mainstream corporate governance literature and the need for a new behavioural approach.

Adverse Economic impact of Corporate Scandals resulting from the failure of Corporate Gatekeeping

The number of corporate scandals associated with corporate governance problems in the first decade of this century is extensive. Wikipedia website, for instance, provides a list of more than 75 corporate scandals throughout this period. Their economic relevance is enormous. Table 1 lists 23 selected high profile corporate scandals that, together, have destroyed an estimated US$750 billion of their shareholders' equity. The initial argument is that governance scandals are the direct outcome of a standard set of fourteen interrelated factors detailed ahead, such as excessive concentration of power, ineffective board of directors, the passivity of investors, failure of gatekeepers, poor regulation, lack of the proper ethical tone at the top. Conflicts of interest afflicting gatekeepers, and the corresponding lack of independence, can impair a gatekeeper's reputation and the quality of its certification as to the accuracy of a corporation's disclosures.

Potentially troubling product of the multiple gatekeeper phenomenon is the opportunity it creates for clients to disaggregate their work among multiple gatekeepers for the purpose of minimizing the ability of any individual gatekeeper to deter securities fraud. The adverse effects of such a practice could be exacerbated if the client also interposes itself between the various gatekeepers, rather than allowing them to interact with each other directly. Collective blame for recent business failures has fallen on gatekeepers. The conventional view is that auditors, lawyers, underwriters, analysts, and others have shirked their responsibilities and permitted illegal conduct. For this reason, doubt exists as to whether, if the existing legal barriers were removed, multidisciplinary firms would evolve and be relied upon by corporations undertaking business transactions.

Comparative Gate Keeping in the Developed Market Economies

The gatekeepers most heavily regulated by statute are directors. The current Canadian gatekeeper liability regime for directors is in line with the U.S. model but has not gone the U.K. route of attaching additional liability to the additional responsibilities now placed upon directors, particularly independent directors, as gatekeepers. Unlike the U.S. model and more akin to the *U.K. model, the Canadian model for gatekeeper liability* for lawyers assigns the essential regulatory function to the provincial law societies. The benefit of this model is that the problem of *conflicting standards in the U.S. between the Rules of Professional Conduct*, set by each state Bar Association and the SEC rules does not arise. It is also the case that the law societies are keenly aware of the competing tensions between lawyers' gatekeeping function and the confidentiality requirements that are required generally of all lawyers. However, *there is variation among the law societies to the extent that they have created specific rules to address lawyers*' gatekeeping functions. In the U.S., Sarbanes-Oxley imposed extensive federal regulation on the accounting profession. The act created the Public Company Accounting Oversight Board (PCAOB) to oversee the audit of public companies. *Accounting firms must register with* the PCAOB, which has broad powers to promulgate binding rules and standards, conduct investigations, and impose discipline; by shifting control of the accounting profession to a new body, the PCAOB aims to address the problem of accounting irregularities by establishing auditing standards and imposing professional discipline. The U.K.'s counterpart to the PCOAB is the *Financial Reporting Council* (FRC), an independent regulator for corporate reporting and governance, created in April 2004 under the authority of the C(AICE) Act. The functions of the FRC include: establishing, monitoring, and enforcing accounting and auditing standards; regulating auditors; operating an independent investigation and disciplinary scheme for public interest cases; overseeing the regulatory activities of professional accountancy bodies; and promoting high standards of corporate governance.

Credit Rating Agencies Emerge as GateKeeper

Commentators such as Frank Partnoy see CRAs as possessing little informational value. While initial credit ratings guide purchases, it is unclear whether they provide any information beyond that already reflected in the "price talk" before a fixed instrument is issued. Building on this critique, the best reforms should create incentives for CRAs to generate more excellent informational value while reducing the impact of ratings on markets. In the current *American context,* Partnoy argues that CRAs are important not because they offer valuable information but because they grant issuers "regulatory licenses"— a good rating entitles the issuer to certain advantages related to regulation. The effectiveness of CRA's *gatekeeping role remains an open question*. However, public perception and academic writing suggest that the existing liability regime does not instil confidence in capital markets and that there is room for modernizing securities legislation to improve the current situation. Because of their unique intermediary role in capital markets, *conflicts often arise between an analyst's duty to provide independent, objective advice to investor clients and pressures to support investment banking revenues*. In the current context, buy-side pressures on financial analysts are increasing insignificance. For example, there is an incentive for a mutual fund with extensive holdings in stock to persuade an analyst not to put a "sell" recommendation on the stock that might contribute to a decline in its price. Recent reform efforts regarding the liability of investment advisors in different countries have not focused on their role as corporate gatekeepers. Instead, the focus has been on establishing consumer protection mechanisms to address power imbalances in investment advisors' relationships with customers. The evidence suggests that consumer protection issues are the most pressing concern in this context. In certain instances, there is an overlap between liability introduced for more general consumer protection purposes and liability for failure to perform a corporate gatekeeping function.

Conventional Analysis of Gatekeeper Liability: The primary failure of the traditional analysis of gatekeeper liability is that it did not sufficiently consider the dynamics of the group. Ignoring group dynamics, however, is inconsistent with the way individuals operate in a business environment. This observation is not new. Law and economics scholars, often criticized by proponents of social psychology, recognized long ago that the nature of the corporation could be best understood by placing the individual into the group and recognizing the role of the individual within it. Ignoring group dynamics leads one back to a rational actor model of individualized action and stresses a "bad apples" approach to understanding corporate wrongdoing [John M. Darley (2005)]. It deemphasizes the influence one person or group of persons has on another, such as the interaction of a board of directors or the relationship between and among gatekeepers and their principals. This de-emphasis elides the complicated causes of misbehaviour and may prevent meaningful reform. Analysts of gatekeeper liability have ignored specific root causes of corruption. Corruption can begin with certain small steps that "have their origins in actions that are not themselves corrupt." Small or insignificant actions can spread within an organization, with each subsequent actor rationalizing that their conduct is not much different from conduct that preceded it.

Addressing gatekeepers' behaviour: In addressing gatekeepers' behaviour, ideas of agency cost theory and the nexus-of-contracts approach are overemphasized. This approach focuses on purported contractual relationships, such as an individual director and the corporation. It recognizes that a director's interests may diverge from the shareholders' and it considers ways shareholders can ensure that a director's interests are aligned with shareholders' interests. Under this view, a manager or director's fiduciary duty is nothing more than a safeguard to ensure he makes the right decisions on behalf of investors, as the residual claimants of the firm. However, the individualism characteristic of the contractualist view is inconsistent with board experience and fails as an explanatory theory of the recent business failures. The conventional analysis remains primarily wedded to a "command and control" (as opposed to a self-regulatory) corporate governance model. A command and control model relies on external sanctions and rewards, and a self-regulatory model relies on shaping employees' internal motivations.

Liability of Corporate Gate Keepers: They conceive gatekeepers as occupying a position within the larger legal framework and regarded liability as a mechanism to ensure the optimal deterrence of corporate wrongs. In this framework, wrongdoing could be directly deterred by the imposition of liability on corporations and individual corporate managers. Only where supplemental deterrence was required were gatekeepers to face potential liability to provide prevent misconduct by a primary violator because the gatekeeper's expected liability or reputational harm from failing to prevent misconduct exceeded the benefits gained in fees. While this model has merits, it fails to distinguish among gatekeepers, likely to respond differently to incentives. It also fails to appreciate differences in the character of a gatekeeper's relationship with a primary violator and to consider whether such differences bear upon gatekeeper behaviour. All gatekeepers are not alike. They vary widely in their functions, skills necessary for the job, relationships with their principals, and duties they owe. There are differences in their approaches as well. Accounting determinations, for example, are often formalistic and unambiguous, while legal advice is said to be more nuanced, requiring an attorney to explore a range of options with a client, who evaluates the lawyer's advice and then makes up her mind. The securities analyst, unlike the accountant or lawyer, makes predictions, which are frequently wrong. Distinguishing among the character of gatekeepers' evaluations is helpful, but it masks more considerable differences in the structure of gatekeepers' relationships with their clients.

Under the strict liability regime, irrespective of fault, the gatekeepers would face liability for the wrongdoing of their corporate client. The gatekeepers must share the liability in some proportion, and because the fault is of no moment under a strict liability regime, they will do so in some fixed proportion unrelated to their respective contributions to the risk of wrongdoing (Lewis A. Kornhauser & Richard L. Revesz, (1989).

Compelling Cooperation Among Gatekeepers: Cooperation in this sense would involve gatekeepers sharing information and expertise to settle particular disclosure questions. The approach would promise to overcome, and thereby discourage, the practices of some clients or gatekeepers of failing to consult with other gatekeepers on some questions and of clients interposing themselves between gatekeepers. The approach would also promise to overcome the rigid separation of functions among various gatekeepers that may produce gaps in oversight as well as gatekeeper attempts to adopt a "head-in-the-sand approach" to avoid having to say "no" to a client [Herbert Smith, Hong Kong IPO Guide 18 (2006)]. An alternative proposal in a similar vein would be to permit, or even to require, a gatekeeper not simply to "report up" potential wrongdoing to a corporate client's general counsel or audit committee but to "report across" to other gatekeepers that have the expertise or other characteristics suited to assessing and deterring potential corporate wrongdoing. The treaty sets out the terms on which lawyers and accountants should cooperate, including emphasizing lawyers' professional responsibility to avoid "knowingly [participating] in any prevent misconduct by a primary violator because the gatekeeper's expected liability or reputational harm from failing to prevent misconduct exceeded the benefits gained in fees. While this model has merits, it fails to distinguish among gatekeepers, likely to respond differently to incentives. It also fails to appreciate differences in the character of a gatekeeper's relationship with a primary violator and to consider whether such differences bear upon gatekeeper behaviour. All gatekeepers are not alike. They vary widely in their functions, skills necessary for the job, relationships with their principals, and duties they owe. There are differences in their approaches as well. Accounting determinations, for example, are often formalistic and unambiguous, while legal advice is said to be more nuanced, requiring an attorney to explore a range of options with a client, who evaluates the lawyer's advice and then makes up her mind. The securities analyst, unlike the accountant or lawyer, makes predictions, which are frequently wrong. Distinguishing among the character of gatekeepers' evaluations is helpful, but it masks more considerable differences in the structure of gatekeepers' relationships with their clients.

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Risk-shifting Among Gatekeepers: According to the Coase Theorem, voluntarily bargaining parties in a world without transaction costs will reach a mutually beneficial—and thus, efficient—an agreement where the opportunity exists for them to do so, provided legal rights are well-defined. While the Theorem was initially formulated in parties bargaining over property rights, its claim applies in the current context. A study of gatekeeper practices in securities transactions reveals that gatekeepers bargain among themselves to apportion liability arising from disclosure wrongs. Underwriters routinely adopt risk-shifting arrangements with other gatekeepers, namely accountants and lawyers, in response to potential liability. As a condition precedent to underwriting a proposed securities offering, underwriters will receive "comfort letters," which are also often referred to as "negative assurance letters," from other gatekeepers attesting to the accuracy of various parts of the registration statement.

Reforming Gatekeeping: People adopt positions that are likely to please others. By performing a significant volume of non-audit services for the audit client, the auditor had an overwhelming desire to please the client in the audit itself and continue to generate non-audit business. The SEC recognized this conflict in its own administrative rules adopted before Sarbanes-Oxley and sought to insulate the auditor from improper influence. The SEC prohibited auditors from providing certain non-audit services, such as consulting services, to audit clients because the hefty fees generated by such services could jeopardize the auditor's independence [Revision of the SEC's Auditor Independence Requirements, Securities Act. The auditor serves to correct the biases of managers, who are themselves dependent gatekeepers. The board chooses managers to further the ends of the corporation as a profitable enterprise to the benefit of the shareholders. Bias on the part of the managers is appropriate.

Unchecked; however, such bias can lead to abuse. Thus, the bias of the dependent gatekeeper is held in check by the independent gatekeeper. Rules are designed to combat accountability to a general audience and enhance accuracy-based goals, discussed above. Certifying that an analyst's opinion represents his personal views helps ensure the analyst is not accountable to a third party, such as the issuer he is researching or the investment banking arm of the firm that employs him, which, acting as securities underwriter or strategic advisor, has its own directional goals in mind. Whether recent reforms have caused analysts to become independent once again is unknown. Evidence continues of retaliation and pressure on analysts from company officials and institutional investors to avoid sell recommendations. One should recognize that sell-side analysts have little incentive to issue a "sell" recommendation. Issuers generally do not like a "sell" recommendation because it might cause the stock to decline in value. Some evidence indicates that, in many cases, if enough analysts downgrade the stock, it can cost the CEO their job. The lawyers already have a clear obligation to make a report if they become "aware" of specific evidence. One possibility, therefore, is to require an annual certification to the SEC or the bar that a lawyer, covered by this rule, is either not aware of such evidence or has made the required report. This proposal should entail only modest tangible costs by attorneys (although it would likely result in emotional distress). Those appearing and practising before the SEC already must make the determinations that certification would require.

Conclusion

Recent reforms in the U.S. have not focused on imposing or modifying the liability to which underwriters are subject as gatekeepers. For example, Choi writes that underwriters face strong incentives to act as certifiers; if they can provide credible assurances that an issuer's disclosures are truthful, investors will be willing to pay more for the issuer's securities. *The issuer will then pay more for the underwriter's certification service. There is less need for underwriter liability if they are incentivized to become more independent and arguably better gatekeepers by the market for independent certifiers*. This argument applies to the Canadian context, suggesting that underwriters do not need to be subjected to additional liability. In examining the existing model where the boundaries between law and professional practice are somewhat blurred, and subsystems of liability that apply to various gatekeepers differ both from gatekeeper to gatekeeper and also geographically, it became apparent that participants in the market and other members of the public may not be aware of the extent of the existing corporate gatekeeper liability regime. Awareness of the liability scheme plays a crucial role in developing confidence in capital markets. Accordingly, a final recommendation is made regarding the widespread dissemination and availability of papers that seek to map out the existing gatekeeper liability regime and situate it in the context of recent academic literature and reforms in comparable jurisdictions.

Recommendations

Establishing a private sector-led economic development operation of an efficient capital market is essential, featuring effective corporate governance. Corporate governance rules are generally embedded within the relevant acts, statutes, and laws guiding the corporations defining rights and obligations, including the dos and undo's of different stakeholders of business life. The whole business environment is influenced by complying with the rules of business crafted within the rules and procedures for every manufacturing, financial, service, utility, infrastructure and technology business. These finally create an environment for business that is popularly known as creating a better environment for doing business and for locals and foreigners. In the context of Bangladesh, the following are the recommendation for the improvement of corporate gatekeeping.

1. Ensure compliance with existing rules and procedures of corporate governance and corporate gatekeeping activities to minimize economic damages routing from gatekeeping failures and introduce incentives to reduce gatekeeping failures.
2. Conduct a study on the existing provisions of all corporate statutes framed for public and private sector entities and regulatory agencies to test the compatibility of relevant provisions for corporate keeping line with current market-led economic philosophy and recommend the desired changes to make those market-friendly.
3. Increase coordination among the gatekeeping agencies to share the information so that gap between the gatekeepers gets reduced. Organize workshops and seminars for the cross interest groups on the liabilities of the corporate environment's independent and dependent gate keepers.
4. Conduct extensive research on the comparative study among selective gatekeepers, both dependent and independent gatekeepers roles, responsibilities and liabilities within the country and compare them with developed market economies and emerging developing countries and competing regions of the globe.

Bibliography

Aalders, M. V. C., & Wilthagen, T. (1997). Moving beyond command-and-control: reflexivity in the regulation of occupational safety and health and the environment. Law & Policy, 19(4), 417-445.

Alexandre Di Miceli da Silveira (2013) School of Economics, Management and Accounting, University of São Paulo in his working paper titled 'Corporate Scandals of the 21st Century: limitations of mainstream corporate governance literature and the need for a new behavioral approach.

Amanda M. Rose, (2010). The Multienforcer Approach to Securities Fraud Deterrence: A Critical Analysis, 158 U. PA. L. REV. 2173 (2010).

Amos Tversky & Daniel Kahneman, (1974); Judgment under Uncertainty: Heuristics and Biases JSTOR is an independent not-for-profit organization dedicated to preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.

Amy Shapiro, Who Pays the Auditor Calls the Tune? Auditing Regulation and Clients. Apr. 16, 2007).

Assaf Hamdani, (2003); Concentrated Ownership Revisited: The Idiosyncratic Value of Corporate Control, April 2013 SSRN Electronic Journal DOI:10.2139/ ssrn.2228194

Bank of America Corp., (Feb. 4, 2010). U.S. Securities and Exchange Commission.

Besanko David & Ronald R. Braeutigam, 2008)] Microeconomics. (3d Edition). Hoboken, NJ: John Wiley and Sons, Inc., 2008. Bessen, James, and Michael J. Meurer. "Of Patents and Property." Regulation (Winter 2008/2009): 18–26.

Bow Valley Huskey (Bermuda) Ltd. v. Saint John Shipbuilding Ltd., 3 S.C.R. 1210, para. 62 (1997)

Budd v. Gentra, B102/95, [1996] O.J. 3515 QUICKLAW (Gen. Div.), [1996] 12 O.T.C. 117, aff'd [1998] 43 B.. R. (3d) 27 (Ont. C.A.).

Business Corporations Act, R.S.A., Ch. B-9, § 122 (2000) [hereinafter ABCA].

Business Corporations Act, R.S.B.C., Ch. 57, § 142 (2002) [hereinafter BCBCA].

Business Corporations Act, R.S.C, Ch. C-44 (1985) [hereinafter CBCA].

Business Corporations Act, R.S.O., Ch. B.16, § 134 (1990) [hereinafter OBCA].

Business Corporations Act, R.S.Y., Ch. 20, § 124 (2002) [hereinafter YBCA].

Business Corporations Act, S.N.W.T., Ch. 19, § 123 (1996) [hereinafter NWTBCA].

C.C.&L. Dedicated Enterprise Fund v. Fisherman, 18 B.L.R. (3d) 240 (Ont. Sup. Ct. J. 2001).

Cass R. Sunstein (2004). Valuing Life: A Plea for Disaggregation. 54 Duke Law Journal 385-445 (2004).

Cass R. Sunstein, (1997). Free Markets and Social Justice. Oxford University Press.

CFA Institute, Code of Ethics and Standards of Professional Conduct (2005).

Charles R. Geisst, (1995) Investment Banking in the Financial System, Prentice Hall (31 Dec. 1995).

Choi (1998) The Role of Gerontological Associations in Korea Department of Social Welfare, Seoul National University Department of Social Welfare, Seoul National University, San 56–1, Shinrim-dong, Kwanak-Ku, Seoul 151–742, Korea.

Clifford Rechtschaffen, (1998); impact of environmental hazards by race and income); Clifford Rechtschaffen & Eileen ... L.J. 3, 9-11 (1998).

Companies (Audit, Investigations, and Community Enterprise) Act, 2004, Ch. 27, § 19-20 (U.K), available at http://www.opsi.gov.uk/acts/acts2004/ukpga_20040027_en.pdf [hereinafter C(AICE)].

Dan Ackman, FORBES, (Nov. 30, 2001), Lehman Brothers analyst reports dated October 23, October 24, November 12, November 28 and December 7, 2001. 20 « While Enron Burned, Wall Street Fiddled ", by Dan Ackman . Forbes.com, November 29, 2001

Daniel Kahneman et al. eds., (1982)]. Judgment Under Uncertainty: Heuristics and Biases. Cambridge University Press (1982).

Darcy L. MacPherson, Extending Corporate Criminal Liability? Some Thoughts on Bill C-45, 30 MAN. L.J. 253 (2004).

Darren Sinclair, (1997); Regulatory pluralism: Designing policy mixes for environmental protection. N Gunningham, D Sinclair.

David J. Labhart, (2004); Policing the Market: Congress's Flawed Approach to Securities Law Reform.

David J. Labhart, Securities Analysts: Why These Gatekeepers Have Abandoned Their Post, Disclosure-Based Approach, Capital Markets Inst. (Aug. 2005),

Dennis J. Block, Nancy E. Barton & Stephen A. Radin, (5th ed. 1998). The Business Judgment Rule: Fiduciary Duties of Corporate Directors. Aspen Law & Business, Gaithersburg, Maryland 20878).

Don E. Waldman & Elizabeth J. Jensen, (1998); Theory and Practice Don E. Waldman, Elizabeth J. Jensen ... John Sutton, Technology and Market Structure (Cambridge, MA: MIT Press, 1998); Richard R. Nelson and Sidney G. Winter, "Forces Generating and Limiting Concentration".

Don E. Waldman & Elizabeth J. Jensen, (1998); Industrial Organization: Theory and Practice, which features early coverage of Antitrust, punctuates its modern introduction to industrial organization with relevant empirical data and case studies to show students how to apply theoretical tools.

Donald C. Langevoort, (1993) ;) "Where Were the Lawyers? A Behavioural Inquiry into Lawyers' Responsibility for Clients' Fraud" (1993) 46 Vanderbilt L. Rev., 75.

Dupuis v. Pan American Mines, 7 B.L.R. 288 (Que. S.C. 1979).

Ehud Kamar (1998); A Regulatory Competition Theory of Indeterminacy in Corporate Law, June 2003 Columbia Law Review 98(8) DOI:10.2139/ssrn.412561.

Eliot Spitzer, Office of New York State Attorney General, Conflict Probes Resolved at Citigroup and Morgan-Stanley (Apr. 28, 2003),

Emilios E. Avgouleas, Mechanics and Regulation of Market Abuse: A Legal and Economic Analysis, 366 (2005).

F.M. Scherer & David Ross, (1990). Industrial Market Structure and Economic Performance, University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Fin. Services Authority, Ex-Post Analysis of FSA's Conduct of Business Rules on Conflicts of Interest in Investment Research, (Sept. 2005).

Financial Reporting Council, Regulatory Strategy 2 (2006), http://www.frc.org.uk/about (follow

for Good Governance, Working Paper, 2006), http://www.ccgg.ca/guidelines/executive-compensation/.

Frank H. Easterbrook & Daniel R. Fischel, (1984). Mandatory Disclosure and the Protection of Investors. Chicago Law School, 70 Virginia Law Review 669 (1984).

Frank H. Easterbrook & Daniel R. Fischel, (1991). The Economic Structure of Corporate Law 83 (1991). "Robert D. Rosenbaum, "Foundations of Sand: The Weak Premises Underlying the Current Push for Rule Changes" 17 J. Corp.

Frank Partnoy, (2001)]. The Paradox of Credit Ratings University of San Diego Law School Legal Studies Research Paper Series.

Frank Partnoy, (2004); How and Why Credit Rating Agencies Are Not Like Other Gatekeepers, University of San Diego School of Law.

Frank Partnoy, (2004)]. A Book Note on Infectious Greed: How Deceit and Risk Corrupted the Financial Markets, 8 N. C. Banking I. 289 (2004) (book review).

Frank Partnoy, Barbarians at the Gatekeepers? A Proposal for a Modified Strict Liability Regime 79 WASH. U. L. Q. 491 (2001).

Frederic S. Mishkin, (9th ed. 2010)] Mishkin, Frederick S., Financial Markets and Institutions, 9th ed. (Reading, MA: Addison-Wesley, 2010).

Frederick Mark Gedicks, Suitability Claims and Purchases of Unrecommended Securities: An Agency Theory of Broker-Dealer Liability, 37 ARIZ. ST. L.J. 535, 543.

Gavin Mckenzie, Lawyers and Ethics: Professional Responsibility and Discipline (Thompson Canada 1993).

George J. Stigler, Richard A. Posner (1974). George J. Stigler, "Law Enforcement, Malfeasance, and Compensation of Enforcers," J. L. Stud. 3 (1974): 1; William M. Landes and Richard A. Posner, "The Private Enforcement of Law," J. L. Stud.

Good Governance Guidelines for Principled Executive Compensation, (Canadian Coalition Good Governance, in a speech given to the CFA Conference: Equity and Research Valuation Techniques (Dec. 2005), Gowlings Lafleur Henderson LLP, Investment Advisors' Liability (2001), http://www.gowlings.com/resources/publicationpdfs/InvestmentAdvisorsLiability.pdf (last visited Feb. 20,

Greg Golding (Dec. 31, 2001). Tightening the Screws on Directors: Care, Delegation and Reliance, UNSW Law Journal, Volume 35(1).

Guido Calabresi, (1970). The Costs of Accidents: A Legal and Economic Analysis by Calabresi Guido (1970-09-10), Yale University Press.

Harold S. Bloomenthal & Sam Wolff, (West 2004). Securities and Federal Corporate Law, 2d (Vols. 3, 3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, and 3I Securities Law Series).

Hercules Management Ltd. v. Ernst & Young, 2 S.C.R. 165 (1997) (Can.).

Hercules, supra note 33. Roman Corp. Ltd. v. Peat Marwick Thorne., 11 O.R. 3d 248 [1992].

Hillary A. Sale. (2003).Securities Fraud as Corporate Governance: Reflections upon Federalism. Vanderbilt Law, 56: 859-910.

Howell E. Jackson & Eric J. Pan, (2008)] Regulatory Competition in International Securities Markets: Evidence from Europe - Part II Cardozo Legal Studies Research Paper No. 247 Virginia Law & Business Review, Vol. 3, No. 2, p. 207, 2008.

Howell E. Jackson, (1993). The Analysis of Benefits in Consumer Protection Regulations, Preliminary Draft, http://www.globeinvestor.com/servlet/ ArticleNews/story/ GAM/20030401/CGACCT.http://www.pollara.ca/Library/News/enron.html.http ://www.rotman.utoronto.ca/cmi/papers/CRA_Study_Rousseau.pdf; see also Partnoy, supra note.

Ian M. Ramsay & Baljit K. Sidhu. (1995). Enforcement of corporate rights and duties by shareholders and the Australian Securities Commission: evidence and analysis.

Institute of Certified Public Accountants of Singapore, Proposed Audit Guidance Statement on Comfort Letters and Other Assistance For Public Offerings Of Equity Securities In Singapore 17–18 (2008);

Institutional Shareholder Services, Spotlight on Executive Pay and Board Accountability 38 (2006), http://www.issproxy.com/pdf/2006PostSeasonReportFINAL.pdf (last visited.

International Organization of Securities Commissions, Code of Conduct Fundamentals (Dec. 2004) [IOSCO Code].

International Organization of Securities Commissions, Press Release, Task Force of Securities Investment Dealers Association of Canada, IDA Bulletin # 2663, Policy No. 6 – Part III the Continuing Education Program and Parameters and Guidelines for the Securities Industry Continuing Education Program (November 1999), http://www.ida.ca/Files/BulletinsNotices/Bulletins/B2663_en.pdf.

Investment Dealers Association of Canada, IDA Bulletin # 3332, Discipline Penalties Imposed on Alan Bruce Alexander Thomson – Violations of By-law 29.1 (Sept. 2004), http://www.ida.ca/Files/BulletinsNotices/Bulletins/B3332_en.pdf.

J.B. Campbell. (3d ed. 2001). Campbell Biology 0134851714 / 9780134851716.

James C. Freund. (1975). Anatomy of a Merger: Strategies and Techniques for Corporates, Law of Journal Press.

James D. Cox & Harry L. Munsinger. (1985). Bias in the Boardroom: Psychological Foundations and Legal Implications of Corporate Cohesion, Law and Contemporary Problems, 48, 83–135.

James Kirkbride & Steve Letza, Can the Non-Executive Director Be an Effective Gatekeeper? The Possible Development of a Legal Framework of Accountability, 13 CORP. GOV. 542, 544 (2005).

Jay M. Feinman (2000)]. Gateway 2000, Inc., 202 Brown v. Board of Education, 19, 20, 31, 50 Bush v. Gore, 9 California v. Greenwood, 14 Carnival Cruise Lines, Inc. v. Shute, 200, 201.

Jennifer S. Lerner & Philip E. Tetlock . (1999); Accounting for the Effects of Accountability April 1999.

Jenny B. Davis. (April 2002)]. AN 18TH-CENTURY AMERICAN LAW passed to punish pirates is ... (In September 2002, a three-judge panel had agreed to let the suit continue to trial.).

Jill E. Fisch. (2000)]. Teaching Corporate Governance Through Shareholder Litigation. University of Pennsylvania Carania Carey Law School- Law School Penn Law: Legal Scholarship Repository.

John C. Coffee Jr., The Acquiescent Gatekeeper: Reputational Intermediaries, Auditor Independence and the Governance of Accounting (Columbia Law Sch. Ctr. for Law and Econ., Working Paper No. 191, 2001) (expanding on why gatekeepers might be under-motivated to protect their reputations) [hereinafter Coffee, The Acquiescent Gatekeeper.

John C. Coffee, Jr. (2005). ... on Possible Measures Concerning Credit Rating Agencies' (March 2005) 38 and 87–93.

John C. Coffee, Jr.(2003). Understanding Enron: It is About the Gatekeepers, Stupid (Columbia Law Sch., Working Paper No. 207, July 30,

John C. Coffee, Jr., (2004) Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms, Center/Program Center for Law and Economic Studies, Columbia Law School.

John C. Coffee, Jr. (2004). Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms, 84 B.U. L. Rev. 301, 303 (2004)

John C. Coffee, Jr., (2004). Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms...

John C. Coffee, Jr., (2006). Gatekeepers: The Professions and Corporate Governance. Oxford University Press.

John C. Coffee, Jr., (2006). Gatekeepers: The Role of the Professions in Corporate Governance (Clarendon Lectures In Management Studies). Oxford University Press.

John C. Coffee, Jr., Understanding Enron: "It's About the Gatekeepers, Stupid, 57 BUS. LAW.

John Flood, (2001). Law Abounding: Legalisation Around the North Atlantic, 55 MOD. L. Rev. 1 (1992); John Flood, Megalaw in the U.K .: Professionalism or Corporatism.

Johnson & Mclaughlin. (2003). Educational Accountability and Students with Disabilities: Issues and Challenges First Published September 1, 2003, https://doi.org/10.1177/0895904803254962.

Jon D. Hanson & Douglas A. Kysar.(1999). Taking Behavioralism Seriously: The Problem of Market Manipulation, New York University Law Review, Vol. 74, p. 632, 1999 Harvard Public Law Working Paper No. 08-54.

Jonathan G. Katz, Sec'y, SEC (December 18, 2002). Comment letter from Troutman Sanders, LLP, to Jonathan G. Katz, Sec'y, Sec . Exch. Comm'n (Nov. 22 , 2002).

Joseph McLaughlin, (2006). Corporate Finance and the Securities Laws. Kluwer Law Business.

Kenneth J. Arrow, (1970). Uncertainty and the Evaluation of Public Investment Decisions. American Economic Review, American Economic Association, vol. 60(3), pages 364-378, June.

Kenneth M. Rosen. (2003). " Is There a Role for Lawyers in Preventing Future Enrons ? " forthcoming Villanova Law Review, 2003, p . 48.

Kerr v. Danier Leather Inc., [2005] O.J. No. 5388; [2005] LEXIS 6560. [Ruth, the only version we are able to get is the LEXIS version because Tarlton stopped getting the printed cases, Andy].

Kripps v. Touche Ross, 6 W.W.R. 421 (1997), 33 B.C.L.R. (3d) 254 (C.A.) (leave to appeal refused 225 N.R. 236n (S.C.C. 1997

Larry Ribstein, Limited Liability of Professional Firms after Enron, 29 J. CORP. LAW 427, 429 (2004).

Law Society of Upper Canada, Rules of Professional Conduct R. 2.02(5) CMT. (2005), Law, Law and Econ. Research Paper Series, Paper 5, 2004).

Lawrence A. Cunningham. (2002). Roger C. Cramton, Enron and the Corporate Lawyer: A Primer on Legal and Ethical Issues, 58 Bus. LAW. 143.

Lawrence A. Cunningham, (2004); Francis of Assisi-Performing the Gospel of Life, William B Eerdmans Publishing Company Cambridge UK.

Lawrence A. Cunningham, (2007). Book Review of Gatek view of Gatekeepers: The Preppers: The Professions and Corporations and Corporate Governance by John C. Coffy John C. Coffee, Jr.

Lawrence A. Cunningham, Choosing Gatekeepers: The Financial Statement Insurance Alternative to Auditor Liability, 52 UCLA L. REV. 413 (2004).

Leon Festinger. (1957). A Theory of Cognitive Dissonance Stanford, California: Stanford University Press, 1962.

Leon Festinger.(1962) A theory of cognitive dissonance Stanford, California: Stanford University Press.

Leslie C. Levin, (1994)]. Ethical Decision Making in Context Leslie C. Levin, Lynn Mather. Caplow, Theodore. 1954.

Litigation Release No. 21407 / February 4, 2010, Securities and Exchange Commission V. Bank of America Corporation, Civil Action Nos. 09-6829, 10-0215 (S.D.N.Y.)

Marcel Kahan & Ehud Kamar.(2001). Price Discrimination in the Market for Corporate Law 86 CORNELL L. REV. 1205 (2001) Available at: https:// scholarship.law.cornell.edu/clr/ vol86/iss6/2

Marcel Kahan. (1992). Securities Laws and the Social Costs of Inaccurate Stock Prices, Duke Law Journal 977-1044 (1992)

Margaret M. Blair et al.(2008)]. Locking in Capital: What Corporate Law Achieved for Business Organizers in the Nineteenth Century, 51 UCLA L. Rev.

Marleen A. O'Connor. (2002). The Enron Board: The Perils of Groupthink, 71 U. Cin. L. Rev. 1233, 1273 (2003).

Mass communication series (Voice of America), 2.; Voice of America forum lectures.

Melvin Aron Eisenberg. (1995). The Bargain Principle and Its Limits, 95 HARV. L. REV. 741, 743-

Merritt B. Fox .(2009). Civil Liability and Mandatory Disclosure. Columbia Law Review, Vol. 109, 2009Columbia Law and Economics Working Paper No. 330 ECGI - Law Working Paper No. 109/2008.

Michael A. Hogg. (2005). Effective Leadership in Salient Groups: Revisiting Leader-Member Exchange Theory from the Perspective of the Social Identity Theory of Leadership.

Milton C. Regan, Jr., (2005)]. Eat What you kill. University of Michigan Press, Dec 22, 2005 - Law - 416 pages.

Neil Gunningham & Joseph Rees. (1997). Industry Self-Regulation: An Institutional Perspective. October 1997 Law & Policy 19(4):363 – 414.

Oliver E. Williamson. (1985). Transaction Cost Economics: The Governance of Contractual Relations, Journal of Law and Economics.

Oliver E. Williamson. (1985)]. The Economic Institutions of Capitalism, The Free Press-A division of Macmillan Inc New York.

P. Puri., & A. Pritchard. (2006). The Regulation of Public Auditing in Canada and the United States: Self-Regulation or Government Regulation (Fraser Institute).

Paul M. Healy., & Krishna G. Palepu.(July 2003). Valuation: Using Financial Statements, Text and Cases by Krishna G. Palepu, Paul M. Healy, Victor L. Bernard. Publisher: South-Western College Pub; 3rd Edition (July 31, 2003).

Philip, Augar. (2005). In The Greed Merchants, former investment banker Philip Augar (2005) challenged this characterization of these banks and sought to demonstrate that the investment banks are ridden with conflicts of interest.

Philip E. Tetlock, Linda Skitka., & Richard Boettger. (1989). Social and cognitive strategies for coping with accountability: conformity, complexity, and bolstering (1989). Journal of Personality and Social Psychology

Pollara, Canadians Expect Enron-Like Scandal Here, (May 2002).

Posner .(2007). Research on attention networks as a model for the integration of psychological science. Ann Rev Psychol 58: 1-23, February 2007 Annual Review of Psychology 58(1):123DOI:10.1146/annual.psych.58.110405.085516.

Psychological Bulletin 125(2):255-75 DOI:10.1037/0033-2909.125.2.255.

Public Company Accounting Reform and Investor Protection Act (Sarbanes-Oxley) 18 U.S.C. § Regulators from Major Markets Agrees on Code of Conduct Fundamentals for Credit Rating Agencies.

Rachel Brewster. (2009). Unpacking the State's Reputation. 50 Harvard International Law Journal 231-269 (2009).

Rakesh Khurana & Katharina Pick (2005) The Social Nature of Boards. CONTACT US: Brooklyn Law Review 250 Joralemon Street Brooklyn, NY 11201

Ralph A. Winter, "The Economics of Franchise Contracts," Journal of Law and Economics, 28 (Oct. 1985),

Reinier H. Kraakman . (1986). Gatekeepers: The Anatomy of a Third-Party Enforcement Strategy, Journal of Law, Economics, & Organization Vol. 2, No. 1 (Spring, 1986), pp. 53-104 (52 pages). Oxford University Press.

Reinier Kraakman., & Peter Newman (Eds.)(1998). Third-Party Liability, in Peter Newman, 3 The New Palgrave Dictionary of Economics and the Law 673. Palgrave Macmillan.

Report of the New York City Bar Association. (2007). Tax Report and Letter 1129.

Responding to Notice 2007-21 Concerning Donor-Advised Funds and Supporting Organizations.

Richard W. Painter. (1994). The Moral Interdependence of Corporate Lawyers and Their Clients, 67 S. Cal. L. Rev. 507, 507–584 (1994);

Richard W. Painter, Convergence and Competition in Rules Governing Lawyers and Auditors, 29 J. CORP. L. 397, 400 (2004).

Robert A. Prentice. (2000). The Case of the Irrational Accountant: A Behavioral Insight into Securities Fraud Litigation, Northwestern University Law Review 5, no. 1.

Robert J. Haft. (1995). Text of analysis of key SEC no-action letters, which provides insights and analysis of important SEC no-action and interpretive letters.

Roger C. Cramton. (1985). Faculty-Edited Law Reviews: Yes -- A Statement by Roger C. Cramton rcc10@cornell.edu.

Ronald H. Coase. (1937). The Nature of the Firm-Origins, Evaluation and Development. Oxford University Press.

Ronald J. Gilson., & Reinier H. Kraakman . (1984). Corporate Liability Strategies and the Costs at Legal Control, (1984) 93(5) Yale Law Journal 857–898.

Ronald J. Gilson, "Value Creation by Business Lawyers: Legal Skills and Asset Pricing", (1984) 94 Yale Law Journal.

Ronald J. Gilson. (1984). Ronald J. Gilson and Robert H. Mnookin, "Sharing Among the Human Capitalists: An Economic Inquiry into the Corporate Law Firm and How Partners Split Profits," April 1984. No. 17 I.P.L.

Sean Griffith. (2003. Innovation in Disclosure-Based Shareholder Suits, 69 CASE W. RES.

Securities Industry Committee on Analyst Standards, Setting Analyst Standards: Recommendations for Canadian Securities Industry Analysts (2001), 38 (SICAS Report).

Stephane Rousseau, Enhancing the Accountability of Credit Rating Agencies: The Case for a "Regulatory Strategy (Version 2.1)" hyperlink) (last visited Jan. 19, 2007).

Steven L. Schwarcz. (2005). "Rethinking the Disclosure Paradigm in a World of Complexity," Univ. of Ill. L. Rev.

Steven Shavell (2007). (1987). The Theory of Public Enforcement of Law. School of Law, Harvard University, and National Bureau of Economic Research.

The Ditchley Foundation Conference, Confidence, Control and Compensation: Questions for The Guide to the Professional Conduct of Solicitors, (Nicola Taylor ed., 8th ed. 1999). The Modern Corporation (Sept. 5-7, 2003), At Http://Www.Ditchley.Co.Uk/Page/175/Modern-Corporation.Htm.

Tom R. Tyler., & Stephen L. Blader .(2000). The effect of trust in authority and procedural fairness on cooperation, June 2007. Journal of Applied Psychology 92(3):639-49.

Tom R. Tyler, (2005). Procedural Justice, Published November 25, 2005, by Routledge 1190 Pages.

The United States v. Arthur Young & Co., .(1984). U.S. Reports: the United States v. Arthur Young & Co., 465 U.S. 805.

Ziva Kunda. (1990). The case for motivated reasoning. Psychological Bulletin, 108(3), 480–498. https://doi.org/10.1037/0033-2909.108.3.480.

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Reference:

Thompson, C. (2010). Facebook: Cautionary tales for nurses. Kai Tiaki: Nursing New Zealand, 16(7), 26.

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(Atherton, 2005)

Reference:

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Reference list:

Pet therapy. (n.d.). Retrieved from http://www.holisticonline.com/stress/stress_pet-therapy.htm

In-text citation:

(Pet therapy, n.d.).

Internet – Organisation / Corporate Author

Reference list:

Ministry of Health. (2014). Ebola: Information for the public. Retrieved from http://www.health.govt.nz/your-health/conditions-and-treatments/diseases-andillnesses/ebolainformation-public

In-text citation:

First time cited: (Ministry of Health [MOH], 2014).

Second and subsequent citations: (MOH, 2014).

SPCA New Zealand. (2011). Your dog may be dying from the heat [Press release]. Retrieved from http://www.rnzspca.org.nz/news/press-releases/360-your-dog-may-be-dying-from-the-heat

In-text citation:

(SPCA New Zealand, 2011).

Conference Paper

Reference list:

Williams, J., & Seary, K. (2010). Bridging the divide: Scaffolding the learning experiences of the mature age student. In J. Terrell (Ed.), Making the links: Learning, teaching and high-quality student outcomes. Proceedings of the 9th Conference of the New Zealand Association of Bridging Educators (pp. 104-116). Wellington, New Zealand. In-text citation: (Williams & Seary, 2010).

Conference paper (online)

Reference list:

Cannan, J. (2008). Using practice-based learning at a dual-sector tertiary institution: A discussion of current practice. In R. K. Coll, & K. Hoskyn (Eds.), Working together: Putting the cooperative into cooperative education. Conference proceedings of the New Zealand Association for Cooperative Education, New Plymouth, New Zealand. Retrieved from http://www.nzace.ac.nz/conferences/papers/Proceedings_2008.pdf

MacColl, F., Ker, I., Huband, A., Veith, G., & Taylor, J. (2009, November 12-13). Minimising pedestriancyclist conflict on paths. Paper presented at the Seventh New Zealand Cycling Conference, New Plymouth, New Zealand. Retrieved from http://cyclingconf.org.nz/system/files/NZCyclingConf09_2A_MacColl_PedCycle Conflicts.pdf

In-text citation:

First time cited: (MacColl, Ker, Huband, Veith & Taylor, 2009).

Second and subsequent citations: (MacColl et al., 2009).

Newspaper article

Reference List:

Matthews, L. (2011, November 23). Foodbanks urge the public to give generously. Manawatu Standard, p. 4.

In-text citation:

(Matthews, 2011).

Newspaper article (no author)

Reference list:

Little blue penguins homeward bound. (2011, November 23). Manawatu Standard, p. 5.

In-text citation:

Shorten the title and enclose it in quotation marks. ("Little blue penguins", 2011).

Newspaper (online)

Rogers, C. (2011, November 26). The smartphone could replace wallets. The Dominion Post. Retrieved from http://www.stuff.co.nz/technology/gadgets/6038621/ Smartphone-could-replace-wallets

Thesis (print)

Johnson, S. (2013). Style strategies (Master's thesis). UCOL, Whanganui School of Design, Whanganui, New Zealand.

Thesis (online)

Mann, D. L. (2010). Vision and expertise for interceptive actions in sport (Doctoral dissertation, The University of New South Wales, Sydney, Australia). Retrieved from http://handle.unsw.edu.au/1959.4/44704

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Bangladesh Economic Association
4/C, Eskaton Garden Road
Dhaka-1000, Bangladesh
Tel : 934 5996, Fax : 880-2-934 5996
E-mail : bea.dhaka@gmail.com
Website : bea-bd.org