JAFSCD
Journal of Agriculture, Food Systems, and Community Development
ISSN: 2152-0801 online
https://foodsystemsjournal.org

What does matter most for farmers' choice of marketing channels? Evidence from coastal Bangladesh

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Submitted May 29, 2024 / Revised September 13, November 18, 2024, and January 24, 2025 / Accepted January 27, 2025 / Published online April 29, 2025

Citation: Alam, Md. M., Shaba, S. A., & Ashik-Uz-Zaman, S. M. (2025). What does matter most for farmers' choice of marketing channels? Evidence from coastal Bangladesh. *Journal of Agriculture, Food Systems, and Community Development*, *14*(2), 483–497. https://doi.org/10.5304/jafscd.2025.142.032

Abstract

This study aimed to identify the marketing channel preferences of small-scale farmers and explore the factors influencing their choices in three coastal districts of Bangladesh. The results showed that farmers mostly preferred to sell from farm stands, while a significant percentage preferred to sell at the marketplace or use both channels. A multinomial logistic regression (MNL) analysis revealed that factors such as gender, farm size, family income, ownership of cart/vehicle, and distance significantly influenced farmer marketing channel preferences. Specifically, female farmers, farmers

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Funding Disclosure
The research was partially supported by a grant from the Sher-e-Bangla Agricultural University Research System (SAURES).

Data Availability Statement
Data is available from the first author upon request.

Conflict of Interests
The authors declare no conflict of interest.

Ethical Approval Statement
There is no formal provision for obtaining ethical approval from the institution where the study was conducted; however, to adhere to general ethical standards, the purpose of the data collection was explained to all respondents, and interviews were undertaken only upon receiving their informed consent to participate in the survey.

with lower incomes, and farmers without vehicle access preferred selling directly from farm stands. The findings suggest that programs promoting market inclusion or farmer cooperatives should be further explored to increase farmers' participation in marketing channels. Overall, improving access to business opportunities and addressing transportation issues can help small-scale farmers overcome market-related inefficiencies and improve their economic development.

Keywords
marketing channel, agriculture, farmers, coastal, Bangladesh, multinomial logistic regression

Introduction

Farmers markets are common facilities where growers or producers gather regularly and sell their farm produce directly to consumers. While traditional farmers markets play a crucial role in the daily lives of local people, ensuring fair marketing practices is crucial for small-scale farmers in developing nations to achieve broader goals such as food security, poverty alleviation, and sustainable agriculture (Taruvinga & Fraser, 2013). The persistent challenge of farmers being deprived of fair prices—prices untainted by market power or asymmetric information—remains a central issue in the development dialogue. Limited bargaining power leaves farmers vulnerable, enabling intermediaries to capture disproportionate profits. This results in a significant gap between the prices farmers receive and the prices consumers pay (Uddin, 2021).

Intermediaries often control key aspects of the marketing chain, dictating prices and securing substantial profits due to their extensive networks. Consequently, farmers endure financial hardships while consumers face inflated prices. Although farmers may seek access to more extensive or different market opportunities to reach broader customer bases and achieve higher revenues (Shilpi & Umali-Deininger, 2008), they are hindered by various barriers. These include inability to meet market requirements such as food safety standards, readiness for market entry, and the durability of agricultural products. Additional challenges, such as low production volumes, inadequate access to market price information (Jayne et al., 2002), insufficient knowledge of modern post-harvest handling and storage techniques, and poor infrastructure, further exacerbate their hardships. Moreover, farmers' lack of awareness of alternative marketing opportunities and value-addition options often results in oversaturated markets, restricted access for farmers, and high transaction costs. Thus, farmers rely on traditional market channels that may not offer competitive prices.

Farmers in geographically challenged regions like the coastal belts of Bangladesh, unlike those located in the inland plains, face unique vulnerabilities. These regions are characterized by a fragile ecology, climate vulnerability, drought and saltwater intrusion, and poor physical infrastructure. Such challenges limit farming activities and lower farmers' confidence in marketing their products to profitable sales outlets, further depriving them of fair pricing of their produce.

Consequently, the marketing channel preferences of coastal farmers require a distinct focus compared to their inland counterparts, which has inspired the researchers to address two fundamental questions: (1) what are the preferred marketing channels for coastal farmers, and (2) what are the factors that influence most farmers' preferences? It is worth noting that while farmers' channel preferences is not entirely a new topic of study, it still remains relevant and important due to having been relatively little explored. Most of the prior studies we reviewed focused on farmers of specific crops or farmers from inland areas. Our study aims to provide insights from the coastal regions of Bangladesh, where we explore three types of marketing channels: farm stand sales, directly to buyers; marketplace sales, sales through intermediaries at the marketplace; and a mixture of both. In order to understand the dynamics of the three channel preferences, a number of variables, such as farmer demographics and socio-economic factors, were considered. The findings are expected to extend the existing literature by incorporating scenarios from coastal regions, which can inform policy formulation regarding agricultural market system development. Thus, the following objectives were formulated to guide the study:

1. To identify farmers' preferences for marketing channels (direct vs. intermediary-based vs. both);
2. To explore the contributing factors influencing farmers' preferences for marketing channels to sell their produce.

Literature Review

Farmer-trade relations in countries in the Global South are ineffective because of the lack of institutional infrastructure and imperfect competitiveness in agricultural markets (Pagare et al., 2022). Therefore, many agricultural marketing boards and governments have created transaction guidelines to control these exchanges and lessen inefficiencies (Giuliano & Scalise, 2009). Different forms of direct marketing have been developed in practice, including on-farm retail markets, roadside stands, pick-your-own, and community supported agriculture (CSA) (Bruch & Ernst, 2010). For example, the Bangladesh Department of Agricultural Marketing (DAM) opened a weekly farmers market on the premises of Shech Bhaban on Manik Mia Avenue in Dhaka (*Dhaka Tribune*, 2019) for vegetable farmers. This initiative allows small-scale farmers to sell products directly to consumers and learn about market conditions (Young, 1995). The growth of private participation has resulted in the availability of many kinds of marketplace, allowing farmers to select their markets (Onumah et al., 2007). However, the characteristics of these markets may vary, from quality and quantity standards to availability of price discovery mechanisms (Argade & Laha, 2018).

The existing literature generally interprets small-scale farmers as passive decision makers whose market choices are based on government support prices and the accessibility of transportation, which serve as enabling or impeding conditions (Argade & Laha, 2018; Park & Lohr, 2006; Schipmann & Qaim, 2011; Umberger et al., 2015; Xaba & Masuku, 2013; Zanello et al., 2014). However, Pagare et al. (2022) argue that farmers are active decision makers, since farmers' market choices are based on external and internal factors as well as behavioral factors. Small-scale farmers with relatively low farm income are more likely to rely on direct marketing channels than to participate in the larger marketplace (Wolanin, 2013). A study of cherry growers in the Kamalpasa District of Izmir in Turkey found that the duration of farming experience, orchard size, level of cherry production specialization, and size of yield significantly impact farmers' choice of marketing channel (Adanacioglu, 2017). This finding about marketing channels is consistent with a study in Austria, where family farmers particularly use direct marketing (Fujisawa et al., 2015). This study further demonstrates that small-scale farmers' sales from farm stands are a common decision to make because they can set their pricing and have cheap marketing costs related to informal or direct markets (Nkhori, 2004).

It clearly appears that food exchange, transportation, storage, and processing tasks performed by intermediaries are eliminated via direct marketing (Cottingham et al., 1994). A study reported that consumers' willingness to purchase farm-fresh, high-quality produce might encourage them to support local or small farmers (Alberta Ag-Info Centre, 2013). Thus, direct marketing may guarantee the availability of wholesome food for consumers, boost farmer income, and support farmers' living standards (Fehér, 2012). In summary, farmers' choice for marketing may be influenced not only by government policy but by other factors such as transportation cost, distance to the formal market, farm input, and market information.

Farm income and farm size greatly influence farmers' choices of marketing channels. Since larger farmers produce larger volumes, they will likely participate in larger markets to sell their products rather than from their farm stands. The gender of the household head also impacts the choice of marketing channel (Sserunkuma & Alex, 2010). Male-headed agricultural households make up a higher percentage of farms than their female counterparts. As a result, female farmers sell less produce than male producers, who prefer to travel to distant places to participate in larger markets for higher prices (Gebre et al., 2021).

In developing and transitional nations, through wholesale markets or collectors/wholesalers, nontraditional marketing chains such as supermarkets or export markets have recently begun to coexist with traditional marketing chains. As a result, farmers now have more lucrative opportunities to sell their goods. Small-scale farmers can choose from an expanding variety of possible buyers. Recently, a growing group of educated farmers with commercial and medium-sized farms geared toward supermarkets has made up the bulk of supermarket suppliers, boosting production and quickening the pace of economic growth. Therefore, a sustainable marketing system is essential. An effective marketing system may provide a high level of the producers' share of the consumer price, decrease the number of intermediaries, lower marketing costs, and decrease unethical marketing techniques (Panda & Sreekumar, 2012). However, most marketing channels in developing nations are lengthy, intricate, and have large transaction costs. Moreover, high fixed costs for market information (Aker, 2010), improved technology (Barrett, 2008), and transportation facilities (Fafchamps & Hill, 2008) due to poor and remote road conditions prevent small-scale farmers from obtaining fair prices and reduce their chances of negotiating better deals. With limited access, they often rely on local buyers or intermediaries who pay significantly less than the market or expected price. Therefore, the rising interest in direct marketing among small-scale farmers is due to several factors. This study intends to investigate those factors triggering farmers' decision-making to participate in direct or intermediary-based marketing.

Researchers and decision-makers have investigated agri-food systems and farmers' preferred marketing channels, particularly in response to evolving market conditions and policy changes (Fafchamps & Hill, 2005; Goetz, 1992; Rao et al., 2012). Scholars have recently researched the dynamics of the agricultural supply chain; however, contracts (Zegher et al., 2019), cooperatives (An et al., 2015), and intermediation (Ferreira et al., 2017) have received the majority of attention. While available research primarily concentrates on value chains and production data, studies on channel preference have received relatively little attention in Bangladesh, particularly the coastal region, which is uniquely diverse and vulnerable compared to the inland. Farmer participation in markets is crucial for reducing poverty and inequality and promoting sustainable economic growth, as this allows them to sell their produce to a larger customer base and creates opportunities for better prices. Access to diverse marketing channels can ensure a fair price, reduce intermediaries' interference and the strain on consumers for paying unjustified prices, and improve food safety. The overall system can contribute to economic growth and farmers' living standards. Multiple interrelated variables, including market conditions, demographics, and economic and social factors, were thus considered in this study to determine the factors that drive farmers' choice of marketing channels to sell their produce. Research of this nature is rarely done in Bangladesh, especially in coastal regions, and remains less common compared to other studies in the country. Therefore, this research aimed to fill the gap by exploring farmers' preferences between different marketing channels and their related consequences.

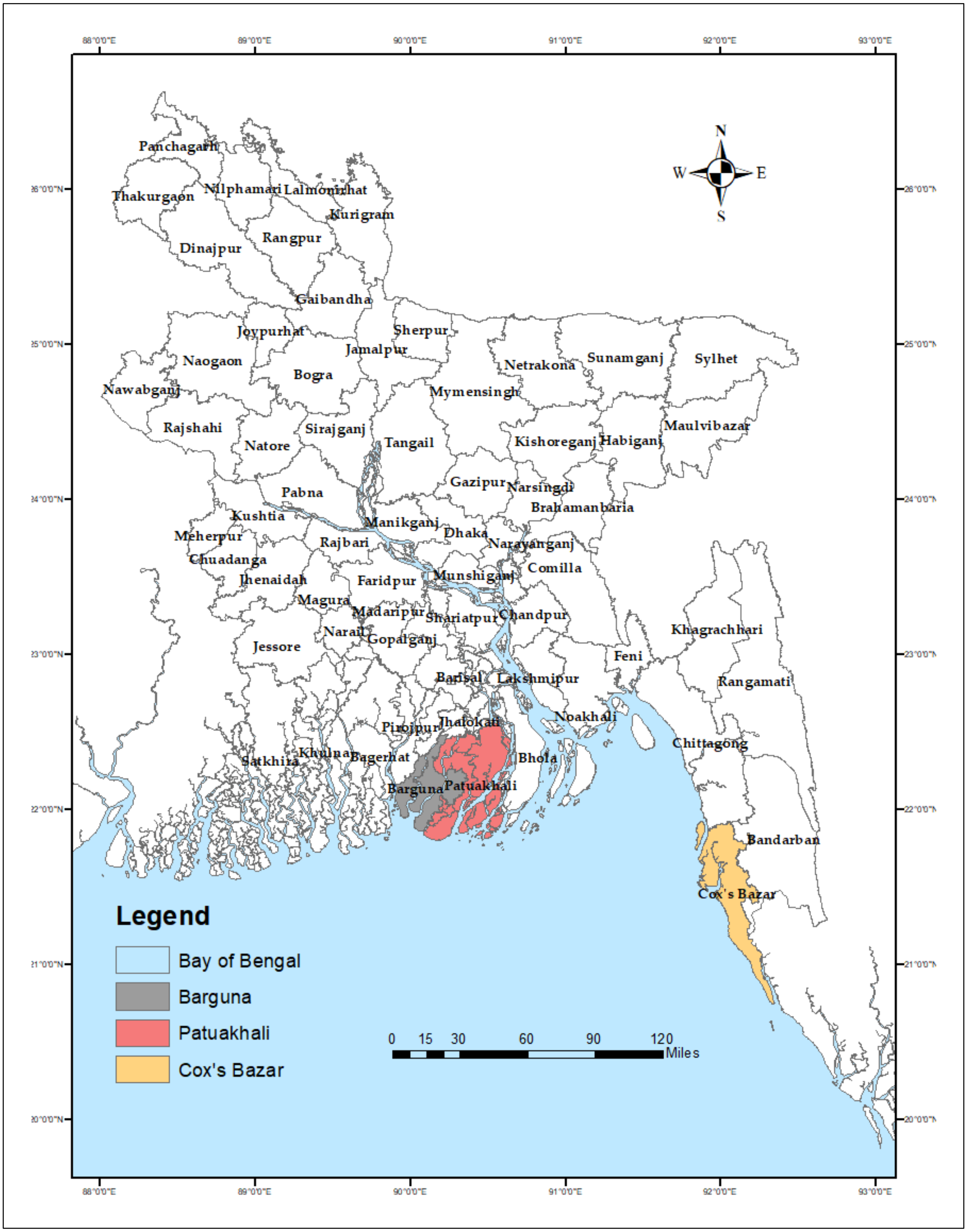
Methods

In this study, farmers' use of marketing channels was broadly classified in three ways: direct sales, i.e., sales from the farm stand ("farm stand sales"); indirect sales, i.e., sales through intermediaries at the marketplaces ("marketplace sales"); and both channels, i.e., sales combining direct and indirect sales based on convenience.

Study Area

The study deliberately selected coastal regions since livelihoods and transportation facilities are more likely to be vulnerable and limited in the coastal areas than in the floodplain or inland. Moreover, the objective was to explore factors influencing coastal area farmers for their marketing channels. Therefore, strategies were formulated to address the market-related problems of the coastal regions. Three coastal districts of Bangladesh were chosen as the study area (Figure 1), close to the Bay of Bengal: Cox's Bazar (which has the world's longest beach), and Patuakhali and Barguna, which are vulnerable to climate change impact but feature diverse marine and other resources vital to the agricultural sector of Bangladesh. One upazila (i.e., subdistrict) from each district was randomly selected for data collection.

Figure 1. Bangladesh Map Showing Study Areas with their Proximity to the Bay of Bengal



Sampling Method

The study adopted a convenient sampling technique to ensure rapid data collection within the time and budget constraints. While this approach may not statistically represent the entire population, it allows for an initial exploration of the research topic. It serves as a foundation for more comprehensive statistical analyses in future studies.

Data Collection

Based on the prior literature search (Adanacioglu, 2017; Wolanin, 2013; Xaba & Masuku, 2013) and considering local socio-economic and market-related conditions, a structured interview schedule was prepared and pre-tested with 12 respondents from one of the sampled areas. Based on the pre-test experience, the instrument was modified and finalized according to the objectives of the study.

After meeting at a focal point of the locality, the two enumerators chose two different routes, walked through nearby villages and farmlands, and approached possible respondents for the interview, stating the objectives of the study. If a respondent showed his or her interest and gave full consent to participate in the survey, the enumerator collected the data in a face-to-face situation using the structured interview schedule. The enumerators successfully interviewed 197 respondents (Table 1).

Data Analysis

A multinomial logit regression model was chosen to explore the factors influencing farmers' preferences for marketing channels to sell their produce. It provides an estimation between a dependent variable with three or more categories and one or more independent variables. This model is suitable for analyzing unordered responses with more than two choices (Pham et al., 2019; Wooldridge, 2010).

Table 1. Sample Size of the Study

Name of district	Name of the upazila (subdistrict)	Number of respondents	Percentage
Cox's Bazar	Ramu	101	51.27
Patuakhali	Sadar	50	25.38
Barguna	Patharghata	46	23.35
Total		197	100

While there are many ways for farmers to sell their produce, any way to sell is included in either a direct or indirect marketing system or both, as they are broad aspects of marketing. Therefore, this study considered three marketing options: direct (farm stand sales), indirect (formal marketplace sales through intermediaries), and a choice of both channels. The analysis was run using SPSS (v24) software program. The model is expressed in terms of log odds or logit. The equation for the log odds of category "i" are relative to the reference category. Farmers' choices of marketing channels can be analyzed as:

$$\text{logit}\,(P(Y=i|X)) = \log\,[P(Y=i|X) / P(Y=\text{reference category}|X)] \quad \text{(i)}$$

where $P(Y=i|X)$ is the probability of the dependent variable being in category i given the values of the independent variables X, and $P(Y=\text{reference category}|X)$ is the probability of the dependent variable being in the reference category given the values of the independent variable X.

The equation for the multinomial logistic regression model with k independent variables is written as:

$$\text{logit}\,(P(Y=i|X)) = \beta 0i + \beta 1X1 + \beta 2X2 + \ldots + \beta kXk \quad \text{(ii)}$$

where $\beta 0i$ is the intercept for category i, $\beta 1$ to βk are the coefficients for the independent variables X1 to Xk, and $\text{logit}(P(Y=i|X))$ is the log odds of category i relative to the reference category. "Sales from farm stand" was considered the reference category.

The model estimated coefficients for each independent variable, as well as the standard errors, Wald chi-square statistics, and significance levels. These coefficients can be used to calculate the log odds of the dependent variable being in each category given the values of the independent variables indicating gender, family income, farm size, asset ownership (cart/vehicle), distance from the market, access to market information, access to farm input information, and frequent access to extension support services.

From the utility perspective, each respondent farmer will choose a marketing option if the utility gain from that option is greater, considering his or her manageable resources. than that of other marketing options with regard to the selected determinants. To estimate the likelihood ratio, all the determinants were treated as dummy variables. Measurements of the variables are given in Table 2.

Results

Data revealed that most farm respondents (46.7%) prefer selling their produce from the farm stand. In comparison, one-fourth of the respondents prefer to sell through intermediaries in the marketplace (25.4%), and a little over one-fourth of the respondents (27.9%) use both marketing channels.

An overwhelming majority of the respondents (84.8%) were male and had low family income (less than 3 lac BDT per year; 1 USD = 105 BDT). A little over one-fourth of the respondents (27.9%) had a large farm (i.e., >1 ha.), and less than one-fifth (18.3%) had a cart or vehicle that was used to carry their produce to the nearest marketplace. Half the respondents lived one kilometer away from the nearest marketplace. Most had access to market-related and farm input-related information; however, only 14.7% had frequent access (i.e., once a week) to local extension services.

Table 2. Variables and Measurements Used

Name of the variables	Measurement technique
Gender	1 = Male, 0 = Otherwise
Family income	1 = >3 lac/year, 0 = Otherwise
Farm size	1 = >1 hac of land, 0 = Otherwise
Asset ownership (Cart/vehicle)	1 = Owned cart/vehicle, 0 = Otherwise
Distance from markets	1 = >1 km far from market, 0 = Otherwise
Access to market information	1 = Access, 0 = No access
Access to farm input information	1 = Access, 0 = No access
Access to extension service	1 = Frequent access (once a week), 0 = Otherwise

Data in Table 3 show that for female respondents, only 10% used both marketing channels. Farm stand sales were the most preferred marketing channel for male (41.9%) and female (73.3%) farmers. Nonetheless, it is evident that most male farmers (58%) tend to sell through intermediaries.

Table 4 has a likelihood ratio chi-square test that

Table 3. Frequency Distribution of the Respondents Within Groups

Variables		Sales (Farm stand) Count (%)	Sales (Marketplace) Count (%)	Both Count (%)
Gender	Male	70 (41.9%)	45 (26.9%)	52 (31.1%)
	Female	22 (73.3%)	5 (16.7%)	3 (10.0%)
Farm size	Small	72 (50.7%)	36 (25.4%)	34 (23.9%)
	Large	20 (36.4%)	14 (25.5%)	21 (38.2%)
Family income	Low	87 (51.5%)	42 (24.9%)	40 (23.7%)
	High	5 (17.9%)	8 (28.6%)	15 (53.6%)
Cart/ Vehicle	Not owned	84 (52.2%)	36 (22.4%)	41 (25.5%)
	Owned	8 (22.2%)	14 (38.9%)	14 (38.9%)
Distance	Not far	33 (34.0%)	25 (25.8%)	39 (40.2%)
	Far	59 (59.0%)	25 (25.0%)	16 (16.0%)
Market information	No access	3 (33.3%)	4 (44.4%)	2 (22.2%)
	Access	89 (47.3%)	46 (24.5%)	53 (28.2%)
Farm input information	No access	4 (44.4%)	3 (33.3%)	2 (22.2%)
	Access	88 (46.8%)	47 (25.0%)	53 (28.2%)
Extension contact	Less frequent contact	79 (47.0%)	43 (25.6%)	46 (27.4%)
	Frequent contact	13 (44.8%)	7 (24.1%)	9 (31.0%)

Table 4. Model Fitting Information

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	214.952	221.518	210.952			
Final	189.182	248.280	153.182	57.770	16	.000

Table 5. Goodness-of-Fit

	Chi-square	df	Sig.
Pearson	90.682	76	.120
Deviance	91.217	76	.112

Table 6. Pseudo R-Square

Cox and Snell	.254
Nagelkerke	.289
McFadden	.138

compares the full model (i.e., the model with all predictor variables) against a null model (i.e., a model with no predictors). The result shows that the final model is a significant improvement in fit over a null model [$\chi 2$ (16) = 57.770, p<.001].

The goodness-of-fit model (Table 5) has the Pearson and deviance chi-square values that show whether the model is a good fit or not. Generally, nonsignificant results are expected to indicate that the model fits well with the data. In both cases, the model fits well with the data [$\chi 2(76) = 90.682$, p>.05] and [$\chi 2(76) = 91.217$, p>.05].

In general, there is no strong guidance as to how to interpret the R-square value (Table 6), particularly in the MNL, even though pseudo-R-square values are treated as rough analogs to the R-square value in the ordinary least squares (OLS)-based model. Nonetheless, Table 6 indicates that the model could explain 28.9% of the variance of the dependent variable (Nagelkerke = .289).

While the pseudo R-square values are expected to be treated cautiously, the likelihood ratio tests (Table 7) are important determinants of the MNL regression model. Data show the overall contribution of each independent variable to the model. Using the conventional threshold (p<.05), gender, farm size, family income, cart/vehicle ownership, and distance from the market were the significant predictors of farmers' preferences for the marketing channel. In contrast, market- and farm-input-related information and extension contact did not show any significant influence.

Table 7. Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	chi-Square	df	Sig.
Intercept	189.223	241.755	157.223	4.041	2	.133
Gender	194.074	246.606	162.074	8.892	2	.012*
Farm Size	191.430	243.961	159.430	6.248	2	.044*
Family Income	192.534	245.065	160.534	7.352	2	.025*
Cart/vehicle	192.083	244.614	160.083	6.901	2	.032*
Distance from market	197.889	250.420	165.889	12.707	2	.002**
Market-related information	187.043	239.574	155.043	1.861	2	.394
Farm input information	185.600	238.131	153.600	.418	2	.811
Extension contact	185.700	238.232	153.700	.518	2	.772

The chi-square statistic is the difference in -2 log-likelihoods between the final and reduced models. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

The parameter estimates (Table 8) provide information that compares each choice against the reference category, farm stand sales. The regression coefficients specify which predictor variables significantly differ between farmers who sell through both channels and those who sell from the farm stand, and between farmers who sell through intermediaries at the marketplace and those who sell from the farm stand.

The first section of Table 8 compares marketplace sales (coded 1) and farm stand sales (coded 0). Two predictors, gender and cart/vehicle ownership, were found significant (β = 1.133 & β = 1.302, respectively, $p<.05$). The positive significant sign denotes that respondents scoring higher on these predictors were highly likely to sell their produce through intermediaries compared to sales from the farm stand. The odd ratio of gender [Exp(B) = 3.106] and cart/vehicle ownership [Exp(B) = 3.677] indicate that for every one-unit change in gender (here, male), the odds of selling through the marketplace changed by a factor of 3.106, while in case of cart/vehicle ownership, the odds increase by a factor of 3.677.

The second set of coefficients compares farmers who prefer to sell from their farm stand and those who explore both channels for selling their produce. Data in Table 8 show that gender (β = 1.616), farm size (β = 1.025), family income (β = 1.613), and distance from the market (β = –1.438) were all found to be significant predictors of farmers' choice of marketing channel, while only distance from market showed a negative influence. The odds of farmers using both the marketing channels increase by a factor of 2.788 and 5.020, respectively, with an increase in farm size and in family income. Furthermore, the odds were found to increase by a factor of 5.031 for male farmers compared to female farmers. However, in the case of distance from the market, the odds [(EX(B) = .237] decrease.

Discussion

Farmers from the coastal regions of Bangladesh face challenges in accessing contemporary transportation facilities due to infrastructure challenges such as poor road quality, inadequate vehicles, distance to inland markets, transportation costs. Furthermore, the geography of many areas renders them remote, increasing costs associated with travel and transportation of produce from the farm stand to the nearest markets. This limitation impedes farmers' ability to secure higher prices for their produce. Enhancing farmers' access to profitable markets is crucial to raising their farm incomes and productivity, supporting better livelihoods, and promoting rural development. Consequently, the objectives of this study were to find the farmers' preferences for marketing channels and to investigate the factors influencing their choices of marketing channels for selling their produce.

From the findings of this study, direct sales from farm stands are most preferred by the respondent farmers. This preference is understandable given the dynamics of the coastal region. Factors such as environmental conditions and shipment costs may encourage farmers to sell their produce directly from their farms or roadside stands near their fields. This type of sales is possibly the most straightforward market channel for them.

It is also reported that male farmers tend to travel to distant markets more often than female farmers, showing that the gender of respondents influences their choices of marketing channels. This study confirms that gender significantly impacts the preference for marketplace sales (β = 1.133) and both marketing channels (β = 1.616) over farm stand sales. Moreover, males can manage more risks because they can enforce negotiations and contracts and handle larger amounts, which allows them to deal with professional intermediaries and local traders (Gebre et al., 2021; Maina, 2015).

Farm size and farm income are two more important determinants that help explain choices of marketing channels. The results revealed that farm size has a significant impact (β = 1.025) on farmers' choices of marketing channels; farmers with large farms (23.9%) were likely to explore both marketing channels (sales from farm stands and sales at the marketplace) according to their convenience. The findings support that producers become less dependent on direct marketing channels as farm size and family income increase.

Table 8. Parameter Estimates

Marketing Channel Option		B	Std. Error	Wald	df	Sig.	Exp (B)	95% Confidence Interval for Exp (B) Lower Bound	Upper Bound
Marketplace sales	Intercept	−.834	1.155	.521	1	.470			
	Gender	1.133	.567	3.989	1	.046*	3.106	1.021	9.444
	Farm size	.402	.415	.939	1	.332	1.495	.663	3.373
	Family income	.880	.649	1.836	1	.175	2.410	.675	8.606
	Cart/vehicle	1.302	.512	6.466	1	.011*	3.677	1.348	10.030
	Distance	−.376	.399	.888	1	.346	.686	.314	1.502
	Market information	−.895	.843	1.129	1	.288	.408	.078	2.130
	Farm input	−.125	.842	.022	1	.882	.882	.169	4.599
	Extension contact	.167	.544	.094	1	.759	1.181	.407	3.428
Sales through both channels	Intercept	−2.794	1.480	3.562	1	.059			
	Gender	1.616	.686	5.553	1	.018*	5.031	1.312	19.286
	Farm size	1.025	.413	6.174	1	.013*	2.788	1.242	6.259
	Family income	1.613	.625	6.666	1	.010*	5.020	1.475	17.086
	Cart/vehicle	.877	.545	2.585	1	.108	2.403	.825	6.998
	Distance	−1.438	.422	11.628	1	.001*	.237	.104	.542
	Market information	.220	1.043	.044	1	.833	1.246	.161	9.630
	Farm input	.497	.994	.250	1	.617	1.644	.234	11.535
	Extension contact	.392	.543	.522	1	.470	1.480	.510	4.294

[a] The reference category is: Farm stand sales

Journal of Agriculture, Food Systems, and Community Development
ISSN: 2152-0801 online
https://foodsystemsjournal.org

Consistent with work by Monson et al. (2008), this finding has several supporting arguments. Bigger farms can better overcome the obstacles that hinder most small-scale farmers from entering other potentially lucrative markets, including supermarkets. In addition, farmers with large farms may be enticed to reduce their marketing expenses by selling to buyers who can absorb more of their supply than direct market clients, who often make only modest purchases. This suggests that relying on direct and indirect marketing channels will rise as household income does. Monson et al. also pointed out that higher-income farmers might become wealthier due to their involvement in both marketplaces. Again, family income ($\beta = 1.613$) positively affects choice of both marketing options, which may imply that a higher-income family earns more as they choose both farm stand and marketplace sales.

Park et al. (2014) concluded that farm income greatly influences farmers' choice of marketing channels. Furthermore, Wolanin (2013) states that smaller farm sizes and low-income farm households tend to favor farm stand sales. The results of this study, consistent with earlier findings, indicate a significant association between these factors and the likelihood of using direct marketing channels. This preference may stem from the inability of such operations to consistently deliver high-quality produce or meet the high-volume demands of intermediaries and retail outlets.

The analysis of market channel selection decisions also highlighted the significance of market distance as a key variable. The negative association between distance and sales from farm stands suggests that farmers opt for farm stand sales due to discouragement imposed by traveling to distant markets. The inclination to participate in distant markets was significantly inversely correlated with proximity to the nearest markets (Maina, 2015). Farmers show less inclination to sell at any market farther away than the nearest market, preferring direct sales to buyers through alternative channels like farm stands. Distance from the market often dissuades farmers from traveling to the nearest market, leading them to prefer selling their produce directly from their farm stands.

However, a different pattern appears when farmers own a cart or vehicle, making transporting their produce to nearby markets easier. Compared to farmers without any cart, those with a cart or vehicle show greater flexibility in selling through direct market actors. Results show that farmers who owned carts/vehicles were inclined to choose sales at the marketplace. The findings suggest that farmers with vehicle access are likely to explore more opportunities, enabling them to transport agricultural produce to distant marketplaces. Similarly, higher-income groups have greater propensity to explore various marketing options, while respondents living far from the marketplace tend to favor direct sales from their farm stands.

The decision to participate in the market strongly correlates with owning transportation equipment, as demonstrated by studies conducted by Makhura et al. (2002) and Olwande and Mathenge (2012). Farmers' choices about marketing channels are significantly influenced by the availability of transportation, particularly if they are distant from market centers (Taruvinga & Fraser, 2013). This finding may vary somewhat from a study conducted by Muthini (2015), which determined that farmers were more inclined to sell directly to consumers than at a marketplace if they owned a vehicle, lived close to a paved road, and had access to market information. Thus, distance to the marketplace is intricately linked to the selection of marketing channels, with farmers discouraged from selling their produce in formal market channels due to distance between their farms and the markets.

Moreover, farmers with higher income and who are aspiring to earn more, prefer to sell through all available channels rather than only from their farm stand. The findings clearly show that small-scale farmers with lower family incomes, farmers lacking adequate vehicle facilities, and female farmers tend to favor sales from farm stands compared to other alternative options.

Conclusion and Recommendations

Choosing a marketing channel is one of a farmer's most challenging and pivotal decisions. Each channel system caters to a distinct group of target consumers and entails varied income possibilities and costs. This study aimed to find farmers' preferences for selecting marketing channels and to explore the contributing factors. The key findings are summarized here, along with additional recommendations for enhancing the structure of all marketing channels.

Most farmers in this study prefer direct marketing channels. Gender of the respondents significantly influences farmers' preference for marketing channels, as male farmers are more inclined to explore multiple channels than their female counterparts, who typically prefer sales from farm stands. Farmers who own vehicles have the advantage of selling their produce to nearer market, while those with large farms and higher incomes tend to diversify their sales through all channels rather than solely from their farm stands. The results show that small-scale farmers with lower family incomes, without or with inadequate transportation facilities, and female farmers tend to favor farm stand sales over other options.

Although earlier research has examined potential factors in farmers' decisions to engage in direct marketing, the consequences of these factors may vary depending on region and crop-specific factors. Most importantly, we found a lack of research investigating decisions in coastal regions. Therefore, our study not only demonstrates but also reaffirms the dynamics of farmers' marketing channel choices. These findings can encourage policymakers, agricultural extension agents, agricultural marketing institutions, and other stakeholders to develop targeted interventions for specific contexts.

Selecting a sales channel is critical in marketing agricultural and non-agricultural products. Our findings reveal that factors such as gender, farm size, family income, vehicle ownership, and distance from markets directly contribute to farmers' preferences for marketing channels. Moreover, factors like farmers' access to market and price information and transportation facilities can limit their marketing channel preferences.

Coastal farmers face greater difficulties accessing markets due to unique climatic conditions, limited vehicle ownership, and significant gender disparities in farming compared to inland farmers, where farming practices are more stable and transportation facilities are superior. These differences highlight the impact of geographic and socio-economic factors on market participation for coastal farmers. Therefore, a multi-faceted approach is recommended to promote and enhance farmers' participation in markets within coastal regions. Government and nongovernmental organizations should prioritize establishing strong relationships and collaborating with local farmers and food processors to create a stable, year-round buyer base. Policymakers should focus on sustainable market restructuring and improving supply chain continuity, particularly for small-scale and female farmers, who often lack access to formal marketing channels. Furthermore, relevant authorities should develop an inclusive market infrastructure that would contribute to agricultural productivity and boost farmer income by enabling direct trade between small-scale farmers and buyers. Creating local markets close to farming communities or implementing a "bring the market to farmers' doorstep" model, through mobile markets or localized aggregation points near farmland, can reduce farmers' dependency on distant markets. We believe this model, coupled with the development of transportation infrastructure, effectively tackles coastal farmers' unique logistical challenges and enhances market access. Supporting farmer cooperatives and community-based agricultural market systems can empower farmers by improving their collective bargaining power and facilitating access to formal markets. Developing timely and reliable market information services is also a good strategy to encourage small-scale farmers to participate in distant and more profitable markets. To foster sustainable and resilient coastal region agricultural practices, further research is recommended to explore other factors affecting coastal farmers' trading systems, such as climate resilience, post-harvest storage, and transportation infrastructure.

This study has its limitations, particularly the generalizability of its findings. While agricultural marketing research is well-established, exploring coastal farmers' marketing channel preferences remains relatively uncommon in Bangladesh as well as globally. Concerns about the applicability of our findings to other contexts, such as inland or noncoastal farming, are valid. We encourage readers to interpret our findings with this limitation in mind. However, from a methodological standpoint, our selection of methods is proper given the objectives and background of the research. We carefully selected variables that sufficiently captured the nuances of the research. Despite its regional scope, the insights gained have broader relevance. These can be applied to other coastal areas and regions facing similar resource constraints due to geographical challenges. Therefore, these recommendations are informed by our research results and are designed to address the specific needs of coastal farmers. Focusing on these tailored solutions, our study contributes to a deeper understanding of how to support farmers effectively in these unique geographies.

Acknowledgments

The research team acknowledges the support received from the respondents and local agricultural extension offices for conducting this research. They also greatly appreciate the valuable suggestions and comments provided by the reviewers and the editor-in-chief for their constructive feedback and guidance, which helped improve the quality of this paper for publication.

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