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Online group buying (OGB) in agricultural food businesses: An exploratory study

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Abstract. Although agricultural produces occupy a reasonable portion of OGB businesses, glaringly, a limited research has been reported investigating the issues related to OGB businesses in agricultural food industry. To understand the enablers and inhibitors of OGB adoption in agricultural businesses, we conducted an exploratory research in a developing country i.e., Bangladesh which is unique in many contexts. Based on the data obtained from two focus group discussions and two interviews, we reported a different mechanism of OGB than the traditional ones, which is believed to work in a developing country, specifically in agriculture industry. Moreover, we developed a framework to explain adoption of OGB in agricultural businesses. To the best of our knowledge, this is a unique effort employed to explain OGB dynamics from the perspective of supply-side stakeholders, and specifically in agricultural food sector. We briefly reported some practical implications of this study and offered future research directions.

Keywords: online group buying (OGB), diffusion, framework, agriculture, exploratory

1 Introduction

Over two decades, many industries took advantage of Internet and telecommunication networks to reach to customers and sell products and services through different channels. Following the significant success of *e-commerce* in the 1990s, a number of innovative companies restructured their business model and launched group-buying websites (e.g., Mercata.com, Mobshop.com) where consumers with similar product-interests can congregate to obtain significant discounts from sellers for buying bulk quantity [11]. *Online group buying (OGB)* extends traditional *e-commerce* shopping model and it refers to collective buying where consumers obtain volume discounts on the products or services from various businesses that are offered in OGB websites. In OGB, interested customers get deal when the number of customers exceeds a minimum required number. OGB vendor websites charge merchants a fee upon a successful deal [12]. The outcome of OGB is win-win, where the consumers receive high discounts and the sellers attract bulk selling in a relatively short period of time. The

OGB websites play a central intermediary role by facilitating the exchange of information, products, and payments, and arrange the delivery of goods (in most cases OGB vendor website generates an electronic coupon, send to customer email, which to be redeemed on the seller's premises) – hence removing a number of intermediaries from the supply chain.

In developing countries the role of intermediaries in food supply chain is very much questionable [5]. For example in Bangladesh, in general, farmers bring their produce to rural markets and sell the same to intermediaries, who then resell the produce to wholesalers or retailers in urban markets. In this process, the rural farmers become deprived of the fair price for their produce. Every year over 12000 farmers commit suicide for not had been successful to recover the productions costs whereas the end-customers pay as much as ten times the growers get [13]. Fortunately, OGB can assist the farmers for quick disposal of their harvest directly to the consumers and thus reduce transaction costs and farmers' dependence on intermediaries, while improving collective bargaining power of the consumers.

Since its inception OGB has attracted reasonable attention in academic literature where most of the studies examined it from customers' perspectives [e.g., 4, 9]. However, literature does not say much about the supplier-side of OGB. Hence, the core objective of this study is to explore the factors related to OGB adoption from the perspective of the suppliers-side of OGB, in the context of agricultural food businesses. To address the research objective, we conducted a field study in Bangladesh through focus group discussions and interviews. Data have been analyzed using content analysis techniques. From data analysis we developed a revised mechanism of OGB that could be operationalized in the agriculture industry in a developing country. Moreover, we developed a framework to explain adoption of OGB in agricultural businesses, which is a unique effort employed to explain OGB dynamics from the perspective of supply-side stakeholders, and specifically in agricultural food industry.

The reminder of this paper is organized as follows. The next section presents a background of the context followed by explaining the research method we applied. Then, the findings of the interviews have been discussed that lead to develop a framework. In the final sections, we discuss the implications of our research and acknowledge the limitations.

2 Background

In Bangladesh, agricultural landholdings are relatively small and scattered where small and marginal farmers represent 80% of all farmers [15]. Where the average farm size in Australia, for example, is 4331 hectares [1], the same is less than a hectare (0.24 hectares) in Bangladesh [16]. Moreover, the farmers have either no or negligible access to information or data about the actual market mechanism including the customer demand, price structure and market competition. Given that most of the growers are small-to-medium sized farmers, they lack the capacity to transport their commodities to bigger metropolitan markets, leaving no other option for them but to sell their harvests to local intermediaries. As the intermediaries take the major share of profit, a large number of farmers become unable to recover the production cost itself.

In recent times, Bangladesh is experiencing a huge growth of mobile telecommunications and mobile-based Internet – about 80 per cent of rural farmers own mobile phones. It provides farmers with enormous potential to converse with the traders. Although a few isolated attempts have been made by telecommunication providers in Bangladesh to provide farmers with some market information, including the indicative selling price of agricultural commodities, there is hardly any noteworthy technological tool to help farmers reaching the actual buyers and receive competitive price for their produce. In this regard, OGB (using mobile Internet platform) holds potential for the farmers to have the opportunity of having a greater access to consumers and secure better price.

3 Research Method

OGB is relatively a recent phenomenon and is still in an early stage of development [4]. More precisely, OGB research from business perspective is scarce. Extant literature [e.g., 20] suggests that a qualitative approach is particularly suitable for a situation where the extant theories and constructs are inadequate to explain the phenomenon of interest. In order to gain insights into the OGB particularly from the business perspectives, this research therefore applied an explorative qualitative approach by conducting interviews.

3.1 Sample and data collection

During 2016-17 we conducted two focus group discussion (FGD) sessions (with 6 and 4 participants respectively) and two interviews among different OGB stakeholders in Bangladesh (government official, business entity, academician, journalist, and technical expert). The selection of the stakeholders was purposive. For example, the journalist has produced a number of reports and conducted a number of round-table discussions exploring the vicious role of the intermediaries and how they deprive the farmers' interest. Similarly, the academicians have been examining possible solution that can secure the right share of profit the farmers deserve. Given that OGB is a new phenomenon and thus individual expertise has not developed yet, we used FGD because it is useful for dealing with new, complex, and unstructured problems. Also, opinions from multiple backgrounds is more productive than single interviews because participants can react to each other and, in this way, generate more ideas than on their own. However, the interviews have been conducted because some interviewees could not attend the FGD sessions because of keeping anonymity.

In order to ensure a variety of responses and to cover as many aspects as possible, participants have been recruited from different stakeholder-groups (see Table 1). For data collection, we used a semi-structured interviewing approach. With the permission of the interviewees, we (audio) recorded the interviews. Interviews were conducted in the local language i.e., Bengali (with a mixture of English). A professional transcription agency transcribed them as the interview was recorded. Then, a bilingual native Bengali professional translator translated it into English, and finally retranslated back to Bengali. This back-translation provided us the opportunity to compare the translation perfection and equivalency; and we made minimal adjustments [11].

Table 1. The profile of the respondents

Respondent	Code	The respondents
FG1	R _A	Department of Agricultural Marketing
FG1	R _B	Operations and Marketing Managers to one of the three largest agro farms
FG1	R _C	Four academician from two agricultural university
FG2	R _D	Managing Director of a business venture with agro-based foods
FG2	R _E	Ex-Director, Department of Agricultural Extension
FG2	R _F	(Information) System Analyst, Software Developer – 2 persons
Interview1	R _G	Owner-manager of a medium farm (>200, <500 employees)
Interview2	R _H	Journalist active in food adulteration reports

3.2 Data analysis

We conducted an exploratory analysis to identify important factors from the qualitative data. The interview transcripts were read by one of the authors who used a data reduction and presentation technique for analyzing, triangulating, and documenting the contents of the transcripts to identify and group similar quotes [12]. First, we identified the first-order concepts directly from the interviews. While doing this, by analyzing and understanding the context we developed common themes; for example, “traffic”, “traffic jam”, “[road] congestion”, “slow movement [of traffic], etc. have been identified as a single theme (i.e., traffic). Then, a group of similar first-order concepts (e.g., storage facilities, payment gateway, or access to technology) were categorized to develop a second-order theme i.e., “infrastructural challenge”. Accordingly, the themes were convened into the dimensions (e.g., challenges) of the framework. Two authors of this study repeated the entire coding process and compared their codes. Minor disagreements were discussed and resolved. While discussing the data (in the following section) we presented some excerpts (we provided the code of the respondent in subscript e.g., R_A refers to the respondent A).

4 Findings

4.1 Developing a new mechanism of OGB in agriculture

Based on the discussions of the respondents, a new mechanism of OGB has been evolved, which can be called as *online group buying-group selling* (OGB-GS) where not only the buyers but also the sellers (i.e., farmers) would form groups to participate in the OGB marketplace. This mechanism is believed to work better in a country like Bangladesh where the farmers produce relatively small quantity, which is more than what they can consume but too less to transport to the market. Here, the small farmers can meet in a virtual *e*-marketplace of OGB-GS and form groups to consolidate their produces. Then, they can take the produce to market as a single consignment. This concept is consistent with ‘co-operative farming’, used to be practiced in Bangladesh couple of years ago [14, 18]. However, because of a number of scams, cooperative farming is now ceased, but R_A and R_E believe that it will be essential for Bangladesh and for OGB-GS.

The ‘group selling’ component of the devised mechanism makes the micro farmers carrying the costs collectively and get the benefit of selling bulk amount which previously was enjoyed by only the ‘fat resellers’. This OGB-GS mechanism can be further institutionalized and operationalized by involving non-government-organizations (NGOs) in at least two processes. First, an NGO in each locality will facilitate consolidation of information by providing an online platform where farmers can upload the products’ quality, quantity, price, availability, etc. Initially, a dedicated person from the NGO will manage the website; that person will receive pictures and associated information from the farmers to upload. The NGO will provide training to the farmers so that eventually they can manage the contents themselves.

Second, the physical facility of the NGO will be used as the consolidation point of the produce from where they will be transported further. Meanwhile, the NGOs will acquire warehouses in the urban areas from where: (i) the OGB initiator or the individual customers can collect the produces, or (ii) the produces will be distributed to the retail shops. However, when the demand of a specific order from a retail business coincides with the supply of produces, the delivery can be direct (bypassing the storage in warehouse). The NGO will manage the transportation too.

The OGB-GS mechanism is much plausible in Bangladesh because there are number of NGOs working in the grass-root level and are very close to the farmers. Also, it is likely that a number of small farmers have borrowed money from the NGOs and this will be a good opportunity for both of the parties to maximize the return on investment. Also “... NGOs would offer credit [for running the OGB] and adjust the cost from the sales”. “They can also engage contract growers (who produce organic foods). ... The growers pay a commission to the NGOs, while the customers [who appreciate organic food] get them effectively. The field-workers [of NGOs] can be engaged in this process who would visit the contract-farms randomly to check authenticity of farming techniques” (R_C).

4.2 The dimensions of OGB-GS framework

In order to develop an adoption framework, we followed Reyes et al.’s [17] approach. The framework consists the drivers, barriers, challenges, and benefits of OGB adoption in the agricultural industry in a developing country. First we present a brief discussion of these factors and then introduce the framework.

4.2.1 Drivers

OGB-GS is driven by technological, social, and entrepreneurial drivers. These are frequently related to ubiquity and rapid change in the business environment.

Technological drivers: The main technological driver for OGB-GS business in Bangladesh is the unprecedented development in the telecommunication networks and Internet. In 2011 the country experienced the phenomenal growth of over 900% of Internet users [7]. Still, the growth rate is 15-16% a year [7]. Agreeing with prior cases [e.g., 3], R_D suggests that emergence of new technologies affect performance of existing business: “The farmers can easily send us [SMS] text and inform about their produces, which could not be believable five years ago. They now get better access to market performance” (R_E). While ISP-based Internet is still an urban privilege, mo-

bile telecommunication operators are providing substantial services in and outside urban areas, which can be utilized in OGB-GS businesses.

“We see a number of agri businesses [mainly in Dhaka city] who run their business mainly via Facebook” (R_D). “As Bangladesh is a significant user of online social media, OGB merchants can view networking sites as a tool to reach to the customers. They could use the social networking sites as a means to manage customer relationships, build community, discuss business issues among the businesses, and create business networks and feedback loops regarding their products and services” (R_G)

Another technological improvement that enhanced Bangladeshi people’s use of Internet and social networks is the facility of typing in their mother language. This advancement could be capitalized by OGB-GS where the stakeholders do not need to deal with language barrier anymore (e.g., English name of the produces).

Social drivers: The huge consumer-base (170 million people living in just 147,570 km²) is considered as a driver for OGB-GS. Because of the size of the population as well as of the tiny area, and a society with collectivism culture, developing a group among the people with similar interests from vicinity is not a problem.

“In fact, collective buying is an inherent culture of the Bangladeshi society. Children buy expensive sports gears collectively; the vast majority people (i.e., Muslims) buy and sacrifice cattle collectively... Applying this collective practice, buying bulk quantity of produces [by a group of people] at significant reduced price should not be an issue in Bangladesh” (R_H).

Furthermore, consumers in Bangladesh are getting more serious than before about the food they consume. *“The print and electronic media, and now-a-days social media, in Bangladesh have been playing a significant investigatory-and-watchdog role revealing the mechanisms of food adulteration, and thus increase people’s health consciousness” (R_H).* The respondents, particularly R_D and R_G, believe that OGB-GS can provide a successful market structure in Bangladesh where authentic farmers will not need to rely on intermediaries but can reach the consumers more directly.

Entrepreneurial drivers: The entrepreneurial culture of the country may drive OGB-GS while this business mechanism can contribute to unemployment. *“But the success of such a new business mechanism needs strong [entrepreneurial] leadership and innovativeness” (R_B).* For example, one of the acute challenges of OGB-GS in Bangladesh would be the delivery and distribution of the perishable products. The respondents urge that the stakeholders need to be innovative; they simply cannot copy and paste a practice from somewhere else. They need to show leadership skills and *“realize the potentials of OGB and then set effective strategy and roadmap.”*

“The social and business structures of the country inspire people to be entrepreneur. You will see thousands of entrepreneurs in every sector. Because of the huge population and less availability of jobs, people tend to be entrepreneur – OGB could grab this opportunity. Young entrepreneurs can take part in every stage of the OGB-GS business – from consolidating the produce to coordinating to transportation and ending with distributing/delivering the products.” (R_C)

“We may think about a couple of options: tagging with the established retail chain stores where customers will come and redeem the electronic coupon, establish a number of outlets in the areas where the most orders come from (e.g., commercial districts where working colleagues will buy the produces and pick them up on the way to go home), and establishing a number of warehouses in the city and distribute the produces to a local agent who will home deliver the products.” (R_G)

Category	Drivers
Technological drivers	Telecommunication and Internet technology Online social networking Typing in mother language
Social drivers	Huge consumer-base Health consciousness
Entrepreneurial drivers	Leadership Innovativeness

4.2.2 The barriers

Despite the benefits and opportunities offered by OGB-GS, there are several barriers that would delay the development of an operational marketplace, and slow and low OGB adoption in Bangladesh. Here, we defined perceived barriers as the extent to which the factors that would reject or delay the implementation of OGB in terms of the customer and business participation. Based on the field study results, two main barriers are identified: economic and technical.

Economic barriers: The first economic barrier is that the participation in OGB-GS markets will incur costs to the supply-side stakeholders; it is a real challenge for them to recover the costs and gain positive return on investment.

“Any requirement of an extra investment [for OGB business] for a farmer will not be appreciated. If the cost components are taken care of by the third parties who will recover the costs in the long run, could be the solution in the context. Before asking the farmers to invest, the third party vendors needs to provide the proof of concept; otherwise the individual farmers will not trust that” (R_E).

Cost issue is even more critical because of the relatively small size of online customers in Bangladesh – that restricts the businesses from reaching economy of scale. Also, an acceptable critical mass consisting online sellers and buyers, which is needed for profitable OGB operation, is insufficient in food businesses.

“Although Internet has been used by a good number of people, they are mainly Facebook users. Only a very few percentage of them do shopping from online markets, let alone the food commodities. Physical stores are still the preferred place to shop - people still love to feel the tomato than order them online” (R_D).

Technical barriers: The OGB market expects all or most of the technical impediments of e-commerce. The technical barriers not only hinder them to adopt e-commerce business models, but are also a source of frustration. The main technical barrier is the unreliable electric power (i.e., power outage). It impacts use of computers and electronic devices. Also, Internet connection (both telecommunications based

as well as ISP) is not consistent. “*It is not unlikely that in the middle of a transaction, you lose Internet connection! Also, the Internet speed limits users to download a page with lots of graphics and/or flash. [The quality of Internet] definitely is an impediment for OGB in Bangladesh*” (R_F). In order to drive OGB, the respondents urge that the government should provide free hotspots and kiosks in the rural markets.

Another barrier for OGB marketplace to start in Bangladesh is related to lack of technical people available with sufficient expertise in technical, legal, and marketing issues; or prohibitively expensive. The respondents did worry that if the technical issues are not addressed seriously, farm businesses will not be able to utilize the digitalization initiatives and thus mass people will not get the benefits from OGB. Here, government may appoint technical persons in rural areas who would assist the farmers to run the OGB-GS businesses – this is common in developing countries [19].

Category	Drivers
Economic	Size of the online consumers – economy of scale & critical-mass Cost of doing business Return on investment Taking a shared responsibility of on-going costs
Technical	Power outage Internet drop out/speed Lack of IT/technical competencies (workforce) Lack of infrastructure (e.g., Web server) & IT sophistication

4.2.3 The challenges

First we identify the difference between ‘barriers’ and ‘challenges’. *Barriers* are the obstacles that prevent or slow down the movement; in order to succeed, a firm must get through the barriers the face. On the contrary, *challenges* are the demanding tasks that firms try to overcome; a firm not necessarily have to take on the challenges but will make it better if accomplished. There are a number of challenges for OGB business in Bangladesh, which we grouped into three categories: infrastructural, legal, and operational.

Infrastructural challenges: Generally speaking, developing countries struggle with various challenges with respect to infrastructural facilities. OGB associates the inherent challenges of *e-commerce* including delivery [2]. In addition, product distribution with limited and inefficient transport infrastructure is huge challenge. “*Taking orders online is easy but delivering the products on-time is not, especially for a country with huge traffic*” (R_D). In order to expedite deliveries, R_D suggests for having distributed warehouses (than centralized) in various locations. He also suggests using bicycle or motorbike for delivery, depending on the order size, to mitigate the delivery issue because of traffic jam.

Another key infrastructural barrier to OGB is electronic payment systems. “*Only less than 5% [bank] cards can be used in online shopping*” (R_E). Moreover, the payment gateways are yet to be settled (for instance, PayPal is not available in Bangla-

desh, till this article is produced)*. R_B suggested that virtual credit cards with micro-payment facilities could be issued so that mass people could shop online. The concept is similar to the gift cards to redeem in online shopping. There will be no physical card but the numbers (like a credit card) will be issued against the balance the customer has in associated bank account. Also, as people in Bangladesh are highly using mobile money transfer services of the banks (e.g., Rocket, BKash), OGB customers could be given the opportunity to transfer funds.

Legal challenges: There are at least three different legal or regulatory issues associated with OGB[†]. The fundamental legal challenge is to identify a person uniquely in Bangladesh [6]. Hence, this is a big challenge for the businesses to make sure if the current law and law enforcement agencies could protect businesses from financial irregularities. Safeguarding both the businesses and the customers, updating the relevant laws to address the online platform and their proper application are challenging. Also, government can develop a professional third party that would work on quality assurance and compliance monitoring of the products. At the business side, in order to reduce disputes, OGB businesses should document their pricing, privacy policies, shipping restrictions, contact information, and business practices on the Websites.

Cultural challenges: The cultural issues are important for OGB because they determine how people interact with the vendors, merchants, and within the groups. Along with the e-commerce issues, OGB includes additional challenges such as trust on the group-leader or initiator [8] and discount mechanism [10]. Lack of trust and reputation especially to unknown merchants is a serious challenge.

“Given all the potential benefits of OGB, still I think a major cultural change will be needed to make people to buy groceries from online markets. Still customers prefer to shop from markets or hawkers although they cannot assure quality etc. [Hence], customers need to change their behavior. In order to get healthy food, they should not compromise with the look and price with quality” (R_G).

“Altogether, we need to create a culture of mutual trust, which I believe will take shape with one good reputed business. Online markets in Bangladesh have passed a decade but unfortunately not a single business could become a giant and establish unquestionable trustworthiness among the customers. The reputation of the existing players is not universal. This is frustrating. In general, people want to trust a vendor in online shopping channel, but the eventual dealings [by the businesses] do not respect such trust” (R_D). Moreover, *“in a developed country food adulteration using pesticides is unthinkable, but almost every agricultural food in Bangladesh is poisoned. ... We have to come out from such ill practice and develop trust and reputation among the consumers. OGB has a great future in this regard because the reputation of a farm can be disseminated quickly and easily through Internet and from groups of customers”* (R_H).

* Only the remittance-service of PayPal (i.e., Xoom) is operating. Yet there are some 3rd party service providers for gateway management; they manage transactions particularly within the country.

† Most legal challenges related to e-commerce are also valid for OGB e.g., cybercrime. We do not redundantly discuss the legal issues of OGB which are common for e-commerce models

Category	Challenges
Infrastructural	Product delivery and return Payment gateway Order fulfilment of large orders – multiple warehouses & automation Limited access to technology (e.g., computer, Internet) Technology know-how Political instability
Legal	Cybercrime Privacy and security of data Quality assurance – standardization and compliance monitoring
Cultural	Trust – reputation dyad Individualist within collectivist culture Risk-averse Developing trust and reputation especially to unknown OGB merchants and vendor (as the shopping channel) Knowledge culture

4.2.4 The benefits

All interviewees recognized a high potential of OGB in Bangladesh for agricultural commodities. Overall, they considered OGB-GS as ‘an opportunity with extreme potential’. The benefits are clustered in: (1) economic, (2) operational, and (3) social.

Economic benefits: All respondents believe that OGB can increase economic outlook of the farmers through bulk sale. They put ‘create increased economic value for the farming community’ as the main expected benefit of OGB in Bangladesh.

“Although the farmers have changed the [economic] outlook of the agriculture industry and the country, their own socioeconomic condition remains same. They have been deceived by the traditional market systems where don’t have a formal access to the wholesale or retail markets and thus they can’t sell their products without the interference of the middlemen. ... Now, we strongly believe that this is the time when the actual people will get the most benefits [through OGB-GS] – the farmers would market their own products collectively to collective customers” (R_C).

The respondents advocate that OGB-GS can provide the small farms an opportunity to collectively handle large volume of customers (in online platform) than a small customer-base per each individual farm. The revised mechanism (i.e., OGB-GS) accommodates the businesses to work collaboratively (and share the costs of doing business) and thus the ability to participate in online platform and take the advantage of digital businesses. Consequently, small farms get a unique opportunity to compete with large ones. Additionally, farms can take the advantage of inexpensive advertising and marketing. Thus, the farms can use it as an additional channel for selling products economically. Additionally, businesses can understand the customer behavior directly and better – what they want, in what quantity, and what time, etc.

Operational benefits: In general, farmers in Bangladesh bring their produce to rural markets and sell the same to intermediaries (e.g., ‘dalals’ meaning go-betweens or ‘arotdaars’ meaning resellers), who then resell the produce to wholesalers or retailers. In this process, with some exceptions, the rural farmers become deprived of the fair price for their produce. Unfortunately, state agencies hardly play any role to regulate

this market mechanism. Lack of having an open, transparent, direct and competitive market where farmers could access the buyers directly is blamed as the main reason for such irregularities.

OGB has the potential to reduce involvements of the intermediaries and thus will contribute to the marginal producers. It can reduce information asymmetry and enhance transparency along the supply chain because the producers will have direct access to the customers. They can dispose a large quantity of products with dynamic pricing strategy and selling in bulk. This new market system would empower them to set the dynamic pricing of the produces according their (longevity) conditions and quality. Hence, OGB will provide greater choices to small farmers and allow them with better and timely access to the market. In essence, it would improve their bargaining position which, in turn, would help negotiating better prices through a competitive e-market process. In summary, OGB would ensure quicker disposal of the harvest, reduce waste and eliminate unnecessary transaction costs including the cost for searching the right buyers or sellers, inventory holding-cost and negotiation cost.

Social benefits: OGB offers various social benefits. First, it has the potential to develop a ‘good for all’ culture – the actual players of the economy i.e., farmers will get appropriate price for their produces while the customers will get them at cheaper price than in the retail markets. When an OGB market operates, it also creates jobs (transport, warehouse, delivery, payment agencies, etc.). Further, OGB may enhance food quality where farmers will share the production process with rich information (text, image, and video); some group of customers may even go for contact farming with a group of farmers.

Second, it is a common perception that OGB will increase social value through direct and indirect group building and interaction. It can contribute to the collectivistic society of Bangladesh particularly in the urban areas where people are losing the bonding day by day. It also motivates altruistic behavior of the citizens – “*you included me in a group to buy rice, I shall add you in buying meat*”. “*OGB also will improve quality of decision-making through collective opinions. A bunch of people cannot make a wrong choice (R_A).*”

Category	Benefits
Economic	<ul style="list-style-type: none"> Increased revenue from bulk sale Reduce intermediary commissions Reducing operational and marketing costs Opportunity to bargain instead of selling at a fixed price Development of innovative product/service
Operational	<ul style="list-style-type: none"> Disintermediation of the middlemen Can liquidate large quantities in a short period of time Reduce information asymmetry through direct access to consumers & more visibility of product information (e.g. price, quality) to consumers
Social	<ul style="list-style-type: none"> Social interaction ‘Good for all’ culture Improved decision-making through confidence on others Altruism

From the content analysis, we found that the OGB-GS adoption in Bangladesh’s agricultural industry represents a novel situation because of some unique features of the country and the industry. The respondents discussed about a number of associated factors to consider explaining OGB adoption in agricultural industry, which we utilized to develop a framework, mostly from the business perspectives (see Figure 1). The proposed framework consists of four higher-level dimensions: drivers, barriers, challenges, and benefits.

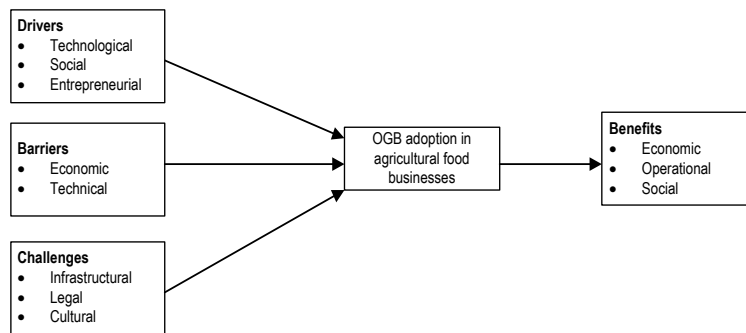


Figure 1. OGB adoption framework in agriculture businesses

5 Conclusions

5.1 Implications of the study

Although OGB has been used in developed countries for some years, it is still at infancy stage in developing countries. Some characteristics of developing countries make huge difference for OGB success. The current study intends to shed light on these issues. We summarize that, as experience accumulates and technology improves, the cost-benefit ratio of OGB will increase, resulting in greater rates of OGB adoption by businesses. It also urges for educated people to be engaged in OGB business, especially so that they can contribute to policy making and other areas where the typical illiterate farmers cannot. This study suggests that OGB stakeholders should assess the need, preference and scope of participating, both from the supplier as well as customer side. They also should assess the effectiveness of participation in terms of the business’s objectives and customer behavior. Businesses should carefully consider the target customers and the products, based on their preferences. Eventually, the associated factors (some of them explored in the current study) will be confirmed and thus OGB will take a workable shape.

5.2 Limitations

This study has a few limitations that may be addressed by future research. First, two FGD and two interviews may not be sufficient to have a holistic understanding about the potential of OGB in Bangladesh; we need more research to reach generalization. Such analysis can further investigate the adoption-diffusion process – how a farm moves from pilot testing to implementation to extension. Second, we developed the variables from supplier-side. Future studies could explore customer-side factors and integrate in a single model, and investigate their relative importance/effect by applying an analytical hierarchical model. Finally, this study focuses on reporting the elements of the OGB adoption framework (e.g., drivers, barriers, challenges, and benefits); however, it is possible that these factors affect each other. Future empirical research will investigate such inter-effects.

5.3 Conclusion

Prior studies consider OGB as a sustainable business model for many businesses; our study extends it to a group-selling (by the farmers) and group-buying (for customers) mechanism. It is found that, the stakeholders of agricultural food industry realize OGB mechanisms as difficult to understand, formulate, and implement/operate. The reasons are manifold including lack of supportive financial (payment method, risk of transaction, dispute resolution) and physical infrastructure (delivery, return), and culture of the market and customers. The OGB adoption framework developed in this study combines these relevant factors in a single initiative.

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