

FACTORS AFFECTING THE ADOPTION OF B2B E-COMMERCE: A CASE OF READYMADE GARMENTS (RMG) INDUSTRY IN BANGLADESH

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Abstract

The export oriented readymade garments (RMG) sector of Bangladesh plays a significant role to the economy of Bangladesh. B2B e-commerce is a revolution to this sector. Thus, the country has become the trading nation instead of predominantly aid receiving nation with the blessings of e-commerce. This study aimed to investigate the factors influencing the adoption of business-to-business (B2B) e-commerce in the RMG sectors of Bangladesh as most of the RMG sectors of Bangladesh extensively used to with this online service mainly due to the performance enhancement of the business and for sustaining in the global competition. The study was based on the data obtained in two stages i.e., first for developing constructs of the study from 12 experienced professionals (Merchandiser and IT) through the in-depth interview and then collected data through the questionnaire developed by the constructs from the data getting at the initial stage. Through analyzing 213 completed questionnaires by SmartPLS 3.0 software, this study found some significant and positive relationships ($p < 0.05$) of sourcing, spontaneous solution, cost saving, security with the adoption of B2B e-commerce while positive but insignificant relationship ($p > 0.05$) of negotiation, inventory control, and customer focus with the adoption of B2B e-commerce in the RMG sectors of Bangladesh.

Keywords: Business to Business(B2B) e-Commerce, Adoption, Bangladesh.

Introduction

The buying and selling of goods and services through online are called E-commerce whereas Business to Business or B2B e-commerce can be defined as the business which is conducted through online between companies rather than between a company and individual consumers (Turban et al., 2015a). In the modern technological era, it is known as one of the most innovative and radical development.

E-commerce includes internet marketing, supply chain management, mobile commerce, online transaction processing, electronic data interchange (EDI), automated data collection system, inventory management system etc. To gain competitive advantage, firms are engaged in initiatives of E-commerce through linking supply chain process and customer satisfaction across enterprises and customers. Thus, they create efficiency and effectiveness of firm by using E-commerce. Besides these, the value and reputation of the organization are increased by improving the approach, E-business works.

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B2B e-commerce is increasing productivity, reducing the overhead of the staff, and making transparent auditing systems. Thus, it reduces the shortcomings of the traditional business functionality streamlining the instant information sharing (Vize et al., 2016). However, a number of challenges had to face by the firms that wanted to adopt B2B e-commerce. The scenario is same both for the developed and developing countries of the globe. The frequently facing challenges are the unwillingness of the clients due to its insufficient trustworthiness, poor telecommunication infrastructure, lack of well-trained supporting staff, hurdle in the payment system, and lower penetration in credit card and bank account (Yuthayotin, 2015).

The scenario is almost same for the Bangladesh except for the endeavors of the present government to fulfill the vision 2021 to have digital Bangladesh. However, the change in e-commerce sectors in Bangladesh is notable (Nafea and Younas, 2014). In Bangladesh, B2B e-commerce is widely used in terms of negotiation, sourcing, spontaneous solution, cost saving, inventory control, customer focus, and for secured transactions with the foreign delegates. Moreover, it is noticeable that a lion's share of world trading takes place through using internet technology (Turban et al., 2015b). B2B e-commerce is more likely practiced in the USA and covers 91% of all online transactions (Turban et al., 2016). The case is almost similar to Canada where 61% online transactions is performed by e-commerce (Huang and Yu, 2016). It is also mentioned that there is a growing prospect of B2B e-commerce in case of China and India.

Through B2B e-commerce, business is conducting smoothly irrespective of distance with the trading partners like USA, Germany, UK, France, Canada, and Italy, from which Bangladesh earn a huge amount of foreign currencies (Hale and Wills, 2011).

There is lack of research regarding the adoption of B2B e-commerce in the readymade garments industry of Bangladesh. Some research conducted on B2B e-commerce in Bangladesh did not focus on the adoption factors. For example, Shahriar Ferdous and Hossain (2011) identified overall marketing practices in Bangladesh while Ishtiaque and Sarwar (2016) showed e-commerce practices in Bangladesh. Moreover, Azam (2007) studied on the impacts of B2B e-commerce in Bangladesh and Hossain (2000) found status, constraints, and potentials of e-commerce in Bangladesh. So, it is revealed that no or little study was conducted to identify the adoption factors of B2B e-commerce in Bangladesh. Therefore, it is crucial to overcome the gap of this study. The objective of this study is to investigate factors influencing the adoption of B2B e-commerce in the readymade garments industry of Bangladesh.

Hypothesis

For this study, following null hypotheses have been developed which are also to be tested.

H1: Negotiation through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H2: Sourcing through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H3: Spontaneous solution through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H4: Saving cost through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H5: Inventory control through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H6: Customer focus through using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

H7: Sufficient security in using B2B e-commerce has positive influences towards the adoption of B2B e-commerce.

Methodology

This study is based on both primary and secondary data. Primary data were collected through face to face interview from the professional MBA (Apparel Merchandising) students in BGMEA University of Fashion and Technology, Uttara, Dhaka, Bangladesh with a structured questionnaire. The main respondents were the Merchandiser (110), Assistant or trainee merchandiser (60), and IT staff (43) of the 15 garments factories of Bangladesh and the collected data were aggregated to have the sound understanding of the garments industry as a whole (See table 1). Thus, data were collected from 228 respondents of 15 factories located in Dhaka, Gazipur, and Narayanganj of Bangladesh during June 2016 and January 2017, as most of the garments industries are located in these areas.

Table 1: Respondents Details

Demographic Variable		Frequency	Percentage (%)
Gender	Male	155	73
	Female	58	27
Age	20-25	27	13
	25-30	51	24
	30-35	97	46
	35 and Above	38	18
	Profession	Merchandiser	110
	IT staff	60	28
	Assistant Merchandiser	43	20
Total		213	100

Due to the limited study on the adoption of B2B e-commerce in the readymade garments industry of Bangladesh and for the cost effectiveness, convenience sampling method was adopted in this study with a structured questionnaire. The secondary data were collected from different published official statistics, reports, articles, and websites.

All of the measures for latent constructs were developed through the face to face interview of some experienced merchandiser and IT professionals who are currently working in the factory and dealing with the customers. The structured questionnaire was divided into two parts where first part contains the demographic information. However, the second and the most important part of the questionnaire was designed on a 5-point

Likert scale ranging from strongly disagree (1) to strongly agree (5). 228 respondents were managed from 15 different factories out of which data from 213 respondents were taken for analysis using Smart PLS 3.0 software and remaining data from 15 respondents were not taken for analysis due to the incomplete answer of the questions.

Results and Discussion

Measurement model evaluation

Through examining the internal reliability (composite reliability and Cronbach's alpha), convergent validity (item loading and average variance extracted), and discriminate validity (square root of the AVE and cross loading), the measurement model was evaluated. The results showed internal reliability in this study as both the Cronbach's alpha and composite reliability are above the threshold value of 0.70. The findings also proved the convergent validity of the constructs with the AVE ranging from 0.530 to 0.730 and item loading ranging from 0.528 to 0.938. The measurement model was shown in table 2. Moreover, the study had discriminated validity as the diagonal elements are greater than the entries in corresponding columns and rows which is depicted in table 3.

Table 2: Measurement model

Constructs	Items	Loadings	CR	Cronbach's Alpha	AVE
Adoption	A1	0.764	0.835	0.737	0.559
	A2	0.715			
	A3	0.765			
	A4	0.744			
Cost Saving	CS1	0.831	0.766	0.767	0.530
	CS2	0.528			
	CS3	0.788			
Customer Focus	CF1	0.845	0.890	0.836	0.730
	CF2	0.938			
	CF3	0.773			
Inventory Control	IC1	0.751	0.780	0.781	0.543
	IC2	0.788			
	IC3	0.667			
Negotiation	N1	0.857	0.728	0.850	0.580
	N2	0.604			
	N3	0.583			
Security	SE1	0.688	0.784	0.833	0.576
	SE2	0.720			
	SE3	0.632			
	SE4	0.717			
Sourcing	S1	0.628	0.781	0.885	0.548
	S2	0.712			
	S3	0.861			
Spontaneous Solution	SP1	0.748	0.811	0.754	0.589
	SP2	0.819			
	SP3	0.733			

Table 3: Correlation matrix and square root of the AVE

	Adoption	Cost Saving	Customer Focus	Inventory Control	Negotiation	Security	Sourcing	Spontaneous Solution
Adoption	0.748							
Cost Saving	0.375	0.728						
Customer Focus	0.086	0.042	0.855					
Inventory Control	0.213	0.165	-0.016	0.737				
Negotiation	0.268	0.334	0.348	0.078	0.693			
Security	0.471	0.173	-0.098	0.176	0.105	0.690		
Sourcing	0.284	0.217	0.135	-0.056	0.293	0.152	0.740	
Spontaneous Solution	0.373	0.342	-0.091	0.159	0.126	0.352	0.197	0.767

Hypotheses Testing

Through path coefficient (β), and t -statistics, the relationship between dependent and independent variables was examined. The results showed the positive relationships between Sourcing and Adoption ($t=1.975$, $\beta=0.133$, $p< 0.05$), Spontaneous solution and Adoption ($t=2.287$, $\beta=0.139$, $p< 0.05$), Cost Saving and Adoption ($t= 2.828$, $\beta= 0.186$, $p< 0.05$) and Security and Adoption ($t=5.610$, $\beta=0.348$, $p< 0.05$). Thus, H2, H3, H4, and H7 were found significant and accepted in this study. However, the study also found some positive but insignificant relationships with the adoption like Negotiation and Adoption ($t=0.959$, $\beta=0.074$, $p> 0.05$), Inventory Control and Adoption ($t=1.790$, $\beta=0.108$, $p> 0.05$), and Customer Focus and Adoption ($t=0.973$, $\beta=0.088$, $p> 0.05$). Therefore, H1, H5, and H6 were less significant and rejected in this study. The structural model of this research is shown in table 4.

Table 4: Structural model

Hypothesis	Path	(β)	t- statistics	Comments
H1	N-> A	0.074	0.959	Rejected
H2	S-> A	0.133	1.975	Accepted
H3	SP-> A	0.139	2.287	Accepted
H4	CS-> A	0.186	2.828	Accepted
H5	IC-> A	0.108	1.790	Rejected
H6	CF-> A	0.088	0.973	Rejected
H7	SE-> A	0.348	5.610	Accepted

As the study aimed to develop and test the factors influencing the adoption of B2B e-commerce in the RMG sector of Bangladesh. Initially, data were collected from 12 experienced merchandisers and IT staff for getting the constructs of this study. After taking the constructs, questionnaires were made in the second stage. Through collecting and analyzing the data of 213 respondents, the empirical findings have got some significant factors influencing the adoption of B2B e-commerce in the most potential industrial sector (RMG) of Bangladesh. The results are also consistent with the previous studies. Adopting B2B e-commerce-enhancing the cost reduction of a firm (Minna Rollins, D., et al., 2015).

The study also found security measures, the most significant factor for adopting B2B e-commerce in the RMG sector of Bangladesh with the highest coefficient factor (See Table 3). Sufficient security in online transactions mainly increases the number of new business to adopt B2B e-commerce (Urumsah, D., 2015). Sourcing and spontaneous solution are the vital factors for adopting B2B e-commerce (Tenenbaum, J.M. and R. Khare, 2005).

However, this study found customer focus; inventory control and negotiation have positive significant influence in adopting B2B e-commerce in the RMG sector of Bangladesh. Compared to the developed countries, infrastructure and the commitment of the top management in our country are not up to the mark. That's why Bangladesh is yet to have positive results of technology in the RMG sector. Customer focus is the most significant factor that has a negative influence towards the adoption of B2B e-commerce (Chatzoglou, P. and D. Chatzoudes, 2016). Moreover, sourcing and spontaneous solution are the vital elements which are difficult for a firm to adopt in the business (Sahay, B. and A.K. Gupta, 2001).

Conclusion

This study aimed to identify the factors influencing the adoption of B2B e-commerce in the RMG sector of Bangladesh. The analysis found some significant factors i.e. cost saving, security, sourcing, and spontaneous solution, which have a significant positive relationship, and other three factors i.e. customer focus, inventory control and negotiation which have an insignificant relationship to the adoption of B2B e-commerce in the RMG sector of Bangladesh. The findings of the study contribute to the body of B2B e-commerce research and maximize its adoption in other developing countries. A future study could use longitudinal data to transparent the causal relationship among variables over time.

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