






TRUST AND COMMUNICATION INFLUENCE ON FARM PERFORMANCE FOR PADDY FARMERS: A STUDY IN BANGLADESH

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ABSTRACT

Farmers are currently moving toward business relationships and forming close ties with business partners in the supply chain. Close business ties reduce costs, enhance efficiency, improve profit, increase competitive advantage and build personal relationships. Utilizing strategic relationship elements such as trust and communication has significant importance for farmers and marketers. This study assessed the influence of trust and communication on farm performance of paddy farmers' in Bangladesh. Data was collected through quantitative survey-based interviews with 356 farmers from the Mymensingh District, Bangladesh. Descriptive analysis was used to summarize the farmers' demographic details and exchange relationship with their preferred paddy buyer. Partial least squares structural equation modeling (PLS-SEM) was used to test the hypotheses. The findings revealed that trust and communication contributed to promoting paddy farmers' farm performance, especially profit, sales, and cash flow growth. The study findings offer farmers a basis for developing long-term business relationships by applying trust and communication to establish, maintain, and enhance farm performance.

Contribution/Originality: This study is one of the first attempts to investigate the influence of trust and communication on farm performance in Bangladesh. It also contributes to the existing literature on the importance of long-term business relationship in agriculture sector specifically from paddy farmers' perspective.

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1. INTRODUCTION

Bangladesh is the fourth largest rice producer globally (Shanbandeh, 2019), and about 77% of people in Bangladesh depend on agriculture directly or indirectly for their livelihood (Quddus & Kropp, 2020). Most of the farmers in Bangladesh are poor and their farm size is small (Rahman, 2017). Bangladeshi paddy farmers do not obtain fair

economic returns (Hoque, 2019). The syndicate formed between intermediaries and paddy traders denies farmers a fair price (Ray, 2018). Moreover, limited access to market information diminishes farmers' bargaining power, handicapping them from fair prices (Quddus & Kropp, 2020). These challenges cause farmers to be dependent on dominant buyers (Osmani & Hossain, 2015). While trust and communication have been built over the years in farmers' relationships with their paddy buyers, value creation receives less attention than transactional exchange (Mujeri, 2019). The challenges cause many farmers to face obstacles in achieving an economic return. Both farmers and buyers behaviors increase the development of trust in a business alliance (Murshid, 2011). There is enormous potential in the process of economic return for the farmers, especially in developing countries (Linh, Long, Chi, Tam, & Lebailly, 2019). One of the most practical and sustainable solutions for farmers is to use the influence of relational elements as an exchange strategy (Boniface, 2011). Fortunately, trust and communication are crucial aspects of a relationship that farmers can rely on to succeed in business. Undeniably, the transformation from transaction to value creation has been a robust advancement in the business environment (Brennan, Baines, & Garneau, 2003; Egan, 2011). Interestingly, these arguments and knowledge have minimum practical value when no strong empirical foundation exists (Narteh, Agbemabiese, Kodua, & Braimah, 2013). Therefore, additional empirical research is indispensable to develop a strong foundation between trust, communication and farm performance. The concept of this study emerged from prior studies on the relationship between trust, communication, and farm performance. However, research on the influence of trust and communication on farm performance lacked the deserved attention (Boniface, 2011). Several studies utilized trust (e.g., (Aji, 2016; Batt, 2003; Lobo, Leckie, & Li, 2013)) and communication (e.g., (Bich, Tuoi, & Batt, 2016; Zaefarian, Thiesbrummel, Henneberg, & Naudé, 2017)) in the agricultural context and encouraged the present study on farmers' perspectives within the relationship.

Farm performance is viewed as financial and economic performance that uses identical measurements, such as sale growth, profit growth, market share, return on investment (ROI), and cash flow relative to competitors (Kavak, Sertoğlu, & Tektaş, 2016; Lobo et al., 2013). This study measures farm performance using sales growth, profit growth, and cash flow. The low education level limits the small farmers' capability to comprehend basic business practices, such as record-keeping and gross margin analysis (Quddus & Kropp, 2020). Thus, the subjective performance concept enables farmers participating in this study to understand and respond appropriately.

Trust is a crucial governance mechanism in interpersonal relationships (Villena, Choi, & Revilla, 2019). Trust promotes cooperation and higher performance and facilitates the exchange of information (Ghazinejad, Hussein, & Zidane, 2018). Lobo et al. (2013) examined the farmers' business relationships with buyers and found personal trust had a positive relationship with a farmer's financial performance. Placing importance on trust, (Leninkumar, 2017) argued that all social connections are bound to collapse without trust. Trust can increase social relations and financial benefits (Caliskan & Esmer, 2019), and increase efficiency and reduce costs (Ghazinejad et al., 2018). Increased perception of purchase decisions can expand the trust between farmers and suppliers (Aji, 2016). Trust reduces the uncertainty associated with either partner's tendency to engage in opportunistic activities that could harm the relationship (Kam & Lai, 2018). By highlighting the influence of trust in an agricultural context, Mao, Fu, Cao, & Chen (2021) suggested that trust is a behavior that can establish cooperation and reduce transaction costs for farmers.

Similarly, communication is critical in an agricultural context because it develops information sharing and cooperation amid stakeholders (Hilary, Kibwika, & Sseguya, 2017). Communication in the marketing context can be seen as the formal and informal exchanging and sharing of meaningful and timely information between buyers and sellers (Etuk, 2018). Effective communication is the key that connects the marketing channel (Mohr & Nevin, 1990), and the competency of aptly delivering reliable information creates feelings of familiarity and friendship (Etuk, 2018). Studying communication and performance, Sin, Tse, Chan, Heung, & Yim (2006); Bich et al. (2016); and Yen & Abosag (2016) established that communication positively influences financial and economic performance. Bich et al. (2016), who discovered flower producers' reliance on the wholesaler price information, emphasized the importance of communication in helping them to increase sales volume. Specifically, communication enhances innovation capabilities and opens up the exploration of market opportunities, which ultimately results in a positive outcome on performance (Zaefarian et al., 2017). Proper and good quality information sharing is effective in achieving high performance for farmers (Hilary et al., 2017). In the agriculture sector, especially for farmers, there is a significant need to share and disseminate trustworthy and appropriate information (Lotfi, Mukhtar, Sahran, & Zadeh, 2013). Networking and face-to-face interactions are effective means of communication and provide additional opportunities to build stable interpersonal relationships (Valenzuela & Contreras, 2014). Therefore, this study aims to fill the gap in existing literature by exploring whether farmers accept and apply trust and communication to enhance farm performance, and if so, they can employ this strategy in a practical way. Based on the above discussion, the following hypotheses are proposed:

Hypothesis 1 (H₁): Trust has a significant relationship with farm performance.

Hypothesis 2 (H₂): Communication has a significant relationship with farm performance.

2. MATERIALS AND METHODS

2.1. Sampling and Data Analysis Techniques

The Mymensingh district in Bangladesh was purposively selected for data collection as this district is famous for its vast paddy production area and abundance of paddy farmers. The study population comprised all the farmers in the selected area of the district. The survey was conducted from February to April 2020 to generate the data required for this study. Data was collected through a questionnaire that covered farmers' profiles as well as their practices in the exchange relationship with their preferred buyers (the influential elements such as trust and communication that can enhance farm performance). It was developed with open-ended and close-ended questions after considering the research

objectives and the farmers' ability to understand what was required of them. Probability sampling was undertaken using a systematic random sampling technique due to its generalization utility for studying a small subset of a large population. Also, systematic sampling is appropriate as it considers the population's homogeneity and commonly shared characteristics (Mukherjee, 2019). A total of 356 farmers were interviewed from the selected area, and they all possess similar characteristics in social, educational, and economic conditions. Data was collected by enumerators who are familiar with the farmers' activities. The survey consisted of ten items (see Table 1) measured on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

The study employed a descriptive analysis to show farmers' demographic profiles and exchange relationships with preferred buyers. The Statistical Package for Social Science (SPSS) was utilized to run the descriptive statistics to derive the frequencies and percentages. PLS-SEM was employed to test the hypotheses. PLS-SEM is a variance-based analysis method that is widely accepted in business marketing management. It is suitable in studies that develop theory and is appropriate for examining a complex causality relationship model. Importantly, PLS-SEM is a non-parametric approach that imposes less emphasis on data distribution and sample size (Lowry & Gaskin, 2014).

Table 1. Measurement scale used with factor loading.

Measurement Scale		Factor Loading
Trust (Batt, 2003)		
1	I have confidence in my most preferred buyer	0.866
2	I trust my most preferred buyer as he keeps his promises	0.782
3	I believe the market information provided by my preferred buyer	0.809
Communication (Alrubaiee & Al-Nazeer, 2010; Ndubisi, Malhotra, & Wah, 2009)		
1	My preferred buyer communicates frequently	0.774
2	The information helps to provide better service	0.841
3	My preferred buyer provides timely and trustworthy information	0.861
4	Information provided by my preferred buyer is always accurate	0.825
Farm Performance (Kavak et al., 2016; Lobo et al., 2013)		
1	The relationship with my preferred buyer helped to increase my sales	0.782
2	The relationship with my preferred buyer helped to increase my profit	0.826
3	My farm performance is much better than competitors in cash flow	0.856

3. RESULTS AND DISCUSSION

3.1. Farmers' Demographic Profiles

Table 2 exhibits the demographic profiles and farmers' exchange relationships with their preferred buyers. Most of the study respondents were male (98%).

Table 2. Demographic profiles and farm characteristics (n = 356).

Characteristics	Category	Frequency	%
Gender	Male	349	98
	Female	7	2
Age	26–35 years	57	16
	36–45 years	89	25
	46–55 years	100	28
	56 years and above	110	31
Education	Class 5 (Primary Education)	103	29
	Class 8 (High School)	96	27
	SSC (Secondary School Certificate)	86	24
	Other (HSC, BA.)	71	20
Farm Size	Small (cultivable land of 0.05 to 2.49 acres)	207	58.1
	Medium (cultivable land of 2.50 to 7.49 acres)	147	41.3
	Large (cultivable land of 7.50 acres and above)	2	0.6
Ownership	Personal	338	72.7
	Borga (local lease)	70	15.1
	Lease	57	12.2
Farming Experience	5–14 years	52	14.6
	15–24 years	128	36
	25–34 years	110	30.9
	35 years and above	66	18.5
Annual Income	50000 or less	162	45.5
	51000–100000	161	45.2
	100100–149000	25	7
Farmers exchange relationship with preferred buyers	5–9 years	155	43.5
	10–14 years	78	21.9
	15–19 years	51	14.3
	20–24 years	27	7.6
	25–29 years	21	5.9
	30 years and above	24	6.7

The most frequent respondent age group was 56 years old and above, followed by 46 to 55 years, and lastly, 26 to 35 years. In terms of educational background, 29% of respondents completed primary education (i.e., class five), 27% completed class 8, 24% passed SSC (Secondary School Certificate). In comparison, 20% of respondents attained other education levels such as Higher Secondary Certificate (HSC) or Bachelor of Arts (BA). Regarding farmer size, 58.1% of respondents were small farmers, 41.3% were medium farmers, whereas the rest (0.6%) were large farmers. Most farmers (72.7%) have a personal farm. 15.1% of farmers used borga (a type of lease) land, while 12.3% used lease farms. Regarding the paddy cultivation period, 36% of respondents had 15 to 24 years of cultivation experience, while 30.9% had 25 to 34 years of experience. Table 2 also provides the farmers' annual income; 45.5% received an annual income of TK50,000 or less, followed by 45.2% with an annual income between TK51,000 and TK100,000. Very few farmers (2.2%) obtained an annual income of TK150,000 and above. In terms of business relationships with preferred buyers, most farmers have been dealing with the same buyers for between five and nine years (43.5%), followed by ten to 14 years (21.9%), and 15 to 19 years (14.3%).

3.2. Data Analysis Results of the PLS-SEM

In PLS, there are two types of assessment model—the measurement model and the structural model. The assessment of the measurement model in the PLS-SEM includes internal reliability, internal consistency, convergent validity, and discriminant validity. The internal reliability determines the variables' similarity in items score. The Cronbach's alpha measures the reliability of the indicators, and 0.7 is the acceptable value (Hair, Ringle, & Sarstedt, 2013). Similarly, the composite reliability (CR) value should also be above 0.7 to be recognized as internal consistency (see Table 3). Therefore, both internal reliability and consistency were established in this study.

Table 3. Cronbach's alpha (α), composite reliability (CR), and average variance extracted (AVE).

Variable	Cronbach's alpha	Composite reliability (CR)	Average variance extracted (AVE)
Farm Performance	0.760	0.862	0.676
Communication	0.845	0.896	0.682
Trust	0.760	0.860	0.672

Convergence validity is the measure's degree of positive correlation with alternative measures of the same variable (Hair et al., 2013) determined by the factor loading and average variance extracted (AVE). Factor loading is used for the assessment of indicator reliability. According to Hair et al. (2013), a factor loading above 0.7 should be taken into the analysis process; in this study it is above 0.7 (see Table 1). The AVE value of the present study exceeds the acceptance value, which is more than 0.5 (see Table 3). Therefore, convergent validity had been established. Conversely, discriminant validity is the empirical distinction of a variable compared to other variables. The discriminant validity also denotes the extent of a variable's correlation with others and the degree of representation by its indicator (Hair et al., 2013). The Fornell and Larcker score is the criterion used to assess the discriminant validity and is expressed as the square root of AVE of all latent variables. Table 4 shows that the scores determined in the present study are more significant than the correlations of the inter-constructs.

Table 4. Fornell and Larcker criterion.

Variables	Farm Performance	Communication	Trust
Farm Performance	0.822		
Communication	0.669	0.826	
Trust	0.609	0.568	0.820

The relationship between an independent variable and a dependent variable is assessed using a structural model. In PLS-SEM, the structural model is assessed by the coefficient of determination (R²). It estimates the significance and relevance of the relationship. The coefficient also corresponds to the amount of variance in the endogenous variable explained by the associated exogenous variables (Hair et al., 2013). The R² value of exogenous variable performance was 61.6% (see Figure 1), indicating the relevance of the present study.

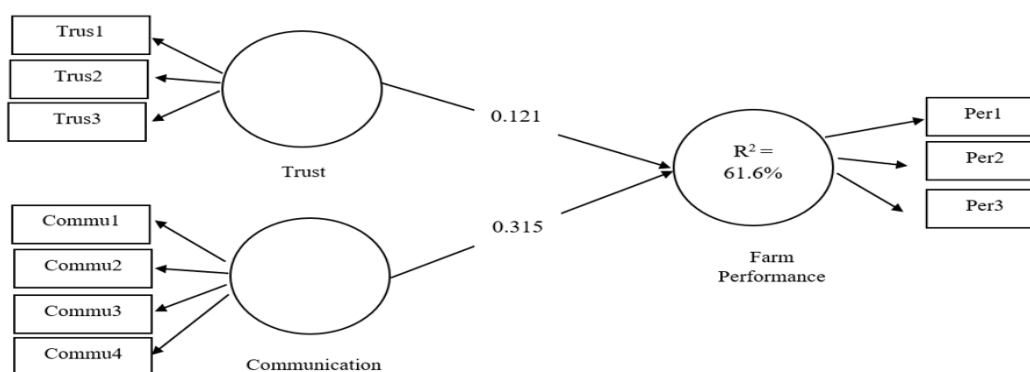


Figure 1. PLS algorithm results with path coefficients and R² values.

Note: Trus = Trust, Commu = Communication, and Per = Farm Performance.

Table 5 describes the model's path coefficient (β) that shows the direct relationship between performance and other constructs. Trust ($\beta = 0.121$) and communication ($\beta = 0.315$) established a strong positive relationship with performance. Thus, H_1 and H_2 were supported (see Table 5).

Table 5. Hypothesis testing results.

Path	Path Coefficient	T-statistic	P-value	Decision
Trust -> Farm Performance	0.121	2.073	0.039*	H_1 Supported
Communication -> Business Performance	0.315	4.447	0.000*	H_2 Supported

Note: (* Significance $p < .05$).

The findings denote that the farmers have an excellent perception of the effect of trust and communication in achieving farm performance. This research emphasizes that trust can enhance farm performance. The H_1 outcome may be attributed Bangladeshi farmers positively assessing their preferred paddy buyers and believing that their preferred buyer fully meets their expectations, such as offering fair prices. Another possible explanation for this result is that farmers are likely to maintain long-term business relationships if they are confident with their preferred buyers, believe they will keep their promises, and trust their information. The result of H_1 corresponds to Villena et al. (2019), who discovered that trust had a positive relationship with the firm or supplier performance when both buyer and seller maintained a successful business relationship. This result is similar to Lobo et al. (2013), who stated that the benefit of trust ensures the financial performance of vegetables farmers based on product development and jointly working with others in their business. Trust also reduces the transaction cost (Sartorius & Kirsten, 2007) that could be responsible for increasing performance (Sako, 1997) and attaining competitive excellence (Luo, Griffith, Liu, & Shi, 2004). Trust also promotes cooperation and higher performance and facilitates the exchange of information, and independence (Ghazinejad et al., 2018). The result for H_2 supports the idea that better communication also results in higher business performance. This research found that continuous information sharing in business relationships will encourage business continuity in the future. Thus, good communication will affect business performance positively. The finding also suggests that Bangladeshi farmers are generally willing to receive trustworthy information from the buyers, which ultimately leads to increased profit in paddy selling. This result is consistent with the study of Sin et al. (2006), who explored whether communication fosters trust by assisting in solving disputes and aligning perceptions and expectations and positively influencing financial performance. The result for H_2 is also similar to Yen & Abosag (2016), who found that communication is apparent when the farmers enjoy relatively better performance with suppliers (Yen & Abosag, 2016). Farmers placed considerable importance on the frequency of communication (to know what price and what volume the buyer needs) and the buyer's willingness to meet their immediate needs (Bich et al., 2016). Thus, reliable and credible price information increases sales and profitability (Arif, Jan, Marwat, & Ullah, 2009).

3.3. Practical Implication

This study revealed a great deal of evidence based on the PLS-SEM findings. The study found numerous policy implications for prioritizing the inputs for paddy production and marketing actors. First, farmers today are not only bound to practicing mixed marketing or traditional marketing strategies. Farmers may seek to adopt a relationship approach to maximize social and psychological value and establish strong, long-term business relationships with their paddy buyers. The farmers no longer practice traditional marketing that fails to enhance farm performance. Second, farmers with skills in developing relationship marketing may develop an excellent relational quality with their preferred buyers by improving relational behavior, the information provided, ease of access, and the availability of a two-way interaction between farmers and their preferred buyers.

Third, as the heart of the agro-economy, farmers should retain their basic format of being proactive and willing to maintain good relationships to achieve an excellent performance. These strategies can be implemented via the value of maintaining excellent, long-term exchange relationships. Practitioners such as farmers should know that trust and communication are the most important aspects of successful business relationships as both significantly influence performance concerning profit, sales, and cash flows to maintain competitiveness in the market.

4. CONCLUSION

Strategic exchange relationships are important in achieving economic returns for the farmers in Bangladesh. The outcome revealed that trust and communication have direct positive and significant relationships with paddy farmers' farm performance in Bangladesh. Thus, paddy farmers in Bangladesh can effectively utilize trust and communication to build reliable business relationships, share better information, ensure satisfaction in exchanges, increase repeat sales, and enhance performance.

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