

Evaluation of customer satisfaction via analysing the impact of variant strata of e-commerce logistics handover

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Abstract

Nowadays, e-commerce has been extending its arena exponentially, as the sector is known as a data-and-technology-driven platform. Its innovative and efficient approaches broaden its customer base and enhance customer satisfaction. To maintain higher customer satisfaction, the e-commerce industry has to focus on its end-tier of logistic handover, according to various published studies. As there's a lacuna of perceiving the end-tier logistic handover from customers' perspective, the authors have conducted a study on payment period (PP), delivery charge (DC) and distribution time (DT) to perceive the correlation among the variables and their influence on customer satisfaction. 250 online-based-questionnaires were distributed via simple random sampling technique among the target participants reside in Dhaka city. The study found that the participants show a neutral stance towards the variables and believe the quality of product yields higher customer satisfaction. Furthermore, the authors conclude that e-commerce firms should have an effective end-tier logistic system within a moderate delivery period to maintain the quality of the product. This study aims to contribute the acquired results to solve existing and emerging logistic problems e-commerce firms are facing via understanding the customers' viewpoint.

Keyword: E-commerce, End-tier logistics handover, Delivery charge, Distribution time, Payment period.

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Introduction

E-commerce, the trendiest term in today's world, is highly motivated among young entrepreneurs and businessmen. The benefits that the e-commerce platform provides to the owners help them grow their business with the right knowledge. The more skilled the management is, the better the result of the business or the firm. But the entire profitability of the business depends on one key variable; customer satisfaction. A business can only go so far without gaining customer satisfaction. In reality, it is much harder to start a business than gaining customer satisfaction. E-commerce logistics is one of the main sources of competitive advantage for businesses (Ambroziak & Tkaczyk, 2015).

E-commerce customer satisfaction depends on various e-commerce logistics as lead time, delivery method, payment method, etc. But these logistics performances show different paths in different regions (Xiao et al., 2017). Customer satisfaction depends on the balance of responsiveness and efficiency. Some prefer discounted products to fast delivery where some prefer the opposite. To ensure customer satisfaction, e-commerce businesses have to find a way to provide their goods and services at the cheapest rate with high responsiveness.

In Bangladesh, e-commerce logistics have a great impact on customer satisfaction as well. The delivery method is one of the biggest determining factors here. All over the world, customers want their products at their doorstep. From where customer picks their product from has a big impact. The time that delivery of a product takes also has a significant impact on customer satisfaction (Lina et al., 2014). The less the better some say. Even the transit cost is an influential element of customer satisfaction.

E-commerce logistics provide ample options for payment. The easiest method attracts customers more. Even though electronic payment methods are the most secure, reliable and convenient way (Kousaridas et al., 2008), Security of transaction is the biggest issue of e-logistics goods (Peha & Khamitov 2004; Stroborn et al., 2004). The significant factor of e-payment is the security, and by each day the payment issue is getting critical (Cotteleer et al., 2007; Linck et al. 2006; Stroborn et al. 2004). E-commerce platforms are fighting every day with the security threat and yet, there are numerous complaints which threaten customer satisfaction (Chou et al., 2004; Dai & Grundy, 2007). The concern of security all over the world is seen around 95% while using credit cards and six out of ten have the fear of theft (Kim et al., 2010). In Bangladesh, customers prefer to use COD (cash on delivery) more than electronic prepaid payments.

Objectives of this study:

The objective of the current study is to present the effects of variant strata of logistics in the customer satisfaction level. There are some **specific objectives** given below:

1. To find out which payment procedure customers like when purchasing from e-commerce.
2. To investigate the delivery methods that are convenient for customers.
3. To discover how distribution time affects customer satisfaction.

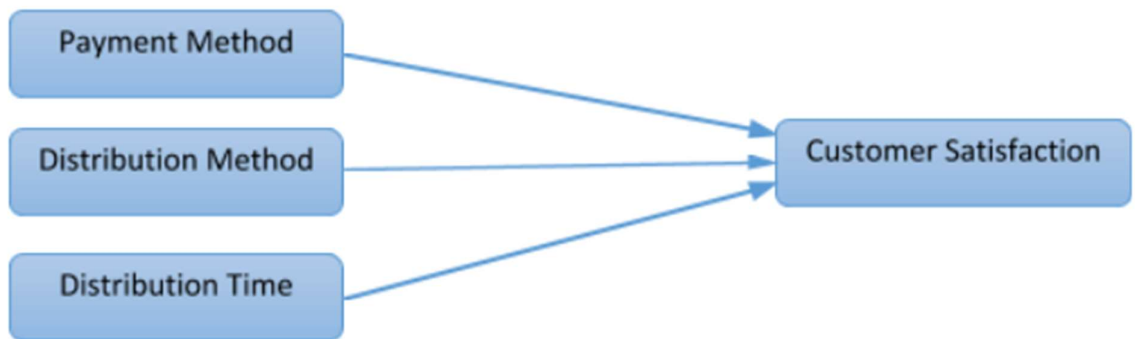


Figure 1: Theoretical Framework (prepared by the authors)

Literature Review

A number of studies have been carried out to evaluate and analyse the impact of e-commerce logistics handover that affect customer satisfaction. Tseng and You (2005) conducted a research to find out the role of transportation in the logistics chain. This research result shows that e-commerce is the future trend of business style where both companies and customers will be benefited by expanding the market area from regional to global, promoting effectiveness and competitiveness and reducing the number of warehouses. The number of trips will be increased so this will impact on the transportation system.

Yang et al. (2017) found that e-commerce is technology-driven where the main model is innovation and quick expansion. By improving operational efficiency, it will be led to high productivity growth.

Kozerska (2014); Ambroziak and Tkaczyk (2015) looked into the importance of the logistic operator in e-commerce. Where they found, a logistic operation is the key element of e-commerce development and it is often found as one of the main factors of competitive advantage.

One of the major parts of the supply chain is logistics, that design, conduct and manage the efficient flow also ensures the storage of a large number of goods and services at the same time it also creates a chain of information between the source point and to the consumption to fulfil the customer needs (Netro et al., 2016).

In any logistic system, one of the most vital elements is distribution (Gunasekaran & Ngai, 2003). It consists of the distribution of the goods and services to its final customer. The operation comprises inputting, stocking, transporting and also the distribution of its final product to its actual customer. (Gunasekaran & Ngai, 2003).

According to the research of (Xia & Tingting, 2016), customer satisfaction level varies with the delivery price where low delivery charges raise the level of satisfaction and the level of customer satisfaction fall with high delivery charges. To manage the situation, a new distribution channel could be initiated in e-commerce so that the companies can diminish the delivery charges which will enhance the satisfaction level of the customer.

Besides, delivery time also plays an important role in logistics which has a significant impact on the level of the customer (Lina et al, 2014). Logistics services and delivery time are the major logistics concerned problems (CNNIC, 2014). Delay in delivery causes customer

dissatisfaction. So, increasing the delivery speed is the most effective way to raise the satisfaction level of the consumers.

Another main factor that influences the satisfaction level of the customer is the payment system. Consumers always prefer a simple and trustworthy payment method while purchasing a product online. One of the core factors of companies is the e-payment system. It has also become the most difficult factor a successful business as well as all other financial services (Cotteleer et al., 2007; Hsieh, 2001; Kousaridas et al., 2008; Stroborn et al., 2004). Moreover, e-payment method also has a big impact which influences positively on the satisfaction level of the customer.

Methodology

The methodology of research simply means the way a researcher designs and execute a systematic study to ensure reliable and effective results which can meet the aims and objectives of the research. This is one of the most important parts of research (Hameed et al., 2017). The methods of analysing data should be appropriate with the problem to find out the accurate result.

However, this study is based on the quantitative approach of research. Both primary and secondary data have been gathered with a view to conducting this research. Considering the existing and imminent risks arising out of COVID-19, the authors have decided to accumulate the primary data related to the given topic via disseminating a structured online-based questionnaire survey among the participants and to collect secondary data from relevant online journals, published article in different websites and newspaper.

The questionnaire has been reviewed by an expert who has the expertise to review a survey and modified based on his comment to find out more valid and reliable results. To quantify the attitude of the participants and measure the variables, a five-point Likert scale has been used, where 5 represents “strongly agree” and 1 signifies “strongly disagree”. Customers from Dhaka who buy from e-commerce have been asked to specify their level of agreement and disagreement on every statement.

Table 1: Reply rate

Reply Rate	Frequency/Rate
Disseminated Questionnaires	250
Responded Questionnaires	190
Useable Questionnaires	180
Excluded Questionnaire	10
Rate of response (Initially)	76%
Rate of response (Adjusted)	72%

Analysis and findings

Descriptive analysis and correlation analysis have been used to evaluate the collected data. To convert the numerical data into pictorial form descriptive analysis has been used, to define the demographic profiles of the respondents, frequency distribution has been drawn, and to examine the relationship between the dependent variable (satisfaction of online buyers) and the independent variable (distribution time, delivery charge, and payment period), correlation analysis has been used.

Analysis and findings of demographic and behavioural attributes:

From the attained data, initially, the authors have analysed the participants on the basis of demographic attributes in order to understand the nature of the participants.

Table 2: Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <=20	10	5.6	5.6	5.6
21-25	148	82.2	82.2	87.8
26-30	14	7.8	7.8	95.6
31-35	4	2.2	2.2	97.8
36>=	4	2.2	2.2	100.0
Total	180	100.0	100.0	

Table 3: Profession

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Student	159	88.3	88.3	88.3
Service Holder	15	8.3	8.3	96.7
Businessman	1	.6	.6	97.2
Self-employed	1	.6	.6	97.8
Others	4	2.2	2.2	100.0
Total	180	100.0	100.0	

The targeted audience belongs to the age range 21-25 years old composed of 82.2% of total target participants (Table-2). Majority of them are students. In general, the data for this research has been taken from young and energetic participants (Table-3).

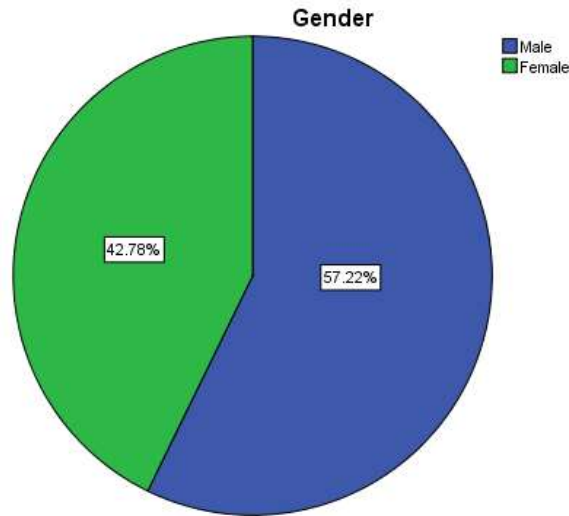


Figure 2: Classification of gender

From this figure, we can say that more than half of the total participants are male.

Table 4: Purchasing Behaviour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	21	11.7	11.7	11.7
	Rarely	60	33.3	33.3	45.0
	Occasionally	41	22.8	22.8	67.8
	Often	35	19.4	19.4	87.2
	Very often	23	12.8	12.8	100.0
	Total	180	100.0	100.0	

180 people have responded, out of them, 41 are occasional buyers, 35 of them buy often from e-commerce, 23 respondents purchase very often from online, 21 of them never purchased and rest of the others purchases rarely (Table-4).

Analysis and finding of the study:

In order to measure the objectives and find the results, the analysis of the attained data is a must. Here in the following section, the authors have provided their statistical and structural data and reviews of them.

Table 5: Descriptive Statistics of the target respondents

		Payment Period	Delivery Charge	Distribution Time
N	Valid	180	180	180
	Missing	0	0	0
Mean		3.3097	3.2389	3.6319
Median		3.2500	3.2500	3.7500
Std. Deviation		.49464	.52309	.50998

The authors have observed that the respondents provide neutral feedback on each variable. They believe our taken variable might have a neutral influence on customer satisfaction. Even, the standard deviation for each variable varies between the range of 0.495 to 0.523, which refers to the less deviation from the mean (Table-5).

Table 6: Reliability Statistics

Cronbach's Alpha	N of Items
.502	3

The obtained reliability test of these three variables confers a moderate response (Table-6).

Table 7: Correlations

		Payment Period	Delivery Charge	Distribution Time
Payment Period	Pearson Correlation	1	.239**	.255**
	Sig. (2-tailed)		.001	.001
	N	180	180	180
Delivery Charge	Pearson Correlation	.239**	1	.261**
	Sig. (2-tailed)	.001		.000
	N	180	180	180
Distribution Time	Pearson Correlation	.255**	.261**	1
	Sig. (2-tailed)	.001	.000	
	N	180	180	180

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the payment period and the delivery charge is 0.239, which indicates the least correlation exists in the relationship. Furthermore, the correlation between payment method and distribution time is 0.255, which refers to the least connection. However, the correlation between distribution time and delivery charge yields much more than that between the other variables. The authors believe the assumptions held in the inception of the report cannot be aligned with the attained results (Table-7). From the supply chain perspective, these independent variables have not yielded the expected results, which indicates that there is an extraneous variable that affects customer satisfaction.

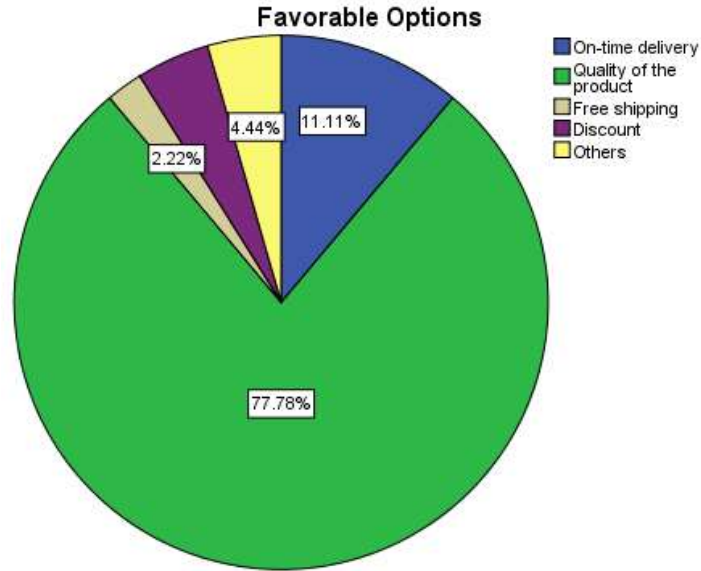


Figure 3: Favourable Options

After analysing the data, the authors have found some contrary results from our target respondents. The authors have observed that the respondents have found that “quality of the product” can affect their satisfaction level. Only do 11.11% of respondents require on-time delivery (Figure-2).

The authors initially had the assumption that there might be a positive and highly coordinated relation between customer satisfaction and each variable. In the analysed data, the customers of the designated area also provide a neutral stance for the mentioned variables, namely payment period, delivery charge and distribution time. Later, the authors’ finding concludes, considering the attained results, that effective logistic handling which can help organizations preserve and contain their product quality can play a pivotal role.

Conclusion

An e-commerce business needs to know the reasons that trigger the intentions of the customers to take a concrete decision. In the improvement of organizations operating in the e-commerce sector, logistics customer services have significant importance. An effective end-tier logistic can help a firm gain competitive advantages in the market. This study addresses how different logistic variables impact customer satisfaction. It has been assumed that the selected variables (payment method, distribution time, delivery method) might have had a significant influence on customer satisfaction. But the authors found that the variables have little or neutral influence on customer satisfaction. So, e-commerce organizations should focus on other independent variables that may have a significant influence on customer satisfaction. They should consider not only the highest quality of products or services but also the kind of logistics services it provides to ensure customer satisfaction.

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Appendix– A:

The following are the related personal information given by the respondents.

Name:

Profession:

- I. Student
- II. Service Holder
- III. Business man
- IV. Self-employed
- V. Others.

1. Age:

- i) ≤ 20
- ii) 21-25
- iii) 26-30
- iv) 31-35
- v) $36 \geq$

2. Gender:

- i) Male
- ii) Female

3. How often do you purchase from an e-commerce site?

- i) Very often
- ii) Often
- iii) Occasionally
- iv) Never

4. Which method(s) of payment do you prefer? (Multiple options)

- i) Credit/Debit cards
- ii) Mobile payment
- iii) Cash on delivery
- iv) Other

5. Which delivery method do you favor most?

- i) Home delivery with extra charge
- ii) Collect product from the nearest booth giving less charge
- iii) Collect product directly from store/warehouse/ showroom
- iv) Other

6. Which of the following option would you prefer most?

- i) Delivery within 2 days without discount offer and free shipping
- ii) Delivery within 7 days plus free shipping
- iii) Delivery between 10-15 days, including 5-15% discount plus free shipping
- iv) Delivery between 45-60 days- 40-50% discount
- v) Delivery after 60 days- 60% discount or Cashback offer

7. Do you take offers like free shipping, discount offers, etc.?
 - i) Very often
 - ii) Often
 - iii) Occasionally
 - iv) Never
8. From the following options, which one do you think may have the utmost satisfaction level?
 - i) On-time delivery
 - ii) Quality of the product
 - iii) Free shipping
 - iv) Discount
 - v) Other
9. Advance payment is more suitable for an e-commerce transaction.
 - i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
10. Cash on delivery is more preferable in an e-commerce transaction.
 - i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
11. Using mobile banking platform is the safest way of the online transaction.
 - i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
12. Debit card, Credit card, Visa card, etc. are much secured than mobile banking transaction.
 - i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
13. Consumers are willing to spend more money on the delivery charge to buy a discounted product.
 - i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree

14. Consumers are willing to spend more on the delivery charge to get fast delivery time.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
15. Customers would pay less delivery charge rather than get immediate delivery.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
16. Delivery charge impacts negatively on the buying behavior of the consumers.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
17. Product distribution/delivery time can influence the purchasing behavior of the customers.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
18. Customers are willing to pay the discounted price of their product(s) in advance to get free shipping, even though the distribution time may take a longer period.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
19. Customers are less interested to buy a product when the distribution period is long.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral
 - iv) Agree
 - v) Strongly Agree
20. Customers are willing to accept a longer distribution period if they get a higher discount rate.
- i) Strongly Disagree
 - ii) Disagree
 - iii) Neutral

- iv) Agree
- v) Strongly Agree