



Factors that Drive Customers towards E-Commerce in Bangladesh: A Perceptual Exploration of Click and Mortar Business

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Abstract

E-commerce has facilitated trade in many effective ways. With the reduction of physical contact, it has brought up to a whole new dimension with innumerable potentials in molding modern day trade. The concept of e-commerce is relatively novel in Bangladesh. A customer would go for e-commerce only when there is benefit inherent in the process. Commonly, benefit is measured in terms of time, cost, accessibility, convenience, value addition and post purchase services. In the study, the customers' perception regarding click and mortar business showed that e-commerce is better than traditional commerce broadly in terms of time, accessibility and convenience, and psychosomatic features. Specifically, the findings show that, e-commerce saves purchase and trading time; does easy accessibility of sites; makes more savings, supports fast transaction, helps in hassle free shopping; provides necessary information, and demands physical shipping or delivery. But the respondents perceive to suffer from cognitive dissonance (negative feeling after purchase), unsatisfactory post purchase service, and inadequate change/money back for delivered products. The findings suggest further improvement in product design, marketing strategy, and especially, internet infrastructure.

Keywords: Click & Mortar, Convenience, Cost, Post Purchase Services, Time, Value Added Services

BACKGROUND/ISSUE

E-commerce started a few decades ago and is developing fast. During the Covid-19 period it became the major form of business. E-commerce describes the electronic mode of doing business with the help of internet, websites, and its enabled technologies. This internet-based business addresses the needs of organizations, traders, and consumers to cut costs while taming the quality of products, service, and delivery (Bartelt & Lamersdorf, 2001). It differs from the traditional trade and commerce in the way that it enables the movement of goods, money, and information electronically and there is minimal need for paper currency or tangibles to conduct business (Hensmans, Bosch & Volberda, 2001). The internet allows customers to get product and related information at a single platform (Bruner, 1997; Park & Kim, 2003; Settles, 1995). E-commerce business is gradually transforming into mainstream business activity allowing the consumers to switch and buy brand products.

E-commerce applications are boosting productivity, profitability, lowering costs, increasing customer satisfaction and company responsiveness (De, Mathew, & Abraham 2001; Steinfield, 2004). It is a hybrid technology that helps customers or companies to disseminate or gather business information, or to conduct business transactions. So, e-commerce is not just computer, internet, software, etc.; but is a novel way of doing business. Quick adaptation of e-commerce and its modules would give a broader and clearer perspective to potential investors and existing

vendors in the changing business environment. With the steep growth of the internet, many companies are finding new and exciting ways to expand their business opportunities through e-commerce by bringing businesses and consumers to the same floor (Bakos, 1997). In this competitive market, the number of competitors is increasing day by day; so, to retain and acquire customers, and survive in the market, online presence works as a key success factor for most of the businesses.

Factors that influence the e-commerce are *customers* who may travel with global operations, *products* that are the same or are assembled by subsidiaries globally, *operations* or assembly process assigned to global subsidiaries, *resources* like equipment, facilities, and people shared by subsidiaries of a global company, *collaborations* that can be quickly accessed, shared, and organized to support individual or group efforts (Park & Kim, 2003). A robust high-speed dependable IT platform can support such geographic flexibilities, keep track of such shared resources, help provide speedy, convenient service, help manage worldwide selling and quality control, and encourage such enterprise collaboration (Hoffman et al., 1996; Rosen & Howard, 2000).

The click and mortar¹ strategies create a bridge between the physical and virtual world to facilitate the communication and transaction processes (Hensmans, Bosch, & Volberda, 2001, Chen & Hitt, 2002). The research works on click and mortar business strategies and factors affecting consumer buying behavior in online shopping suggest convenience

as an important factor to motivate customers to purchase products online (Tracy, 1998; Donthu & Garcia, 1999). There are some other factors such as time, ease and effort that influence the buyer decision-making while purchasing from e-commerce (Devaraj, Fan & Kohli, 2003). Ease of use means easier accessibility, site navigation and speed, information architecture, payment process, and search facilities (Constantinides, 2004; Wolfinbarger & Gilly, 2001).

Conventional e-commerce models are i) *B2B (Business-to-Business)* where companies doing business with each other such as manufacturers selling to distributors, and wholesalers selling to retailers, ii) *B2C (Business-to-Consumer)* where businesses selling to the general public typically through catalogs utilizing shopping cart software, iii) *C2B (Consumer-to-Business)* where a consumer posts his project with a set budget online and within hours companies review the consumer's requirements and bid on the project, and iv) *C2C (Consumer-to-Consumer)* where individuals can buy and sell from sites offering free classifieds, auctions, and forums using online payment systems to send and receive money online with ease. E-commerce is a novel internet platform for doing business where customers will be given services at home or office, which can include retail and automotive, electronic data interchange, defense and heavy manufacturing (Lu, 2004).

Broadly, the advantages of e-commerce are the *speed* that gives businesses opportunity to communicate and complete transactions, *cost saving* in marketing, distribution, personnel, phone, postage, and printing costs (Benjamin & Wigand, 1995), *free boundary* as cyberspace does not have any national boundary and can connect everyone in cyberspace, transmit information at high speed, and *ease* of networking allowing people to meet with others, gather data/information and stay in touch easily (Bakos, 1997). The customers also receive *reduced prices* since stages along the value chain are decreased (Steinfeld, 2004), *global market place* as the consumers can shop globally, *24-hour access* as online businesses never sleep as opposed to brick-and-mortar businesses, *more choices* as customer can study about all the major brands and features of any item, and *quicker delivery* of products and services (especially with digitized products).

In e-commerce, there is an option where any sort of complaint regarding the services can be registered. Consumers can also return their goods to the accessible location if there is any problem with the products. Additionally, e-commerce business can be embedded in various social networks which also improve the trust to the consumers (Steinfeld & Whitten, 1999). Ethical concerns regarding e-commerce would also have to be considered. Current issues in e-commerce ethics and brick-and-mortar business are fundamentally the same, but e-commerce issues have different manifestations and scope (Kracher & Corritore, 2004). Often individualism-collectivism and uncertainty avoidance, and their interaction

that influences internet shopping rates across a wide spectrum of countries (Lim et al, 2004).

E-commerce business model is not a very old concept in Bangladesh. Most of the people in this country tend to purchase products from the traditional business outlets. But this trend is changing, and noticeable customers are switching from physical shops to online shops. The Covid-19 scenario has even made e-commerce more demanding. Some common factors, like demographic, social, economic, cultural, psychological, and other personal, also influence the customer behavior in buying products from both the virtual and physical market (Lodorfos, Trosterud, & Whitworth, 2006). In e-commerce issue there have been several research works on click and mortar business strategies and factors affecting consumer buying behavior conducted in different parts of the world, but limited research have been conducted in Bangladesh to address the issue. This paper attempts to give insight into e-commerce products, their extension opportunities, coverages, and factors that motivate online purchase, etc.

RETAIL E-COMMERCE

E-commerce is often cited as a paradigm shift in the retail world which displays similarities with retail stores and mail order companies. As an explicit body of distributive trades, e-commerce is a source of transaction cost advantages and a way to sell certain products at prices potentially lower than the traditional distributive channels (Santarelli & D'Altri, 2003). In retail online business, it is difficult to directly examine the product and so must rely upon the accuracy and reliability of the seller in deciding whether and how much to offer. Evidently there exists an impact of the retailer's reputation on the willingness of buyers to bid on items sold via internet offerings. Melnik & Alm (2002) observed that often the seller's reputation has a positive, statistically significant, but small impact on the price. This becomes particularly important in an auction setting.

Trust is identified as a major factor hampering the growth of retail e-commerce (Meziane & Kasiran, 2008), its functional mechanism, its non-transparent processes, and the quality of products that goes with online shopping (Delafronz, Paim, Haron, Sidin, & Khatibi, 2009). It is noted that a significant number of online shoppers abandon their transactions because they do not trust the website when they are asked to provide classified data. Functionally, trust is seen as a distinct but potentially coexisting mechanism for reducing the uncertainty and complexity of transactions in e-commerce (Grabner-Kraeuter, 2002). Trust makes consumers comfortable sharing personal information, making purchases, and acting on web-vendor advice (McKnight, Choudhury, & Kacmar, 2002). In C2C business models, mutual trust among members and members' trust in the platform provider are of primary concern (Chen, Zhang & Xu, 2009; Looney, Jessup, & Valacich, 2004).

Often e-retailers must develop and test the effectiveness of several trust-building strategies to influence actual buying behavior in online shopping, particularly for first-time visitors. Satisfied customer endorsement through reviews of peers, but not portal association, has been found to increase consumers' trusting beliefs about the store. This, in turn, positively influences consumers' attitudes toward the store and their willingness to buy from the store, leading to actual purchase (Lim et al, 2006). Since trust-building mechanisms and establishing trust can reduce the uncertainty arising from information irregularities in exchange transactions, trust-building mechanisms are crucial to the sustainability and growth of on-line marketplaces (Greiner & Wang, 2011).

Often it has been observed that the volume of the trade (i.e., heavy versus light shoppers) affects the customer's satisfaction and loyalty toward an e-commerce retailer. Frequently light shoppers are more into receiving value for their money, while heavy shoppers are more focused on trust as a measure of gratification (Chiou & Pan, 2009). For the retailers, one of the most important aspects of attracting customers is found to be shipping cost. E-retailers pursue multi-cost strategies for shipping that lead to higher gross product prices, which are the sum of net product price and shipping costs and thus try to capture consumer surplus targeting different consumer segments. A "high shipping cost" is used to exploit consumers' biased perceptions of partitioned prices or offering "free shipping" to attract consumers and exploit their so-called zero-risk bias (Frischmann et al, 2012).

An often-ignored aspect of the e-commerce revolution is the participation of women. Historically, women have had low participation in technological fields, and this has been reflected through negative portrayals of women in technology ads. As producers of e-commerce, women have made significant advances, in many cases approaching and even exceeding men. Studies show that, ads for e-commerce products portray women more equitably (Koernig & Granitz, 2006). Many e-retailers use online word-of-mouth systems, where consumers can rate products offered for sale. The effect of online trust on intention to shop online is often moderated by gender, i.e., the effect of trust on intention to shop online is stronger for women than for men (Awad & Ragowsky, 2008). Furthermore, men value their ability to post content virtually, whereas women value the responsive participation of other consumers to the content they have posted.

OBJECTIVES

The broad objective of the study is to explore the e-commerce users' perception regarding different features of e-commerce. Specifically, the study tried to identify the types, frequency and channels of traded products, assess the efficiency and importance of different beneficial services of click and mortar business.

METHODOLOGY

This empirical study, exploratory in nature, made use of both primary and secondary data and pertinent literature review. Primary data is collected from various e-commerce users through on-line surveys using non-probabilistic convenience sampling technique. The secondary data includes journal articles, books, conferences, and research papers. The population of the study is the internet conversant individuals in Bangladesh who has utilized, at least once, web-based e-commerce services. A coordination schema is developed reviewing literature and talking to knowledgeable persons. The schema identified the parameter, complex variables, simple variables, and values. Based on coordination schema, a questionnaire is developed which includes i) different aspects of e-commerce (Section A), ii) dichotomous responses of different performance features (Section B), iii) respondents' perception regarding different e-commerce attributes (Section C), and iv) ideographic data. The questionnaire was pretested with 8 respondents.

The survey is conducted online using Google docs. Based on comprehension and totality, the study considered responses from 75 e-commerce users (at 90% confidence level, 9% precision and 50% proportion). Almost all the respondents are found to reside in the capital Dhaka and other major cities. This can be rationalized in the sense that capital city Dhaka and other major urban cities have the maximum users, companies and supportive infrastructure for e-commerce activates. The study used face validity to identify the variables, implying that the items chosen to measure a variable are logically related to it. The group wise and overall cronbach's alpha values indicated that the data is reliable and internally consistent (Table 1). The study made use of statistical tools to analyze the data that include index analysis, t-test, z-test, ANOVA, correlation, factor analysis, regression, etc.

Table 1. Reliability statistics

Cronbach's Alpha		
Section B (No. of Item 13)	Section C (No. of Item 22)	Overall (No. of Item 35)
0.605	0.814	0.812

The respondents were mostly product-based retail buyers and hence the other aspects of e-commerce were not fully explored. E-commerce users in Bangladesh typically rely on the 'cash on delivery' method of transaction, and therefore the use and effectiveness of other forms of transactions like credit or debit card could not be explored. E-commerce is not very widespread in the country. Thus, customers could not compare and make comparisons with good or more efficient sites. However, their comparison between conventional brick-and-mortar and retail e-commerce can shed some light on the important factors that motivate purchase decisions of the customers.

DATA ANALYSIS AND FINDINGS

Respondent Profile

The respondent profile shows that the mean age of the respondents is 25.6 years with an age range of 35 years. The respondents are mostly in the age categories of 15-25 years (44%) and 26-35 years (56%). This depicts that most of the e-commerce affiliated population are comparatively young. Education wise it is found that 17.3% have higher secondary certificate, 54.7% have bachelor degree, 28.0% have master or above degree. This implies that consumers need to be educated to get involved in e-commerce. Further, most e-commerce respondents turned out to be students (50.7%). Service holders cover 36.0% of the respondents and 13.3% have other professions (e.g., business, entrepreneurs, etc.). The monthly income distribution shows that 42.7% respondents have income below \$118, 16% have income between \$118-236, 14.7% have income between \$235-353, 12.0% have income between \$353-470 and another 14.7% have income more than \$470. The average monthly income is \$224. It seems young people with low income but high level of technological know-how and financially solvent are the major users of e-commerce.

Different Aspects of E-Commerce

The study has focused on three distinct areas of e-commerce: i) frequency and uses, ii) problems and challenges and iii) services and devices. The findings are given below.

Frequency and Uses

The study found that 70.7% practice e-commerce mainly for personal use, only 2.7% use it for business purposes, while 26.7% use it for both. The frequency of engagement of the respondents in e-commerce activities is mostly once in a month (56%), followed by more than once in a week (16.0%), once in a week (13.3%), and once in two weeks (15.7%). Hence it can be concluded that e-commerce is infrequently used for personal trade.

Problems and Challenges

The problems the users often face during using e-commerce are technical (49.3%), payment (45.3%), lack of information (40%), product delivery (24%), product warranty & guarantee (38.7%), and few other (1.3%). Main challenges they face are information security (40.0%) and data trust (44.0%) issues. Other challenges include slow internet (9.3%), and others (6.7%).

Services and Devices

The services the users expect from e-commerce are shopping (66.7%), banking (64%), billing (57.3%), trading (30.7%), airlines (21.3%), hosting (20.0%), and other services (2.7%). The devices they use for e-commerce are PC/Laptop (77.3%), smartphone (10.7%), tablet (1.3%), both PC & smartphone (9.3%) and all together (1.3%). As noted, majority of the respondents use PC/Laptop as the device for e-commerce activity. There is a significant growth in usage of smartphones for such transactions as well. In the age of mobile banking and numerous online transactions, it is necessary for vendors to improve such web-based infrastructure in which Bangladesh is lagging much behind. According to Ookla², Bangladesh ranked 98th out of 181 countries in terms of broadband internet speed, and farther behind in terms of mobile internet speed, ranking 135th out of 137 countries.

Dichotomous Findings of Different Performance Features of Ecommerce

The respondents are given 13 performance features to see their reaction in a simple dichotomy (Yes/No) type format (Table 2). In only four cases the majority are found significantly ($\alpha=5\%$) affirmative as the e-commerce features. These features are: i) accessibility to e-commerce websites from any platform (77.3%), ii) e-commerce requires less time in online trading than traditional trading (92%), iii) e-commerce can provide an alternative marketing channel by eliminating middleman (93.3%), and iv) application of e-commerce has increased over the years in Bangladesh (94.7%).

In seven cases the majority answered significantly ($\alpha=5\%$) negatively. These e-commerce features are: i) finding all the information and updates about the product regularly (62.7%), ii) getting logistics for service (61.3%), iii) finding satisfactory customer care service in Bangladeshi sites (82.7%), iv) satisfying security measures for personal information (68%), v) provision available for quality control and assurance (68%), vi) satisfied with the warranty/guaranty provisions (80%), and vii) strictly controlled/assured product quality (84%). The rest two cases the frequency of answers is not significantly different at 5% level of significance. These are: i) bidding for the price of a product is useful (49.3% vs 50.7%), and ii) satisfactory delivery system of the purchased product (46.7% vs 53.3%).

Table 2. Dichotomous frequency of Different Performance Features of Ecommerce

Question	Yes	No
1. Are you satisfied with the accessibility to websites from any platform (PC/Laptop/Cell phone)?	58 (77.3%)	17 (22.3%)
2. Do you find customer care service satisfactory in Bangladeshi sites?	13 (17.3%)	62 (82.7%)
3. Do you find all the information and updates about the product and services regularly?	28 (37.3%)	47 (62.7%)
4. Do you think bidding for the price of a product useful?	37 (49.3%)	38 (50.7%)
5. Are you satisfied with the delivery system of the purchased product?	35 (46.7%)	40 (53.3%)
6. Do you think it requires less time in online trading than traditional trading?	69 (92.0%)	06 (8.0%)

7. Do you get logistics for service?	29 (38.7%)	46 (61.3%)
8. Are you satisfied with the security measures for personal information?	24 (32.0%)	51 (68.0%)
9. Is there provision available for quality control and assurance?	24 (32.0%)	51 (68.0%)
10. Are you satisfied with the warranty/guaranty provided by e-commerce sites in Bangladesh?	15 (20.0%)	60 (80.0%)
11. Do you think that in e-commerce the product quality is strictly controlled/ assured?	12 (16.0%)	63 (84.0%)
12. Do you think e-commerce can provide an alternative marketing channel by eliminating middleman?	70 (93.3%)	05 (06.7%)
13. Do you think application of e-commerce has increased over the years in Bangladesh?	71 (94.7%)	04 (05.3%)

Respondents' Perception Regarding Ecommerce Performance Features

The respondents are given option in a 5-point summated Likert scale (1: Strongly disagree, 2: disagree, 3: Indifferent, 4: Agree, 5: Strongly agree) to evaluate 22 performance features of e-commerce (Appendix 1). Of the 22 variables 21 are very objective attributes (1-21) and one (22) is overall perception regarding e-commerce. The 21 unique e-commerce product features are grouped into five categories: i) Service, ii) Time, iii) Cost, iv) Accessibility and convenience, and v) Psychosomatic (Appendix 1). The individual, group wise and overall analysis are given below.

Distinct Feature Wise

It can be noted that of the 22 unique variables ten are not significantly ($\alpha=5\%$) different from 3 (Indifferent)(Table 3). Numerically 16 of the variables has mean indexes greater than 3 (Seven of them are not significantly different from 3). On the other hand, 6 of the variables have mean index less than 3 (Three of them are not significantly different from 3).

The nine variables where the respondents agreed with the statements are: i) Less time is spend for purchasing e-commerce product (3.84), ii) Ecommerce saves time for trading (3.77), iii) E-commerce is better than traditional commerce (3.75), iv) E-commerce sites are easily accessible from PC/laptop/cell phones (3.71), v) More savings is made for not shopping physically (3.63), vi) Transaction is made very swiftly in e-commerce (3.63), vii) Shopping through e-commerce is hassle free (3.60), viii) E-commerce site provides necessary information about products (3.48), and ix) Shipping or delivery of product in e-commerce is essential (3.47). The three variables where they do not agree with the attributes are: i) No suffering from cognitive dissonance (negative feeling after purchase) (2.69), ii) Satisfactory post purchase service (2.56), and iii) Change/ money back for unsatisfactory products (2.13).

As noted, 21 of 22 variables are very specific to e-commerce features. The mean index of these 21 attributes is 3.20 ($\sigma=0.439$) with a level of significance 0.049. The mean index of all 22 attributes is 3.23 ($\sigma=0.444$) with a level of significance 0.026. These two mean values are also consistent with the mean index of overall perception regarding e-commerce over traditional trading (3.75). From the above findings and analysis, it can be concluded that e-commerce has proved its worth among e-commerce users. It is high time that the government, the think tank, the strategists and the policy makers take positive steps for supporting this industry for its growth and sustenance.

Table 3. Respondents' perception regarding different ecommerce features

Variable Statements	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
1) Ecommerce saves time for trading	3.77	1.073	0.000
2) Ecommerce reduces cost satisfactorily	3.17	1.018	0.145
3) Information search for products is easier in e-commerce	3.19	1.023	0.118
4) Ecommerce provides better value-added service	3.19	0.968	0.099
5) Satisfactory post purchase service provided by e-commerce firms	2.83	0.921	0.107
6) Satisfactory delivery time of purchased products	2.95	1.089	0.673
7) Very swift transaction in e-commerce	3.63	1.088	0.000
8) Less time is spent for purchasing e-commerce product	3.84	1.001	0.000
9) Cheaper shipping/delivery of products	2.87	1.070	0.284
10) More savings in e-commerce for not shopping physically	3.63	1.050	0.000
11) Shopping through e-commerce is hassle free	3.60	1.127	0.000
12) E-commerce sites are conveniently accessible from PC/laptop/cell phones	3.71	0.941	0.000
13) E-commerce site provides necessary information about products	3.48	0.964	0.000
14) Attractive/smart design and features of the websites	3.01	0.979	0.906

15) Shipping or delivery of product in e-commerce is essential	3.47	0.991	0.000
16) Quality of the product are assured by e-commerce firms	3.24	1.076	0.057
17) E-commerce sales/customer care service is satisfactory	3.11	1.085	0.397
18) Security of personal information is maintained strictly	3.15	1.087	0.246
19) Satisfactory post purchase service	2.56	1.003	0.000
20) Change/money back for unsatisfactory products	2.13	1.004	0.000
21) No suffering from cognitive dissonance (negative feeling after purchase)	2.69	0.915	0.005
22) E-commerce is better than traditional commerce	3.75	0.974	0.000
Average of 1-21	3.20	0.439	0.049
Average of 1-22	3.23	0.444	0.026

Group feature wise Analysis

The 21 unique e-commerce product features are grouped into five categories: i) Service, ii) Time, iii) Cost, iv) Accessibility and convenience, and v) Psychosomatic (Appendix 1). The overall perception is kept aside. The service category grouped four variables, time category grouped four variables, cost category grouped four variables, accessibility and convenience category grouped five variables, and psychosomatic category grouped four variables. Group-wise analysis follows.

Service

In this group, four distinct e-commerce service features are identified (Table 4). The mean values of the features shows that only one of the four features are significant different from 3 (at $\alpha=5\%$). That means the users are indifferent to value added service, post purchase service, and customer care service of the sites, but they found the post purchase service provided by e-commerce firms is to some extent inconvenient. The group mean (2.92) also found not to be significantly different from 3 (at $\alpha=5\%$) indicating the users' overall *indifference* to e-commerce service. This is also supported by the findings that only 17.33% of the respondents satisfied with e-commerce customer care service, 46.7% satisfied with the delivery system of the purchased product, as well as, 38.7% are satisfied with logistics support service. These should be improved for better market coverage.

Table 4. Respondents' perception regarding e-commerce service

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
A. Service	1) Ecommerce provides better value added service	3.19	0.968	0.099
	2) Satisfactory post purchase service	2.83	0.921	0.107
	3) Satisfactory customer care service of sites	3.11	1.085	0.397
	4) Convenient post purchase service provided by e-commerce firms	2.56	1.003	0.000
	Overall	2.92	0.559	0.219

Time

In this group, four distinct e-commerce time related features are identified (Table 5). The mean values of the features show that all but one is significantly different from 3 (at $\alpha=5\%$). The users agreed that e-commerce saves their trading time, made the transaction very swift, and spend less time for purchasing e-commerce product/service; but they found the delivery time of purchased product is not satisfactory. The group mean (3.547) also found to be significantly different from 3 (at $\alpha=5\%$) indicating the users' overall positivity to e-commerce time. This is also supported by the previous finding where 92% users agreed that less time is required in online trading than traditional trading. Thus time can be used for better market coverage.

Table 5. Respondents' perception regarding e-commerce time

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
B. Time	1) Ecommerce saves time for trading	3.77	1.073	0.000
	2) Satisfactory delivery time of purchased product	2.95	1.089	0.673
	3) Transaction can be made very swiftly in e-commerce	3.63	1.088	0.000
	4) Less time is spend for purchasing e-commerce product/service	3.84	1.001	0.000
	Overall	3.547	0.689	0.000

Cost

In this group, four distinct e-commerce cost related features are identified (Table 6). The mean values of the distinct features show that two of them are significant and two are not significantly different from 3 (at $\alpha=5\%$). The users agreed that virtual shopping is cost effective compared to physical shopping, but they found change/money back for defective products inadequate. They are found indifferent to reduced e-commerce cost and cheaper product shipping/delivery cost. The group mean (2.95) also found to be not significantly different from 3 (at $\alpha=5\%$) indicating the users' overall indifference to e-commerce cost. In the same tone it is noted that 49.3% users commented on the usefulness of the bidding for the price of a product.

Table 6. Respondents' perception regarding e-commerce cost

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
C. Cost	1) Ecommerce reduced cost satisfactorily	3.17	1.018	0.145
	2) Shipping/delivery cost of products cheaper	2.87	1.070	0.284
	3) More savings is made for online shopping compared to physical shopping	3.63	1.050	0.000
	4) Change/money back for unsatisfactory products	2.13	1.004	0.000
	Overall	2.95	0.667	0.518

Accessibility & Convenience

Regarding accessibility & convenience, five distinct e-commerce features are identified (Table 7). The mean values of the distinct features show that three of them are significant and two are not significant at $\alpha=5\%$. The users agreed that shopping through e-commerce is hassle free, e-commerce sites are easily accessible from PC/laptop/cell phones, and e-commerce sites provide necessary information about products, but they are not sure if information search is easier for e-commerce products and if the websites design and features are attractive. The group mean (3.40) found to be significant at $\alpha=5\%$, indicating the users' overall satisfaction to e-commerce accessibility & convenience. In support of the above findings, it is noted that 77.3% users are satisfied with the accessibility to websites from PC/Laptop/smart phone, 93.3% viewed that e-commerce can provide an alternative marketing channel by eliminating middleman and only 37.3% perceived that they cannot find all the information and updates about the products regularly (37.3%).

Table 7. Respondents' perception regarding e-commerce accessibility & convenience

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
D. Accessibility & Convenience	1) Information search for products became easier for e-commerce	3.19	1.023	0.118
	2) Shopping through e-commerce is hassle free	3.60	1.127	0.000
	3) E-commerce sites are easily accessible from PC/laptop/cell phones	3.71	0.941	0.000
	4) E-commerce site provides necessary information about products	3.48	0.964	0.000
	5) Attractive design and features of the websites	3.01	0.979	0.906
	Overall	3.40	0.690	0.000

Psychosomatic features

Regarding psychosomatic features, four distinct e-commerce features are identified (Table 8). The mean values of the features show that two of them are significant and two are not at $\alpha=5\%$. The users agreed that shipping/delivery of product in e-commerce is essential, but they do not agree that there is no suffering from cognitive dissonance (negative feeling after purchase). They are not sure if quality of the products is assured by e-commerce firms and if the security of personal information is maintained strictly. The group mean (3.14) found to be insignificant at $\alpha=5\%$, indicating the e-commerce users' overall indifference to personal satisfaction. Supporting the findings it is observed that 32% users are satisfied with the security measures, 32% think that there are provisions for quality assurance, 20% satisfied with the warranty/guaranty provisions, and 16% think that the product quality is strictly controlled.

Table 8. Respondents' perception regarding psychosomatic features of e-commerce

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
E. Psychosomatic features	1) Shipping or delivery of product in e-commerce is essential	3.47	0.991	0.000
	2) Quality of the product are assured by e-commerce firms	3.24	1.076	0.057
	3) Security of personal information is maintained strictly	3.15	1.087	0.246
	4) No suffering from cognitive dissonance (negative feeling after purchase)	2.69	0.915	0.005
	Overall	3.14	0.327	0.463

Overall Perception

The respondents are asked to give their view regarding e-commerce and traditional business transaction. Overall, the e-commerce users agreed that trading with e-commerce is better than traditional business. Here, the mean value (3.75) is found significantly different from 3 (Indifferent) at 5% level of significance (Table 9). This supports the previous finding that 94.7% users think that the application of e-commerce has increased over the years in Bangladesh.

Table 9. Respondents' overall perception regarding e-commerce

Category	Features	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
F. Overall perception	1) E-commerce business is better than traditional business	3.75	0.974	0.000

Comparison of Group Means of E-Commerce

In this section a comparison is made among the mean indices of the five categories of e-commerce (Table 9). As noted three of the five group indices are significantly above 3 (Indifference). This implies that e-commerce users have shown their positivity regarding time (3.55), accessibility & convenience (3.40), and psychosomatic features (3.26). But regarding service (2.92) and cost (2.95) the users are indifferent. Overall, the mean is found to be towards agreement ($\mu=3.22, \sigma=0.276$), but significantly different from 3 (Indifference) at 15.6%.

Table 9. Comparison of group means of e-commerce

Overall	Groups	Mean (μ)	Std. dev. (σ)	2-tailed sig. ($\mu=3$)
Group e-commerce performance	A. Service	2.92	0.559	0.219
	B. Time	3.55	0.689	0.000
	C. Cost	2.95	0.667	0.518
	D. Accessibility & Convenience	3.40	0.690	0.000
	E. Psychosomatic features	3.14	0.327	0.463
	Mean (A-E)	3.19	0.277	0.196

FACTORS THAT DRIVE CUSTOMERS TOWARDS E-COMMERCE

Factors and Corresponding Variables

A factor analysis³ (Extraction: Principal Component Analysis, Rotation: Varimax with Kaiser Normalization) reduced the 22 simple variables into seven factors with eigenvalue greater than one (Table 10). The factor analysis with 75 sample is found adequate (KMO test result = $0.645 \geq 0.5$) and valid (Bartlett's test of sphericity significance level 0.000)⁴. The communalities⁵ of the variables that constituted the factors are found strong, indicating robust relationships among the variables (Appendix 2). As can be seen from the table, the seven factors explain 63.933% of the variability. Further, it is noted that the first factor (Time Service) appears to be the most important as it explains 22.109% of the variability. Other factors include "Cost" ($\sigma^2=9.666\%$), "Psychosomatic features" ($\sigma^2=8.250\%$), "Accessibility" ($\sigma^2=6.740\%$), "Convenience" ($\sigma^2=6.174\%$), "Security & Service" ($\sigma^2=5.969\%$), and "Quality" ($\sigma^2=5.024\%$).

Table 10. Factors, Eigen value and Variance Explained by the Individual Factor

Component/Factors	Initial Eigenvalues	% of Variance	Cumulative %
Factor 1: Time	4.643	22.109	22.109
Factor 2: Cost	2.030	9.666	31.775
Factor 3: Psychosomatic features	1.733	8.250	40.025

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Factor 4: Accessibility	1.415	6.740	46.766
Factor 5: Convenience	1.297	6.174	52.940
Factor 6: Security & Service	1.254	5.969	58.909
Factor 7: Quality	1.055	5.024	63.933

It appears that *time* is the most important factor perceived by the e-commerce users as it explains 22.109% of the variability (Table 11). All other factors found less important as they explain one-digit variability. This factor has five variables with high factor loadings⁶ indicating relative strengths of the individual variables. It is noted that the users are satisfied with trading time saving and less time spent for purchasing e-commerce products. Other variables in this factor are necessity of shipping/delivery of product, convenient accessibility from PC/ laptop/ smart phones and hassle-free shopping.

The second factor *cost* explains 9.666% of the variability. This factor has three variables of comparatively high factor loadings. These are satisfactory cost reduction, comparatively cheaper shipping/delivery of products and more savings for not shopping physically. The third factor *psychosomatic features* explain 8.25% of the variability. This factor has five variables with the first one with high factor loadings. This is attractive/smart design and features of the websites. Other variables include satisfactory post purchase service, no suffering from cognitive dissonance (negative feeling after purchase), satisfactory delivery time of purchased products and very swift transaction in e-commerce.

The fourth factor *accessibility* explains 6.74% of the variability. This factor has three variables, of which the first two has high factor loadings. These are easier information search for products and e-commerce sites provide necessary product information. The other attribute is better value-added service in e-commerce. The fifth factor *convenience* explains 6.174% of the variability and has only one variable. This is change/money back for unsatisfactory products.

The sixth factor, *security*, explains 5.969% of the variability. This factor has three variables with high factor loadings. These are strict secured maintenance of personal information, satisfactory sales/customer care, and post purchase service. The seventh factor *quality* explains 5.028% of the variability and has one variable which is assured product quality by e-commerce firms.

Table 11. Factors, Variables and Factor Loadings

Factors	Factor loading	Factors	Factor loading
Factor 1: Time ($\sigma^2=22.109\%$)		Factor 4: Accessibility($\sigma^2=6.413\%$)	
1) Saves trading time	0.700	1) Information search is easier	0.784
2) Shipping/delivery of product in e-commerce is essential	0.613	2) Sites provide necessary product information	0.704
3) Sites are conveniently accessible from PC/ laptop/cell phones	0.598	3) Provides better value-added service	0.531
4) Less time spend for purchasing products	0.593	Factor 5: Convenience ($\sigma^2=6.174\%$)	
5) Shopping is hassle free	0.570	1) Change/money back for unsatisfactory products	0.836
Factor 2: Cost ($\sigma^2=9.666\%$)		Factor 6: Security & Service ($\sigma^2=5.969\%$)	
1) Reduces cost satisfactorily	0.794	1) Security of personal information is maintained strictly	0.758
2) Cheaper shipping/delivery cost	0.712	2) Sales/customer care service is satisfactory	0.653
3) More cost savings for not shopping physically	0.605	3) Satisfactory post purchase service	0.606
Factor 3: Psychosomatic features ($\sigma^2=8.250\%$)		Factor 7: Quality ($\sigma^2=5.024\%$)	
1) Attractive/smart design & features of the sites	0.782	1) Product quality is assured by e-commerce firms	0.800
2) Satisfactory post purchase service	0.589		
3) No suffering from cognitive dissonance (negative feeling after purchase)	0.491		
4) Satisfactory delivery time of purchased products	0.428		
5) Very swift transaction	0.346		

Regression Analysis with the Factors and Dependent Variable

As noted, the study has identified seven factors. A regression analysis is conducted taking the factors as explanatory (independent) variables and perception regarding ‘e-commerce is better than traditional business’ as dependent variable. The regression model is found to be significant (=0.000) and explains 46.1% of the variability ($R=0.715, R^2=0.512, R^2_{adj}=0.461$) (Table 12). Further it can be noted that of the seven factor variables only three is significant at 10% level of significance (Table 13).

Table 12. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.921	7	5.132	10.034	0.000 ^b
	Residual	34.265	67	.511		
	Total	70.187	74			
a. Dependent Variable: e-commerce is better than traditional business						
b. Predictors: (Constant), Seven REGR factors						

Table 13. Regression Coefficients^a

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.747	0.083	-	45.372	0.000
REGR factor score 1	0.577	0.083	0.593	6.941	0.000
REGR factor score 2	0.141	0.083	0.145	1.695	0.095
REGR factor score 3	0.218	0.083	0.224	2.624	0.011
REGR factor score 4	0.068	0.083	0.070	0.819	0.416
REGR factor score 5	-0.004	0.083	-0.004	-0.048	0.962
REGR factor score 6	0.089	0.083	0.091	1.066	0.290
REGR factor score 7	-0.269	0.083	-0.276	-3.239	0.002

^a Dependent Variable: e-commerce is better than traditional business

SUMMARY, CONCLUSION AND RECOMMENDATION

E-commerce is an internet-based business practice that avoids physical contact to run business. With the astonishing growth of the internet, many companies are finding new and exciting ways to expand their business opportunities. E-commerce business model is not a very old concept in Bangladesh. Most of the people in this country tend to purchase products from traditional business outlets. But now this trend is changing, and it is noticeable that customers are switching from physical shop to online shop for buying products. The empirical study explored the e-commerce users’ perception regarding benefits of e-commerce; specifically, identified the types, frequency and channels of traded product, assessed the efficiency and importance of different beneficial services of click and mortar business.

The study used non-probabilistic convenience sampling to identify 75 internet conversant individuals in Bangladesh who has utilized, at least once, web-based e-commerce services available for online purchase or trade. A structured questionnaire was developed after pretesting to understand users’ perception regarding different aspects of e-commerce. The study used face validity to identify the variables and found reliable and internally consistent. Most of the respondents

are comparatively young and educated students. Service holders cover a significant portion of the respondents. It seems young and mid-aged people with average income but high level of technological attachment and financially solvent are the major consumers of e-commerce.

The study found that most of the respondents practice e-commerce for personal use only, but a significant number use it for both personal and business purposes. The frequency of engagement of the majority is once in a month, but a significant portion of the respondents use it once in 1-2 weeks. Consumers often face problem with e-commerce are related to technology, payment, information, guarantee, and delivery. Main challenges they face are security and trust. The services expected from e-commerce are shopping, banking, billing, trading, airlines, and hosting. The devices used for e-commerce are mainly PC/Laptop; but there is a significant growth in usage of smartphones as well. In the age of mobile banking and numerous online transactions, it is necessary for vendors to improve such infrastructure.

The respondents’ reaction to 13 e-commerce features found majority affirmative to i) accessibility from any platform, ii) less time requirement in online trading, iii) provision of alternative marketing channel by eliminating middleman, and iv) increase in application over the years. On the other

hand, majority of the respondents’ reacted negatively to i) finding the information and updates regularly, ii) getting logistics for service, iii) satisfactory customer care service in sites, iv) satisfying security measures, v) provisions available for quality control and assurance, vi) satisfied warranty/guaranty provisions, and vii) strictly controlled/assured product quality. They are indifferent to i) usefulness of bidding for the price of a product, and ii) satisfactory delivery system of the purchased product.

The respondents’ perception in a 5-point likert scale (1: Strongly disagree, 2: disagree, 3: Indifferent, 4: Agree, 5: Strongly agree) to evaluate 22 performance features of e-commerce noted that 12 of them are significant: Nine of them agree and three disagree. The nine variables the respondents are agreeable are i) less time spend for purchase, ii) saves time for trading, iii) better than traditional commerce, iv) easy accessibility from PC/laptop/smart phones, v) more savings, vi) swift transaction, vii) hassle free shopping, viii) provision of necessary product information, and ix) need for shipping or delivery of product. The variables where the respondents do not agree are i) no suffering from cognitive dissonance (negative feeling after purchase), ii) satisfactory post purchase service, and iii) change/money back for unsatisfactory products.

Further the 22 variables are grouped into five categories. As noted three of the five group indices are significantly different from 3 (Indifference). The e-commerce users have shown their positivity regarding *time, accessibility & convenience, and psychosomatic features*. But regarding *service and cost* the users are indifferent. Overall, the e-commerce benefit is found to be positive at 15.6% significance level. Hence it can be recommended that the investors could focus on strengthening the value added and post purchase service, as well as security measures. Improvement in these sectors would elevate customer benefit, which would increase business opportunities and the growth of e-commerce.

Appendix 1: Communalities

Attributes	Extraction	Attributes	Extraction
1) Ecommerce saves time	0.648	12) sites are conveniently accessible from PC/laptop/cell phones	0.572
2) Ecommerce reduces cost	0.662	13) Provides necessary information about products	0.626
3) Information search is easier	0.699	14) Attractive/smart design & features	0.731
4) Better value-added service	0.716	15) Shipping/delivery is essential	0.747
5) Satisfactory post purchase service	0.602	16) Quality of the product are assured	0.696
6) Satisfactory delivery time	0.571	17) Sales/customer care service is satisfactory	0.510
7) Very swift transaction	0.399	18) Security of personal information is maintained strictly	0.637
8) Less time is spent for purchase	0.460	19) Satisfactory post purchase service	0.755
9) Cheaper shipping/delivery cost	0.687	20) Change/money back for unsatisfactory products	0.768
10) More savings for not shopping physically	0.669	21) No suffering from cognitive dissonance (negative feeling after purchase)	0.560
11) Shopping is hassle free	0.713		

NOTES

- 1 A click-and-mortar business model is based on investing in both a physical and online presence. Click and mortar models are becoming increasingly popular as consumers seek to buy products online and off and to examine products offline before buying them online.
- 2 Ookla is the global leader in mobile and broadband network intelligence, testing applications and technology. With over 10 million consumer-initiated tests taken daily on the company’s flagship platform, speed test, Ookla provides invaluable insight into the performance, quality and accessibility of networks worldwide.
- 3 Factor Analysis is a type of analysis used to discern the underlying dimensions or regularity in a phenomenon. Its general purpose is to summarize the information contained in many variables into a smaller number of factors. It is an interdependence technique in which all variables are simultaneously considered.
- 4 Ideally the sample size should be at least 110 (*subject to variable ratio > 5*). But in Bangladesh as there is very limited use of e-commerce, we must limit our responses to 75 which is less than preferred one (110).
- 5 Communality refers to a measure of the percentage of a variable’s variation that is explained by the factors. It is the amount of variance an original variable share with all other variables included in the analysis. A relatively higher communality indicates that a variable has much in common with the other variables taken as a group.
- 6 ‘Factor loading’ is a measure of the importance of the variable in measuring each factor. It is used for interpreting and labeling a factor. It is the correlation between the original variables and the factors, and key to understanding the nature of a factor.

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