

Peasant Psychology and Experimental Economics: Analyzing Trust and Reciprocity in Bangladesh

Abul Barkat*
Reshmaan Hussam**

Abstract

The purpose of this study is to comprehend the impact that gender and culture engender on peasant psychology and economic behavior. An analysis of data from an experiment conducted by the authors in rural Bangladesh brings about several significant findings. The basics of the Trust Game theory in experimental economics was followed. The trust game experiment, which was aimed at measuring the levels of trust and reciprocity among the subjects was conducted in the village of Shastipur (Kushtia district, Bangladesh) among illiterate peasants. Results of four similar studies using Trust Games conducted in different countries are used for the purpose of comparing the results of the Bangladesh study. Two of the different country studies measure differences in trust and reciprocity based on the cultural variable, and the other two measure differences with respect to gender effects.

Findings consistently deviate from the expected outcome of standard socioeconomic science model (SSSM), which assumes unbounded rationality and selfishness to predict economic outcomes. Peasants in Bangladesh are found to have comparable trust and higher reciprocity than

* Professor, Economics Department, University of Dhaka, Dhaka, Bangladesh (email: hdrc@bangla.net)

** Worked as Research Assistant, Human Development Research Centre, Dhaka, Bangladesh in 2003. (email: reshma314@hotmail.com).

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those in the other studies, the respondents of all of which were educated undergraduate students. The influence of interdependent peasant culture, patriarchal mentality, and female household management among peasants seem to affect the results to a large extent, contrary to predictions from the SSSM. This is a significant finding, for high trust and reciprocity reflect high potential for successful businesses. Further research in this field should be of high utility in designing innovative ways to foster economic development among peasants.

1. INTRODUCTION

This study attempts to understand the psychology behind common economic decisions made by the peasant class in developing countries. It investigates the effect of culture and gender on the particular group in question: 32 villagers from Shastipur of Kushtia district, Bangladesh. The experimental economic technique of the Trust Game is used to understand the economic behavior and related tendencies within this group. By comprehending the motivation behind economic decisions and recognizing the potential for successful business among the peasants, relevant strategies can be designed and implemented towards improving the welfare of the peasantry who are located in the lower echelon of the class ridden society throughout the world.

In order to understand the basis behind the “games” used in this study, one must first understand the foundations of economics as a social science. These foundations include the concepts of game theory, the Trust game, and behavioral and experimental economics.

The principles of game theory are derived from the standard socioeconomic science model (SSSM). This SSM model claims that all humans are *rational* and make every decision based on *self interest*; this is also an widely accepted view about human instinct and behavior in economic sciences. Thus the SSSM, assuming rationality in all humans requires, justifies and promotes selfish behavior (Smith 2003).

In order to solve a game based on the assumptions of the SSSM, the dominant strategy, or the most preferable, rational strategy of a player, must be identified. From this, the Nash Equilibrium, or the best response to the other players' choice(s) can be obtained.

This study deals with an experimental economic game known as the Trust Game. This anonymous, non-repeated, cooperative game is useful to experimental economists and psychologists because it, unlike many other similar games, provides direct feedback on relative degrees of trust and reciprocity among

participants and also offers the greatest scope for “...exploring the human instinct for social exchange, and how it is affected by contextual, reward, and procedural conditions” (Smith, *Neuroeconomics*).

Since *experimental economics* is a new horizon in Bangladesh, it would be appropriate to delineate some of the pertinent foundational issues and principles which were followed in the study. First of all, simply speaking, in trust and reciprocity, trust shows a proposer’s behavior about his/her extent of investment intention, and reciprocity depicts the responder’s behavior about his/her extent of acceptance or response, which might be of either positive or negative nature. This field of experimental economics attempts to assess human capacity to communicate intentions through actions. Trust may be defined as the amount of faith the first mover in a game has in a second mover to recognize his/her intentions and reciprocate correspondingly. The fundamental aspects of reciprocity are elegantly addressed by McCabe *et. al* (2002) as follows: “Reciprocity is defined as the costly behavior of the second mover that rewards the first based on both the gains from exchange to the second mover as well as the second mover’s beliefs about the intentions in motivating the action of the first mover”. The most pertinent question in this field of experimental economics is to find out what motivates the choice of the proposer’s trust and responder’s reciprocity?

During the past two decades quite a lot of work has been conducted on “trust”, and recently philosophical interest in it seems to have gained momentum. One major dimension that becomes obvious in the relevant literature is that the word, “trust”, means many different things to many researchers. Depending on who one follows or whom one reads, trust is an emotion, an environment, a set of beliefs, an encapsulation of self-interest or a counterweight to self-interest. It is obvious that, the operation of the trust mechanism requires and contributes to an environment of trust, and it affects people’s emotions, beliefs, and mind-set. It is also widely believed that a society in which the trust mechanism is strong is one in which individuals are trusting and trustworthy. Such a society has great normative attractions. We want to feel that “our security is guaranteed by the benevolence, conscientiousness or reciprocity of others, not merely by their fear of legal sanctions” (Becker 1996), and given the cost of legal sanctions, it will be easier to achieve cooperation if we are confident of each other’s trustworthiness and good will.

The contemporary literature on *economics of reciprocity* concludes that deviations from the predictions of the self-regarding preferences model are explained by positive or negative reciprocity or related motivations such as trust in positive reciprocity or fear of negative reciprocity (Fehr and Gächter 2000). Fehr and

Gächter defined reciprocity as follows: “Reciprocity means that in response to friendly actions, people are frequently much nicer and much more cooperative than predicted by the self-interest model; conversely, in response to hostile actions they are frequently much more nasty and even brutal” (2000). They draw a clear distinction between reciprocity and *altruism*: “Reciprocity is also fundamentally different from altruism. Altruism is a form of *unconditional kindness*; that is, altruism given does not emerge as a response to altruism received” (Fehr and Gächter 2000).

In order to better comprehend the essence of the game, it would also be useful to note at this point that Fehr and Gächter, in criticizing the applicability of the trust (or investment) game to a variety of environments, have forwarded the following useful interpretations: “Positive reciprocity has been documented in many trust or gift exchange games (for example, Fehr, Kirchsteiger, and Riedl 1993; Berg, Dickhaut, and McCabe 1995; McCabe, Rassenti, and Smith 1996). In a trust game, for example, a Proposer receives an amount of money x from the experimenter, and then can send between zero and x to the Responder. The experimenter then *triples* the amount sent, which we term y , so the Responder has $3y$. The Responder is then free to return anything between zero and $3y$ to the Proposer. It turns out that many Proposers send money and many Responders give back some money” (Fehr and Gächter 2000). The key problem with the predictive ability of the empirically substantiated conclusion of positive reciprocity showing that many proposers send, and responders give back money in trust game is that the data generated using single-game experimental design *do not* discriminate between the actions motivated by reciprocity and actions motivated by altruism. Proposing more money and/or returning more money may well be because of altruism rather than trust or reciprocity in sharing benefits (profit). But what will happen when altruism is a part of community norms and values? Therefore, the results of trust-reciprocity experiment may not be perfectly dichotomous by nature – across culture (i.e, *ecological rationality* works).

In the trust and reciprocity experiment, participants are separated into two groups, one to be used to measure trust and the other to be used to measure reciprocity, while experimenters facilitate a monetary exchange between anonymous partners from each group. Every participant begins the game with a set amount of money. The exchange involves a player from one group deciding to give none, some, or all of his/her money to his/her anonymous partner; however, before the given amount reaches the partner, the amount is tripled by the experimenter. The anonymous receiver then decides to return none, some, or all of the [tripled] money back to his/her partner. The amount of money given is used to measure trust, and the amount of money received is used to measure reciprocity. Based on the canonical model in which self-interest is the guiding motivation behind

economic decisions, backward induction leads to the subgame perfect Nash Equilibrium being that the receiver returns no money, and thus the sender sends no money (*i.e.* no transaction in the game).

In behavioral game theory, bargaining games such as the trust game can be analyzed in one of the two ways: an *outcome-based approach* or an *intention-based approach* (McCabe *et. al* 2002). The outcome-based approach claims that only the actions – not the intentions – of the players must be known in order to solve a game. This approach is based on the SSSM and is an example of constructivist rationality, or the idea that all social institutions are created by human rationality. Constructivist rationality would claim that, in the trust game, the sender will send no money, and thus no exchange will take place.

The intention-based approach to analyzing the trust game shows several deviations from the SSSM. Under the rules of the trust game, one can see that the sender must deviate from his/her subgame perfect strategy by *trusting* the partner in order to achieve a future benefit. Furthermore, the receiver must positively reciprocate based on his/her beliefs of the sender's intentions (McCabe *et. al* 2002). The concept of ecological rationality, in which human reason is used to examine the behavior of individuals based on their experience and cultural/ folk knowledge, also plays a key role in accurately analyzing the trust game (Smith 2003).

Experimental economics generally uses the approach of ecological rationality to understanding the predictive abilities of economic models. Vernon Smith (the 2002 *Nobel Laureate in Economic Sciences*) pioneered the field of experimental economics, recognizing the human capacity to communicate intentions through actions. Smith's research in human behavior through experiments and simulations of everyday economic transactions has provided a new and highly innovative form of research which allows economists, sociologists, and psychologists to recognize innate human characteristics such as altruism, punishment, trust, and reciprocity through simple games. These aspects of human behavior, which had never before played a significant role in game theory, are now approaching the forefront of psychological, behavioral, and economic thought.

Because the experiment which this study focuses on was conducted on peasants in Bangladesh, it is crucial to understand the lifestyle of and psychology behind "*communicating intentions through actions*" of such a subject. In this study, the term "*peasant*" refers to people belonging to lower echelon of the class society—but not necessarily extreme poverty ridden—who are largely agricultural, and have no literacy (or who are effectively illiterate) or lack knowledge of industrial market transactions.

In most developing countries, peasant life involves a significant amount of interdependence among the villagers. The agricultural base of a village entails that members of the village trust and depend on one another for assistance when necessary (not necessarily only during natural disasters or calamities). Though a village as a whole may be self-sufficient, each peasant cannot survive without the rest. Kinship and family identity are also especially strong among peasants. In Bangladesh, a village is often made up of only a few extended families. The nuclear family holds little significance; children are raised with multiple guardians rather than just the mother and father. Furthermore, adult males hold a considerable amount of authority in the village. Patriarchal norms and values (accordingly the mental frame) of the peasants affect everyday relations between men and women, and thus might play a role in transactions in trust games as well.

Amartya Sen (the 1998 *Nobel Laureate in Economic Sciences*), a leading welfare economist, attributes certain peasant behaviors and mentalities to the effects of famine. He refers to famine as the failure of exchange entitlement, or the failure to effectively exchange and distribute goods. Sen believes that famines are caused not so much by endowment failure or scarcity of food as by adverse changes in the entitlement of the poor (*i.e.* deterioration in *exchange entitlement*). Peasant psychology is in turn affected by the fear of famine (endemic or epidemic) and the lack of entitlement, opportunity, and freedom for the poor (Sen 1987).

The complexities of communicating human intentions through actions (in terms of both monetary and non-monetary exchanges) may also be seen in the framework of *human capability*. This human capability depends upon many things, and may be expressed in very many ways including income, expenditure, nature of transitory shocks (temporary or permanent) to income, asset ownership, state of access to public resources, state of investment in human capital, social capital, social relations (strength/weaknesses of friendship and kinship networks), personal security, culture, community resources, dignity, autonomy, natural environments etc (Baulch 1996, Sen 1985, 1987, Fulkingham and Namazie 2002, Barkat 2003). All these dimensions which determine human capability with variations in degree by context are important in deciding an individual's action in communicating intentions in general, and that relating to the poor and illiterate peasants of the underdeveloped agrarian economy of Bangladesh, in particular.

2. PROCEDURE

The detailed experimental procedure for the Trust game, as conducted in Shastipur, is described in the Box-A below. The experimental game was played, following procedures delineated above, in 3 groups—male, female, and mixed. The information in Box-B depicts some useful demo-economic and social characteristics of the area in which the study was conducted.

Box A: Trust Game Procedure
as conducted in Shastipur village of Kushtia district, Bangladesh

1. [for first group] Choose 12 players; six male, six female.
[for second group] Choose 10 female players.
[for third group] Choose 10 male players.
2. [for first group] List names randomly on chart, making sure that there are three males and three females each in both Groups A and B, and that players are always paired with members of the opposite sex. [for second and third groups] List names randomly on chart, dividing the players into Group A and Group B evenly.
3. Take all players into Briefing Room; give them an explanation and demonstration of the game.
4. Move Group A into Waiting Room A and Group B into Waiting Room B.
5. Call A1 into the Market Room. Give him/her 50 taka, review key points of game, and ask A1 what he/she wants to do with the money (invest none, some, or all of the money). Record amount invested on chart, and take back the 50 taka, assuring the player that the final amount will be given to him/her at the end of the game.
6. Send A1 to his/her respective interviewer.
7. Multiply the amount A1 invested by three, and keep this money at hand.
8. Call B1 into the Market Room. Give him/her 50 taka, review key points of game, hand him/her money from A1 [times three], and ask B1 if he/she wishes to keep all the money, return some, or return all.
9. Record amount returned on chart, and take back all the money, assuring the player that the final amount will be given to him/her at the end of the game.
10. Send B1 to his/her respective interviewer.
11. [for first group] Repeat steps 5-10 for A2/B2 through A6/B6.
[for second and third groups] Repeat steps 5-10 for A2/B2 through A5/B5.
12. After all players have completed the game, calculate final earnings and give each player his/her respective amounts.

Experimental Procedure as conducted by Abul Barkat and Reshmaan Hussam in Shastipur village, Bangladesh, August 2003

Box B: Demo-economic and social characteristics of Shastipur, Bangladesh

Location: Shastipur Masjid Para, Shastipur Village, Alampur Union, Kushtia District.

Population: Total of 4,308 with 2,240 males and 2,068 females.

Number of Households: 958.

Alampur Union monthly income range: Males: 3000-4000 Tk., females: 500-800 Tk.

Mother's Club of Swastipur Masjid Para:

- Established in 2002 by a local non-government organization named *Manob Sakti Unnayan Kendra* (MSUK)
- Mothers get together four to five days a week to play games, talk about health and living, learn about business networking
- There are doctor visits and field nurses; a veterinary doctor visits several times a year for lectures and demonstrations on poultry, dairy, fish culture, etc.

3. DISCUSSION

This study focused on two variables: cultural differences and differences based on sex. To understand how significant an effect culture and folk knowledge had on the Bangladesh peasants' decisions about communicating economic intentions through actions, findings of the study have been compared with those of similar studies from Sweden and Tanzania. The studies in Sweden and Tanzania were conducted by Anders Danielson and Hakan Holm of Sweden in 2003. Both the studies focused on undergraduate students. However, the cultural differences between Sweden and Tanzania are immense: Sweden is a highly developed, industrialized, post modern country with social-democratic institutions and values, while Tanzania is a poor developing country with high extent of corruption and insignificant industrial activity. The cultural differences between the players from these countries and the players from Bangladesh are even greater, for the players from Bangladesh are poor, illiterate peasants from a densely populated agricultural developing country. To facilitate an in-depth understanding about the differences of the three countries, a comparative country profile with select key indicators is presented in Table 1.

Table 1: Comparative Country Profile: Sweden, Tanzania, Bangladesh

Indicators	Sweden	Tanzania	Bangladesh
Population (in million)	9.0	35.9	138.1
Population density (person/sq.Km)	22	41	1,061
Per capita GNI (US\$)	28,840	290	400
GDP (in million US\$)	300,795	9,872	51,897
Per capita merchandise export (US\$)	11,215	28	49
High technology export as % of manufactured export	21	2	0
Value added as % of GDP:			
Industry	28	17	27
Services	70	40	52
Agriculture	2	43	22
Life expectancy at birth (in years)	80	43	62
Adult literacy rate (% population 15 and above)	92	77	41
Under-5 mortality rate (per 1000)	3	165	73
Population below poverty line (%):			
National	...	35.7	49.8
Rural	...	38.7	53.0
Urban	36.6
% population below 1 \$ a day	...	19.9	36.0

Source: World Bank 2004 (World Development Report 2005). Per capita merchandise export is estimated by the authors based on the same data source.

Notes: The country profile presented in the Table shows a general macro-level situation, and not the situation of the study subjects in Sweden and Tanzania i.e. the undergraduate students, and the study subjects in Bangladesh – the peasantry.

Before presenting the analysis of the empirical results of the trust and reciprocity experimentation with the Bangladesh's peasantry, it would be methodologically worthwhile to present the formulas which were used to calculate trust and reciprocity in the study. The following methodology shown in Box-C was applied in measuring trust and reciprocity in the Bangladesh study. The detailed empirical results of the experiment are presented in the Transaction Charts (see Table 5).

Box C: Methodology of Calculating Trust and Reciprocity
<p>C = Initial Capital of Player A (50 Tk.) A = Amount sent to Player B from Player A TRUST = $A \div C$ M = Amount received by Player B from Player A through the Market ($3 \times A$) B = Amount returned to Player A from Player B RECIPROCITY = $B \div M$</p>

Based on the comparison of cross-culture trust and reciprocity shown in Table 2, it is apparent that *trust levels* for all three countries are nearly identical. This result is inconsistent with the received view that the income of countries is proportional to the amount of trust, implying that a high-income country such as Sweden should have high trust while a low income country such as Bangladesh should have comparatively lower trust (Danielson and Holm 2003).

**Table 2: Cultural Comparisons in Trust and Reciprocity:
Sweden, Tanzania, Bangladesh**

Trust and Reciprocity by culture	Sweden	Tanzania	Bangladesh*
Average Trust (%)	51	53	53
Average Reciprocity (%)	35	37	53

*Authors' estimation based on data presented in Table 5 (Transaction Charts)

There are several factors which may have led to these results. The simultaneity effect, in which two completely different aspects of a population in an experiment lead to similar results, may have occurred between the level of market knowledge and the level of kinship among participants. In both Tanzania and Sweden, participants are undergraduate students who had taken or were taking an introductory course in Economics. Their experience with market transactions and the general principles of economics is, therefore, significantly higher than that of

the peasants of Bangladesh. Greater familiarity with economic principles could have led to a better understanding of the motivations behind the game, and thus higher levels of trust. With the Bangladeshi peasants, however, there is a greater sense of community and kinship among the participants, which is a characteristic of Bengali peasant culture. This sense of community may have also led to greater trust—even among anonymous strangers – which thus balanced out the effect of a lack of market knowledge.

Unlike trust levels, the *average level of reciprocity* shown by peasants in Bangladesh is significantly higher than those shown by the participants (undergraduate students) in both Sweden and Tanzania studies (Table 2). This result is again reflective of the culture, folk knowledge, and environment of the peasants. Inequity aversion has likely played a significant role in the decisions of the peasants. Inequity aversion occurs when a player feels uncomfortable while facing a situation where inequality exist, and does everything in his/her power to decrease the disparity between the two unequals. In the case of the receiver in the trust game, he/she may return more money than is predicted by the SSSM in order to restore monetary equality between himself/herself and the partner. Sharing is essential to the well-being of a Bangladeshi village; this strong emphasis placed on equality leads to the possibility that peasants have an unusually high level of inequity aversion, and thus greater reciprocity (than those in Sweden or Tanzania).

A study conducted in 15 small-scale societies by Henrich *et. al* in 2001 also provides some insight into the motivations behind the behavior of the peasants. Henrich's study is based on the Ultimatum game, a game similar to the Trust game. However, the Ultimatum game tests altruism and generosity rather than trust. The game conducted in 12 countries around the world has produced results that violate the canonical model (the SSSM) to a huge extent. Based on the SSSM, senders in the Ultimatum game (as in the Trust game) were expected to send nothing. However, some societies, such as the Lamelara of Indonesia, had a mean offer of 58%. Henrich *et.al* have explained these deviations in terms of cultural norms of each society. Concepts of gift-giving, sharing, and stealing have been found to exert significant influence on how participants behaved in this game. Similar results can be found in Bangladesh. In a peasant society, sharing of one's wealth is necessary for the community to survive and prosper. Dependence on others from outside the nuclear family leads to significantly higher degrees of trust as well as reciprocity.

Overall, the significant deviations from the Nash Equilibrium of the Ultimatum game lends support to the idea that the SSSM can not be an accurate method of predicting market behavior, especially in developing, agriculture-dominated, non-industrial settings.

The study conducted in Shastipur provides several insights among and between sexes of peasants in Bangladesh as well. Certain findings are consistent with results of studies conducted in other countries in which gender was a variable, which may be a sign of certain universal, innate characteristics of males or females in monetary exchanges. Our findings from Bangladesh however, completely contradict the results of other studies; this may signify a unique feature of Bangladeshi peasants, or may be due to experimental error, or due partly to both.

With respect to gender differences in trust and reciprocity, findings of the Bangladesh study have been compared with those conducted at the University of Melbourne in Australia by Chaudhuri and Gangadharan in 2002 and a cumulative study conducted in the USA, China, Japan, and Korea by Buchan and Croson in 1999. Table 3 presents the summary of the results of the three studies.

Table 3: Gender Comparisons in Trust and Reciprocity

Trust and Reciprocity by sex	Buchan/ Croson		Chaudhuri/ Gangadharan		Barkat/ Hussam*	
	Male	Female	Male	Female	Male	Female
Average Trust (%)	69.64	63.04	53.00	34.70	71.25	35.00
Average Reciprocity (%)	28.60	37.40	14.70	19.80	54.88	51.25

* Notes: Authors' estimate based on data presented in Table 5 (Transaction Charts). Overall *male trust* is the average of sum total of trust of ID# A4, A5, A6 in Group I, and A1, A2, A3, A4 and A5 in Group III; similarly overall *female trust* is the average sum total of trust of ID# A1, A2, A3, in Group I and A1, A2, A3, A4 and A5 in Group II. The overall *male reciprocity* is an average of sum total of reciprocity displayed by the ID# B1, B2, B3 in Group I, and B1, B2, B2, B4, and B5 in Group III. Similarly, the overall *female reciprocity* is the average of sum total of reciprocity displayed by the ID# B4, B5, B6 in Group I, and B1, B2, B3, B4, B5 in Group II. Names and sex of all participants with ID # is shown in Table 5.

Buchan and Croson's study has found that there is no significant difference between the amount of trust exhibited by males and that exhibited by females. They find, however, that females exhibit greater reciprocity than males, and conclude that females "...tend to be more generous and socially oriented...". The results from Bangladesh completely contradict these findings. The average levels of trust between males and females differ significantly; males exhibit more

than twice as much trust as females. Chaudhuri and Gangadharan's study also show significantly lower levels of trust among females, but not to the same extent. In the Bangladesh study, this lack of trust among females (as compared to the males) may be due to the insecurity of a female member of peasant family or a female member in a patriarchal underdeveloped rural setting. The role of a woman in peasant society is to provide food for and raise her family. Children are the woman's responsibility, and as a mother, risk-taking is not warranted. Unlike the female participants in Buchan and Croson's studies, who are educated and are familiar with business, the female member of peasant family of Bangladesh have a much narrower lifestyle – denoted by some economist as a 3D lifestyle, meaning *distress, destitution, and deprivation; eat last and least* – which do not allow taking risks (Barkat 2003).

As for reciprocity, although the Bangladeshi peasants exhibit greater overall reciprocity than those in the other studies, there is no significant difference in reciprocity between the sexes. This also contradicts Buchan and Croson's study, in which the women return approximately 10% more to their senders than the men did.

Results for trust and reciprocity behavior *between* the sexes in Bangladesh also provide several thought provoking insights. Although partners were anonymous and the sex of one's partner was not revealed to any participant by the experimenter, the setup of the game unintentionally allowed subjects to induce whether a partner of the same sex was more likely than one of the opposite sex. While males display considerable trust and reciprocity when paired with other males, far less trust and reciprocity are exhibited when males are paired with females or females are paired with other females. Male senders have sent an average of only 47% to females, but an average of 86% to males; similarly, male receivers returned an average of only 27% to females, but an average of 71% to males (Table 4). On the other hand, female senders have sent an average of 33% to males and a marginally higher 36% to females, while the performance of females exhibit a return of 42% to males and 57% to females. The general pattern evident from Table 4 is male-to-male trust and reciprocity are highly pronounced compared to any other combination (male-to-female, female-to-male, and female-to-female). Another interesting finding is that, the female-to-female trust (36%) is much lower than the female-to-female reciprocity (57%)—this invariably leads to raise a pertinent question to be explored in the future experimental economics as to why the females trust them less but reciprocate more?

Table 4: Inter and Intra-Gender Comparisons in Trust and Reciprocity: Bangladesh Study

Gender	Average Trust (%)		Average Reciprocity (%)	
	Male	Female	Male	Female
Male	86	47	74	27
Female	33	36	42	57

Source: Authors' estimate based on data obtained by the authors in the Shastipur experiment which are presented in Table 5 (Transaction Charts)

The high trust and reciprocity among the males, and lack of trust and reciprocity of males vis-a-vis females may be due to the patriarchal nature of village societies, in which men control and command over most of the monetary aspects of a family/village. Overall, participants seem more comfortable (both in trust and reciprocity) in dealing with members of the same sex; however, men are *more so* than women.

4. CONCLUSION

The results of the Shastipur study offer several unexpected findings. Overall, peasants exhibit significantly higher levels of trust and [particularly] reciprocity than is predicted by the SSSM. Though gender differences within the group show that women are far less trustworthy and comparable in reciprocity with men, these differences are not consistent with results from the other country studies. Some discrepancies can be attributed to experimental error and inconsistencies of this study with the other studies; in particular, language, stake size, subject size, artificiality, and experimenter interference. The context in which the directions were put may have altered the peasants' understanding of the game and its purpose; because directions were translated from English to Bengali, the meanings of certain terms may have been conveyed in a manner that are not fully consistent with the other studies. Furthermore, it cannot be assumed that the stake size (initial endowment) was subjectively controlled across studies conducted in different countries. If a standard stake size (for example, a day's wage or any other standardized size adjusted with cost of living) was set for Trust game universally, results may have been more robust for the purpose of comparison. The Bangladesh study subject size is also comparatively smaller than those of other studies, which may have led to discrepancies in results. This might be attributable to the widely held belief that the larger the pool of subjects, the more valid the data.

Artificiality and experimenter interference could have led to discrepancies in the data generated as well. Because players used money that was given to them (an artifact of the game), their behavior in handling it may have been less authentic; an experiment in which the subjects' own money is used as an initial endowment may produce more accurate results. Experimenters in the Shastipur study also may have contributed to the artificiality of the game because they have had a far greater role to play than in standard Trust games. Because the subjects were all illiterate, experimenters had to physically handle the money and facilitate the transaction, so there might have been some superficiality in the way the players behaved. Rather than being double blind (blind to both partner and experimenter) as in all the other studies, the Bangladesh experiment has been single blind (blind only to the partner). If members of the same class facilitated the exchange, the study results might have been more accurate.

Even with consideration to possible experimental limitations, the results of the Shastipur study deviate strikingly from the standard socioeconomic science model. Peasants in the Shastipur study have been found to have comparable trust and higher reciprocity than those in the other studies, participants in all of which are educated undergraduate students. The influence of interdependent peasant culture, patriarchal norms, values and mind-set, and female household management – all may have influenced the results of the Bangladesh study to a large extent, contrary to predictions from the SSSM. This is a significant finding, for high trust and reciprocity reflect high potential for the establishment of successful businesses. Further research in this field is critical in order to devise more effective strategies to foster economic development among peasants.

5. PRACTICAL APPLICATIONS AND FURTHER RESEARCH

This study offers several practical applications which can potentially improve the welfare of the lower echelon of the class society in developing countries such as Bangladesh as well as accelerate the overall economic development of such countries.

The study in Shastipur has shown that women exhibit significantly less trust in transactions than men, and that transactions involving women are similarly less efficient (females gained less on average than males; see Table 5). This research provides further support for the efforts being made to institute business immersion programs aimed at women in the lower echelon of village community. Business programs for women, if established and managed over a long period of time, could guide females towards adapting to a market environment and thus help the overall development of the poor peasantry. Furthermore, based on the levels of trust and reciprocity which the people of Shastipur have displayed, certain

businesses have the potential for being truly successful in a peasant economy. An investigation into possible enterprises that are best suited to the peasant situation may lead to the development of activities, generating tangible improvements in the welfare of the peasants, particularly in South Asia.

Table 5: Transaction Charts

MIXED (Group I)

Group A

ID #	Name	A=Tk. Sent	B= Tk. Received (from B)	Final Amount [Tk.]	Trust: $A \div C$ (%)
A1 (F)	Monjura	20	10	40	40
A2 (F)	Rezi	20	20	50	40
A3 (F)	Rina	10	10	50	20
A4 (M)	Bablu	20	20	50	40
A5 (M)	Shahidul	20	30	60	40
A6 (M)	Ramzan	30	40	60	60

Note: F = female, M = male

Average: 40%

Group B

ID #	Name	M= Tk. Received	B= Tk. Returned (to A)	Final Amount [Tk.]	Reciprocity $B \div M$ (%)
B1 (M)	Alam	60	10	100	16.7
B2 (M)	Atar Ali	60	20	90	33.3
B3 (M)	Daud	30	10	70	33.3
B4 (F)	Kutilla	60	20	90	33.3
B5 (F)	Monira	60	30	80	50.0
B6 (F)	Romesa	90	40	100	44.0

Average 35.1%

FEMALES (Group II)

Group A

ID #	Name	A= Tk. Sen	B= Tk. Received (from B)	Final Amount [Tk.]	Trust: $A \div C$ (%)
A1	Romesa (2)	20	60	90	40
A2	Rina (2)	20	30	60	40
A3	Mojurun	20	10	40	40
A4	Maleka	20	50	80	40
A5	Nur Jahan	10	10	50	20

Average: 36%

Group B

ID #	Name	M= Tk. Received	B= Tk. Returned (to A)	Final Amount [Tk.]	Reciprocity: $B \div M$ (%)
B1	Aleya	60	60	50	100
B2	Majeda	60	30	80	50
B3	Rupjan	60	10	100	16.7
B4	Akila	60	50	60	83.3
B5	Johora	30	10	70	33.3

Average: 56.7%

MALES (Group III)

Group A

ID #	Name	A= Tk. Sent	B= Tk. Received (from B)	Final Amount [Tk.]	Trust: $A \div C$ (%)
A1	Rashed	15	25	60	30
A2	Ruhul	50	75	75	100
A3	Monohor	50	150	150	100
A4	Yunus	50	150	150	100
A5	Muksed	50	75	75	100

Average: 86%

Group B

ID #	Name	M= Tk. Returned	B= Tk. Received (to A)	Final Amount [Tk.]	Reciprocity: B ÷ M (%)
B1	Niyamot	45	25	70	55.6
B2	Syedul	150	75	125	50
B3	Lalukha	150	150	50	100
B4	Harun	150	150	50	100
B5	Dobir	150	75	125	50

Average: 71.1%

The concept of experimental economics has been applied for the first time in Bangladesh in the Shastipur study. The public and private sector commercial banks and the non-governmental microfinance institutions of Bangladesh, which provide loans to Bangladesh's poor (e.g. Grameen Bank, BRAC, ASA, Proshika, and many other microcredit NGOs) are therefore not familiar with the findings from this kind of study. The high levels of trust and reciprocity among the poor which the study reveals can be of high utility to microcredit providers and other relevant financial institutions. Trust and [particularly] reciprocity have direct correlation with interest rates and loan recovery; banks can use the results of such research to devise appropriate means and ways of fostering business and economic efficiency in villages for their own benefit as well as that of their customers.

In order to make these applications truly successful, further research in the field of experimental economics and peasant welfare is necessary. Other games in experimental economics, such as the Ultimatum Game, the Dictator game, and various Auction simulations, may be explored with groups similar to the one in Shastipur. The Shastipur study has shown that there is a great deal of latent and unexplored potential in relation to trust and reciprocity among the people of Shastipur. Studies may be undertaken to find out whether this is also true in the case of people in other villages and in respect of other characteristics such as altruism and generosity.

In order to understand how significantly culture, socio-economic status variables, and nationality affect a population, experimental studies may also be carried out across classes, occupational groups, and cultures. Results could potentially transform national and international trade policies and relations between developed and developing countries, because the commonly held belief is that the

poorer the country, the lower the trust. However, the findings of this study clearly contradict that view. Would this deviation from the results of standard socioeconomic science model (SSSM) analysis also hold among all the population of a developing country? Answers can possibly be found, to a large extent, by conducting appropriately designed studies using foundations of experimental economics.

Advances in experimental economics must be pursued as well. The predictive value of the results of experimental economics depends largely on how descriptions of the context are related as well as what are the biographical characteristics of the individuals they are addressed to. Relating types of characteristics to an individual's memory-sensory system through brain-imaging could provide a significant contribution to increasing the accuracy of experimental economics. The field of neuroeconomics, in which the internal order of the mind is investigated in relation to individual decision making, social exchange, and institutions such as markets, could benefit greatly from such advances in neuroscience (Smith, *Neuroeconomics*).

A final area of further research which could potentially lead to considerable development in traditional economic thought is in revising—or perhaps creating—a new standard socioeconomic science model. All the experiments undertaken in this study have generated one identical result: deviation from the SSSM. With further research, a new SSSM can be established in which the intentions and ethics/morals of players are taken into consideration and quantified when predicting possible outcomes.

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