

# The Importance of Information, System and Service Quality of E-commerce Website on Customer Satisfaction and Loyalty in Bangladesh

AHMED IHSAN\* Shengzhu Li NSHIMIYIMANA Alexis

School of Economics and Management, Chongqing University of Posts and Telecommunications, Nan'an District, Chongqing, P.R.China

## Abstract

Online business is gaining momentum day by day in the world and in Bangladesh in general, the number of e-commerce businesses is constantly increasing which is the result of how the technology and how it is being done is getting better. Guided by the purpose of this study “Examining the importance of information quality, system quality and service quality of electronic commerce websites to the customer satisfaction and loyalty in Bangladesh”, research has conducted based on knowing the relationship between website quality and customer satisfaction and loyalty. With the help of 450 participants, this study found that young people participated in online shopping more than other categories of residents in Dhaka, the Capital city of Bangladesh where the survey was conducted. Another finding of this study is that both under-graduates and post-graduates are highly involved. Most online shoppers have shown that they do it at least once a month, with 37.8 percent doing it. To find out the relationship between (information quality, system quality, and service quality) and customer satisfaction and loyalty, SPSS (16.0) was used and the study found that all factors of website quality have a strong and direct relationship to satisfaction and loyalty of customers and results also find that satisfaction is closely related to loyalty. Current research has advised online business owners to pay close attention to all factors of website quality as they are more important factors in satisfying customers, attracting new customers and expanding or promoting e-commerce in general.

**Keywords:** Information Quality, System Quality, Service Quality, Customer Satisfaction, Customer loyalty.

**DOI:** 10.7176/EJBM/12-14-11

**Publication date:** May 31<sup>st</sup> 2020

## 1. Introduction

The rapid growth of globalization and Information Technology and Communication has enabled the ways of doing business for the seller and purchase methods for consumers by adopting electronic commerce in place of traditional shops. Recently, Bangladesh sellers are getting the opportunity to expand their businesses outside their often-saturated home market and tap into newer markets. According to Kabango & Asa, (2015), the rapid growth of E-Commerce initiatives in the world reflects its compelling advantages, such as enhanced governmental performance, lower cost structure, greater flexibility, broader scale and scope of services, greater transparency, accountability, and faster transactions. Additionally, Technology effectiveness is essential in E-Commerce success.

In the traditional view, we identify consumer behavior as actions undertaken by people that involve the satisfaction of wants and needs focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption-related items that includes what they buy, why they buy, when they buy it, where they buy it, how often they buy it, how often they use it, how they assess it after the purchase and the impact of such evaluations on future purchases (Hajli). The Internet has changed this traditional way of buying, selling and paying by performing all processes online using the internet to order products or services and make transactions online without moving to the malls.

In addition to being interested in buying products online, a person's lifestyle, product type, location, and the device you use can also affect your motivation to use the internet when you want to buy certain items. Residents, who have access to high-speed internet, where access to infrastructure is needed to speed up the purchase process, are very important in deciding whether or not to shop online. Additionally, as frequent online shopping enhances frequent online buyers' trust in the respective website than for less frequent online buyers, they are expected to use online shopping more frequently and many companies have started using the internet to decrease marketing costs, thereby reducing the price of their products and services to stay ahead in highly competitive markets (Hajli). However, factors including National Policy Initiative, Security and Privacy, Technology Infrastructure, Accessibility and Awareness, Social Media, and Trust and Loyalty contribute to the Intention of Using e-commerce for buyers and sellers. Where there is no lack of such factors that influence electronic commerce, the satisfaction of consumers may be prompted by the website quality. Online shopping can create an intention to buy and recommended to the friends of customers satisfied with both the quality of the information displayed on the website, the quality of the system and also the quality of services offered to them.

Globally, e-commerce has shown rapid growth, however, is not without its roadblocks. There have been many

barriers and challenges in such areas as logistics, customs clearance, international payment, customer services, product frauds, global e-commerce talents training and education, culture and social adaptation. The Common complaints reported by consumers are product frauds and counterfeits, limitation of delivery methods, failed deliveries, contract termination, unauthorized charges, defective products, and inconvenient returns. Solving these problems is not easy because more than one country is involved and international cooperation is often required. Besides, global strategic factors, government-imposed factors, market factors, and transaction-specific factors jointly impact the development of global e-commerce, making it more difficult to solve those problems. Bangladesh's government has adopted different majors to solve this issue by putting efforts into constructing infrastructures and take place developing the internet and information communication technology into considerations. Bangladesh launched high-velocity internet connectivity through submarine superhighway in 2005 which was initiated in 1993 but still stays at the primary level (Mahmud). The researcher also reminds readers that another commitment of the political Government is to extend the coverage of broadband networks to 30 percent by 2015 and 40 percent by 2021.

In the research conducted by (Kasem and Shamima), researchers cited Jamil & Ahmed (2009) who found that in Bangladesh business to commerce (B2C) services are less practiced in Bangladesh, while limited use of business to business (B2B) and business to Government (B2G) exists in Bangladesh. Addition to this, (James) postulated that Like other developing and underdeveloped countries, Bangladesh is lagging in taping full benefits of growing e-commerce; mainly due to: a) absence of national-level public key infrastructure b) being suspicious of secure electronic transaction in local currency c) various innovative, consumer's personality-related, social and other technical challenges d) non-compliance to legal issues (Awiagah et al.). As companies use the internet intending to decrease marketing costs and reduce the price of or services so that the firm dominate others in competitive markets, consumers also have the intention to use the internet not only to buy some products but also comparing the price and features of what they want to buy to traditional shops or different websites of online shopping.

Demographical characteristics are included in the most problems reported by both buyers and sellers of online shopping in Bangladesh because of low infrastructure from the countryside places that complicate the shipping and also low internet availability. However, the payment using mobile is becoming a solution for this issue but the shipping issue is still observed. Before people need to use a computer for accessing online shops and bank cards that are registered for payment but nowadays it is possible to use mobile networks to perform those activities.

In the online shopping process, when potential consumers identify a need for some merchandise or service, they go to the Internet and search for need-related information (Mahmud). However, this process can also create an intention of buying other products or services that are associated with the buyers' needs based on how attractive the website is designed to display more products at the time of accessing online shops. Additionally, it is more profitable with online websites which have more friendly user-interface to keep consumers on their platforms as it can make them buy more products than what they expected before and will remain in the mind whenever a customer wants to buy another product for next time or introduce it to friends. Therefore, it crucial to have a website that has high quality of information, system, and service for the firm in the electronic commerce industry to stay in competition with others.

### **1.1. Research questions and Objectives**

The main objective of this research focuses on examining the importance of information quality, system quality and service quality of electronic commerce to customer satisfaction and customer loyalty in Bangladesh. Researchers have found that those variables can influence an individual's intention to use or buy products from e-commerce websites and sometimes introduce them to other users based on the received performance from each one. Previous researches have been conducted to study different matters of e-commerce from different countries including Bangladesh. However, a few numbers of studies have conducted to study specifically the importance of website quality which can influence the outcome of the expected performance of electronic commerce in Bangladesh. An understanding of this issue can help e-commerce players of the country to establish the measurement for a better quality of e-commerce platforms to enhance trust and loyalty which may result in the satisfaction of customers and loyalty of electronic commerce in Bangladesh. Thus, this paper has addressed three questions:

1. What is the importance of information quality, system quality and service quality of e-commerce websites in Bangladesh?
2. What is the relationship between each factor with the customer satisfaction and customer loyalty of electronic commerce platforms (websites)?
3. Which factors are more important in determining the satisfaction of consumers in the context of Bangladesh?

To come up with more significant solutions for those highlighted questions, this study has been carried out under the general objective of: "The importance of e-commerce websites quality throughout the information, system, and service in Bangladesh" And it will be achieved by addressing the following three specific objectives:

- (a) Identifying the role of information quality, system quality and service quality of e-commerce websites in the context of Bangladesh,
- (b) Analyzing the relationship of information quality, system quality and service quality with satisfaction and Loyalty of customers.
- (c) To provide constructive recommendations to be taken into consideration to make e-commerce more productive and used in the Bangladesh market.

Because of the availability of internet connectivity, shipping channels and other factors observed between the capital city, small cities, and villages of Bangladesh, the extend of the population has been limited to Dhaka city. Primary data of the study collected from the people who live in Dhaka and more specifically people who have ever used any type of e-commerce (online shopping and online service) to get more appropriate answers.

### **1.2. Significance of the study**

Electronic commerce is more significant for reducing costs and time that customers should spend on a single order. Therefore, it constructive to assess the factors that can make this more easily by evaluating the contribution of each factor in the development of e-commerce in Bangladesh as a developing country which is still dealing to make e-commerce the first option for buyers. In the previous study conducted by researcher (Kabango et al.) have found that effectiveness of technology is more important in e-commerce success and he added that factors including human, economic, and other organizational issues must be taken into considerations.

The present study is intending to assess the importance of three variables (information quality, system quality, and service quality) to customer satisfaction and loyalty in the context of Bangladesh. The results of this study will hopefully provide evidence to participants of electronic commerce who should put in action to make it more profitable for the government, sellers, and buyers of Bangladesh. Apart from the recommendations that will be offered to the contributors, this research is also expected to be an added value to the literature in the sector of electronic commerce studies.

## **2. LITERATURE REVIEW**

### **2.1. Overview of e-commerce**

As electronic commerce showed rapid growth globally, several pieces of research in this area have conducted in different countries by different researchers. However, the interest of their studies and findings are sometimes appeared to be different from each other based on the research purposes, sample size, cultures, etc. The internet is today's information societies has become an essential channel that is used for dissemination of information, products, and services. People prefer to use the internet as a transaction tool in different areas, such as learning, shopping, marketing, travel, trading, etc (Makame et al.).

To research in this field is challenging because of the many changes in information technology which commonly controls the e-commerce development. E-Commerce involves many issues such as trust, security, privacy, accessibility, familiarity, awareness, and quality of public services (Kabango et al.). The researcher added that for instance, the rapid growth of E-Commerce initiatives in the MENA (the Middle East and North Africa) region reflects its compelling advantages, such as enhanced governmental performance, lower cost structure, greater flexibility, broader scale and scope of services, greater transparency, accountability, and faster transactions. However, getting people to be continually engaged in e-commerce services is a challenge since only with a few mice clicks they will be moved away. To avoid this issue of insecurity in electronic commerce, the intervention of government is more essential and it is implemented in different ways in different countries. Companies deal with online shopping also are recommended to ensure the security of their customer's information from fraud and hacking.

Researchers, (Kabango et al.; Hajli; James) proclaimed the widely acknowledged by both government and industrial organizations that, from a consumer point of view, issues of information security are a major obstacle to the growth of E-Commerce. The Annual Report of the Bangladesh Bank for the financial year 2017-2018 shows the measurement of IT security that have implemented by the Government of the People's Republic of Bangladesh, (CIDB) argued that to build more secured ICT infrastructure as a part of remediation plan several security devices and technology have been deployed in Bangladesh Bank to secure the IT Systems. Besides, training on IT security awareness is a continuous process and which is going on in association with other departments to build IT security awareness among the Bangladesh Bank officials.

For the Technology Infrastructure, Bangladesh chooses Strengthening Financial Market Infrastructure as a component aims to improve financial IT infrastructure of the country further, especially focusing on: (a) development of Payment and Settlement System to ensure a large scale shift to electronic payments in Bangladesh, especially of the Government payments, (b) expanding and modernizing Credit Information Bureau (CIB) by including credit information of the Microfinance Sector and increasing reliability of credit reporting system, (c) strengthening the systems of BFIU by integrating with systems of other stakeholders thereby leading to safety and integrity of the financial systems and (d) strengthening the IT Governance and IT management of the Bangladesh

Bank to lay a robust and secured financial platform for the advanced financial market(CIDB).

The main objective of this study is to conduct an analysis of the importance of website quality attributes (including information quality, system quality, and service quality) on the satisfaction and loyalty of customers of e-commerce in Bangladesh. However, previous researchers have provided other key factors to be taken into account to make successful e-commerce. Those factors include security, privacy, trust, accessibility, and awareness.

## 2.2. Information Quality

The study conducted by (Kabango et al.), showed that the deliveries of quality information and services, user-orientation of information and services, efficiency and responsiveness of public organizations and contributions of public organizations to the environmental sustainability are the critical factors for evaluating the public value of e-government in Sri Lanka.

In a study by (Ajma) found that the quality of information that the system produces and delivers, is considered to be a key factor affecting information system success and have a significant impact on customer satisfaction and make them more likely to need to buy again in the future. The various researchers who have researched website quality have defined the quality of information in different ways but all they have in common is its importance in customer satisfaction when the website shows a difference compared to the other even though they all do the same thing. Information quality means a measure of value perceived by a customer of the output produced by a website (Hsu et al.). A study by (Ajma) showed that information quality can be found in many key factors, including the following: page loading, Visual appearance, system architecture, e-commerce site 24-hour availability and accessibility, user satisfaction with the system and useful/success in term of hits. Xu (2017) has defined information quality as the to which using a website can provide a good source of information and help a user to get updated, accurate and detailed information.

The study conducted by (Ajma) showed that information quality is among website quality factors significantly influence website selection and the most preferred website will generate the highest business performance and (Khalil) found that perceiving high information quality would assist online shoppers in differentiating between one seller and another, even if both sellers provide the same product. Also, (Khalil) argued that the information quality of website contents influence the risk perceived by the consumer as well as their intention and belief and a good display of the content in the interface of the website enhances the security perception of its customers, which positively influences their purchase intentions. The study conducted by (Hsu et al.) confirmed that that website quality contributes to customers' perceived playfulness and perceived flow, and in turn, would influence their satisfaction and purchase intention.

Previous researches have shown the importance of information quality to customer satisfaction and purchase intention. According to (Kabango et al.), information quality affects customer satisfaction directly. Perceived information quality was found to be a significant predictor of website quality (Xu). Several studies have conducted by researchers and found that information quality: has a significant positive influence on both initial and continue purchase intention on e-tailing websites (Khalil), which has a significant impact on perceived usefulness, which in turn encourages consumers to buy. Information quality also found to be a statistically significant impact on online impulse buying behavior (Hashmi) and played an important role in consumers' satisfaction with internet shopping (Bai et al.). The results of the study conducted by (Kasem and Shamima) indicated that information quality, internet security, and service reliability to be a significant factor influencing e-service quality and subsequently impact customer retention in e-retailing. Additionally, (Ajma) argued that information quality, including informativeness and security, were indicated to be significant antecedents of customer satisfaction. Findings, moreover showed that the information quality increases customer satisfaction and argument that if online companies need to increase the level of online customer satisfaction and customer behavior intention, they should make an update, accurate and put valuable information on the website frequently. Khalil (2017) added that a high rate of information quality will lead to greater success of the website and can contribute to overall purchase intentions.

## 2.3. System Quality

It is posited that e-commerce system quality, content quality, trust, and support services, affect the use and customer satisfaction that leads to e-commerce success (Ajma). The researcher added that Customer e-commerce satisfaction is proposed to be a dependent variable to e-commerce success and its relationship with e-commerce system quality and the good system quality depends on the appropriate security and privacy is provided to customers, suppliers and employees of the business.

According to Khalil (2017), system quality is the degree to which a customer interacts with the website in an easy, accessible, reliable, and adaptable way. Additionally, (Hsu et al.) argued that system quality means manifest in a website system's overall performance and can be measured by customer perceived degrees of user-friendliness in shopping at an online retailer. To measure system quality, system characteristics include the content of the database, aggression of details, human factors, response time and system accuracy should be considered (Khalil).



In the study conducted by (Hsu et al.) found that information and system quality of technical-oriented perspective are positively associated with perceived playfulness and perceived flow when participants experience high levels of system quality or information quality, the more likely to buy through a social network (Hajli).

The results from their previous studies (Khalil; Hashmi; Moustafa and Eissa) indicated system quality to be positively significant on continued purchase intention on e-tailing websites, to have a positive effect on the online impulse buying behavior and to positively impact e-satisfaction. A good system quality depends on the appropriate security and privacy is provided to customers, suppliers, and employees of a business (Ajma).

#### **2.4. Service Quality**

Nowadays it is crucial to ensure that a company is providing or offering products or services with high quality that meet the customer needs as it can be an enduring offering and predict the future of that institution and the growth of it in the market place (Alexis and Chen). Service quality has defined as the customer perception of the quality of information about the product/service that is provided by a website (Park & Kim, 2003) cited by (Kabango et al.). Researchers on service quality have found that it is antecedent of customer satisfaction (Alexis and Chen; Yuen and Thai; Bai et al.; Masukujjaman and Akter; Islam; Hossain and Hossain). In the electronic commerce area also, the website content quality has been argued to be an antecedent of online customer trust in the quality. Therefore, it is necessary to maximize the quality of service provided by the website to guarantee business success in the future and create a good image of the brand in the customer's satisfaction. In his research (Rahman), he pointed out that in today's business it is very important to provide the highest quality service as it can make you more competitive than your competitors in the market. He added that the ability to provide the best service will enhance the image of your business, attract new customers through entertaining customers and making them more interested in what you sell or offer.

Service quality signifies overall customer evaluations and judgments about the quality of online service delivery (Hsu et al.) and service quality refer to the overall perception of the quality of services received by a user on a website. Service quality is the performance of a website as compared to the expectations of the user (Khalil). In the context of the internet, e-service quality is defined as a consumer's overall evaluation and judgment on the quality of the services that are delivered through the internet (James). However, it is not enough for e-commerce companies to take care of website quality only because to impress the buyer it has to start with the website's differentiation compared to its competitors, the way the product reaches the buyer quickly and on time and the quality of the product matches the buyer's experience on the website and there should be a way to return the product when the customer is not happy with what he or she has bought.

Various researchers have highlighted the importance of service quality in customer satisfaction and loyalty where many have found that service quality affects customer satisfaction and may also have a direct or indirect effect on customer loyalty. Taking a few examples from the results of the study, it is clear that service quality has a significant impact on customer satisfaction while customer satisfaction also has an immediate impact on loyalty (Masukujjaman and Akter). The study also found that service quality influences purchase intention rather than customer satisfaction. The study conducted by (Hsu et al.) finds that the service quality is more important than information and system quality in influencing customer satisfaction and purchase intention and found that service quality is a more influential factor than system and information quality in the context of online shopping, implying that providing the excellent service quality is more important than emphasizing the offer of information and system quality in the context of online travel shopping. Islam, (2013) pointed out that service quality is a crucial element that impacts customer satisfaction level, in the banking industry. Pont & McQuilken, (2002) suggested that service quality is a critical issue in the service industry. But given the current situations, service quality should not be limited to those who do this or that but should be taken into account by businesses need to make a difference in their products or services compared to competitors in terms of retaining customers and attracting new customers.

#### **2.5. Customers Satisfaction**

Customer satisfaction is described as a measure on how product or services supplied by an organization meet customers' expectation and satisfaction is measured through the level of product quality, quality of service provided, the location where the product or service is purchased, and price of the product or service (Alexis and Chen). Customer satisfaction and customer loyalty are topics that have been explored at various times, in different countries and different businesses especially in the areas of banking, ATMs, linear shipping, retail banking and in general business. Researchers have tried to show the relationship between service quality and customer satisfaction and the relationship between customer satisfaction and customer loyalty (Haytko and Simmers; Yuen and Thai; Narteh; Zhou; Levesque and Mcdougall; Yilmaz et al.; Faghani; Moustafa and Eissa; Athanassopoulos et al.).

These researchers found that service quality has a strong relationship with customer satisfaction and may have a direct or indirect relationship to customer loyalty. According to Hsu et al., (2012), customer satisfaction relies directly on managing and monitoring individual service encounters, namely the periods of direct customer interaction with a service. Satisfaction is measured through the level of product quality, quality of service provided,

the location where the product or service is purchased, and the price of the product or service (Alexis and Chen). Additionally, the researcher declared that the concept of customer satisfaction has become an important concept in both operational and marketing firms as it can determine the future of a company.

Customer satisfaction is important in determining the quality of services, especially for continued purchase intention (Khalil). From their researches based on website quality and customer satisfaction, (Bai et al.; Hsu et al.) declared that customer satisfaction positively affects customer purchase intention. For both online and traditional businesses, the best indication of customer satisfaction and business service quality is repeated visits to a website or shop, a recommendation of the business to others, positive remarks or comments about the business and repeat purchases. Therefore, it is very important to take care of the services we provide in the business to maintain customers and attract new customers all of which can make the company's goals achieved as planned and bring benefits to all parties whether the buyer has got what he wants on time, in a good and fast manner and on the owner of a business as to help it expand and continue to thrive.

## **2.6. Customer loyalty**

Loyalty is the indication of customer satisfaction and it may be found when a customer receives exceed services compared to the expectations. Loyalty is an important part of an e-commerce system as it means customers will come back to a website again in the future. To maintain customer loyalty toward the e-commerce site, it provides many features for customer satisfaction such as rate/comment, recommends to a friend, returns products, asks a question and like/comment on their services on Facebook, Google+, WeChat, and other more social media used in a given country. Factors like customer trust in site services in terms of security policy, reputation building of a website and brand, customer satisfaction are more important for loyalty. Customer loyalty brings cost savings to companies in many ways, such as lower transaction costs, lower turnover costs, lower marketing costs, and lower failure costs, such as warranties, etc. Customer loyalty also allows customers to stay away from their competitors in the same market sectors. The eight e-business factors that appear to impact e-loyalty are Customization, Contact interactivity, Cultivation, Care, Community, Choice, Convenience, and Character (Srinivasan, Anderson, & Ponnavaolu, 2002).

## **2.7. Relationship Between Information Quality, System Quality and Service Quality and Satisfaction of Customers**

Research conducted by Hajli (2013), stated that businesses can concentrate on information, service and system quality to improve their websites, and also enhance perceived usefulness in their consumers. Researchers (Alexis and Chen), stated that service quality and customer satisfaction are very important concepts that must be understood by companies that want to grow while keeping their competitive edge. For website quality, customer satisfaction is not only come from a single factor but in different factors that play a positive role to make a website of e-commerce more attractive to the buyers. Both information quality, system quality and service quality of a website are considered more important constructs that affect customer satisfaction (Khalil; Xu; Hsu et al.). In their researches, (Bai et al.) asserted that website quality has a direct and positive impact on customer satisfaction which in turn impact directly and positively the purchase intention of customers and (Hsu et al.) argued that the relationship between website service quality and initial/continued purchase intention was statistically significant. E-service quality was found to positively and directly impact customer retention and word-of-mouth (Kasem and Shamima). And the results from a study conducted by (James) declared that e-customer satisfaction has a positive relationship with e-customer loyalty.

## **3. Research Methodology**

### **3.1. Research Variables**

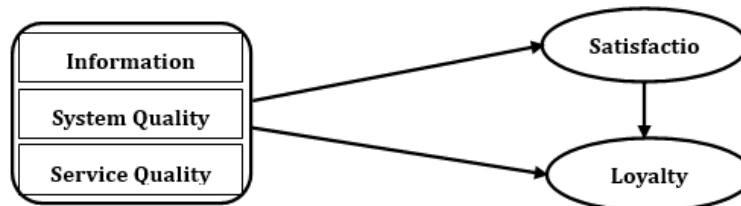
This study has adopted variables to analyze a given issue of electronic commerce website quality throughout three independents variables and two dependents variables that were used by previous studies. To have a deep understanding of respondents participated in this study, control variables also have been used to get background and information of all respondents. The following table displays all variables used in this research.

**Table 1: Variables**

Types of Variables	Variables	Source of scales
<b>Control</b>	Gender Age Education Profession Degree of use Internet experience Websites	
<b>Independents</b>	Information Quality System Quality Service Quality	(Hashmi; Khalil; Hsu et al.)
<b>Mediating</b>	Customer Satisfaction	(Alexis and Chen)
<b>Dependent</b>	Customer Loyalty	

### 3.2. Research model and hypothesis

This research has conducted under the WebQual model (4.0) which have founded on the theories related to information systems and the marketing industry. WebQual model has shown five stages underlying its evolution from WebQual 1.0 to WebQual™ as proposed and used in the MIS and marketing studies from different researchers and context. The model of this research has been designed based on the adopted variables which are obtained from the previous studies based on WebQual 4.0. The model displays five variables (independents and dependents variables). Independents variables used in this research are: Information Quality, System Quality and Service Quality of electronic commerce platforms (websites). And the dependents variables adopted by the researcher are including Customer Satisfaction and Customer Loyalty.



**Figure 1: Research Model**

With the above research model, seven hypotheses have been proposed, which indicates the proposed relationship to be tested between variables. Hypotheses are stated in the following way: All hypotheses have been proposed based on the result found in the previous studies which showed that Information Quality, System Quality and Service Quality of e-commerce website have a significant effect on both customer satisfaction and customer loyalty (Kabango et al.; Hsu et al.; Xu; Khalil; Hajli; Ajma; Hashmi; Bai et al.; Moustafa and Eissa; Abbaspour and Hazarinahashim; Yilmaz et al.; Bilgihan and Bujisic).

- H1:** Information Quality has a positive effect on customer satisfaction
- H2:** System Quality has a positive effect on customer satisfaction
- H3:** Service Quality has a positive effect on customer satisfaction
- H4:** Information Quality has a positive effect on the Loyalty of customer
- H5:** System Quality has a positive effect on the Loyalty of customer
- H6:** Service Quality has a positive effect on the Loyalty of customer
- H7:** Customer satisfaction has a positive effect on the Loyalty of customer

### 3.3. Sampling Techniques

Based on the issue of the availability of internet connectivity, shipping channels and other factors observed between the capital city, small cities, and villages of Bangladesh and to get useful information from the respondents, the researcher has decided to obtain primary data by surveying Dhaka city. Respondents also are only limited to the people who have ever used electronic commerce websites. Secondary data was obtained from articles, journals, researches, government reports, some foreign and local websites on online shopping and literature published nationally and internationally.

### 3.4. Designing questionnaire

To survey gathering primary data, a questionnaire was designed in English which is common can be easy to understand for people live in Dhaka. However, translation has been used if someone claims that he does not understand the questionnaire clearly. The questionnaire is composite by three sections, which include: introduction of the questionnaire is presented in section one; the second section is reserved for control variables while the last section is composite by statements of independent and dependent variables. The control variables (Demographic Background) used in this study are Gender, Age, Education, the profession of respondents, how often use e-commerce platforms and websites use to buy.

To measure variables of the study, this research developed a questionnaire using a 5-point Likert-scale from 1 = strongly disagree to 5 = strongly agree. The constructs used in the questionnaire were adapted from previous research to increase the validity of the study. Constructs to measure Information Quality, System Quality, Service Quality, Customer Satisfaction and Customer Loyalty on the online websites were adopted from literature and used in the present research to investigate its relationship in the context of Bangladesh. Five constructs used to measure information quality are presented as IQ1, IQ2, IQ3, IQ4, and IQ5. Four constructs of system quality are presented as S1, S2, S3, and S4. Three constructs have used to measure service quality and they are presented as SQ1, SQ2, and SQ3. Four constructs of Satisfaction are presented as SA1, SA2, SA3, and SA4. And to measure customer loyalty, L1, L2, and L3 constructs have been used.

### 3.5. Data collection

The questionnaire was distributed in Dhaka city, Bangladesh by the author's assistance to get answers from respondents. However, the author also developed an online questionnaire and invited participation through electronic channels including email, WeChat, and WhatsApp.

### 3.6. Data analysis Method

Firstly, Cronbach's alpha will be used to test the internal consistency of variables. Data analysis will take place using the Statistical Package for Social Science (SPSS) tool. The descriptive-analytical method will entail using frequencies, percentages, mean and standard deviation, while inferential analytical method will use correlation, regression, factor analysis, and hypothesis testing. Tables and figures will be used to present the results of the analysis.

## 4. Data Analysis

More than five hundred copies of questionnaire have been sent to different targeted people. However, only useable responses will be used for further analysis when we start to use SPSS for analysis. By analyzing the data collected from respondents, SPSS 16.0 was used. The analysis started with the presentation of demographic information of respondents and charts from excel have been used to demonstrate percentages and frequencies of all control variables used in this research. After checking all responses, only 450 useable responses have taken to be used for further analysis.

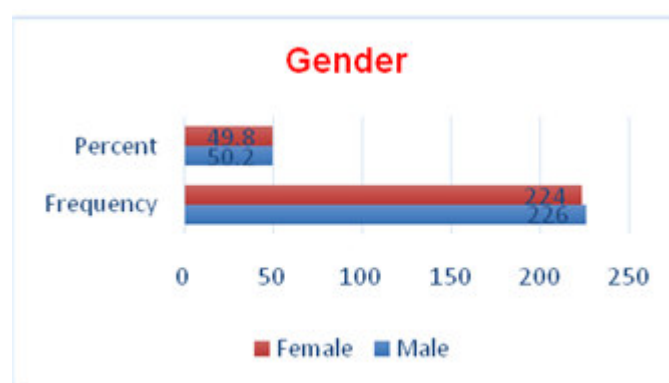


Figure 2: Gender

Percentages and frequencies of gender are displayed in Figure 2. Results clearly showed that Males dominate Females with only 0.2 %.



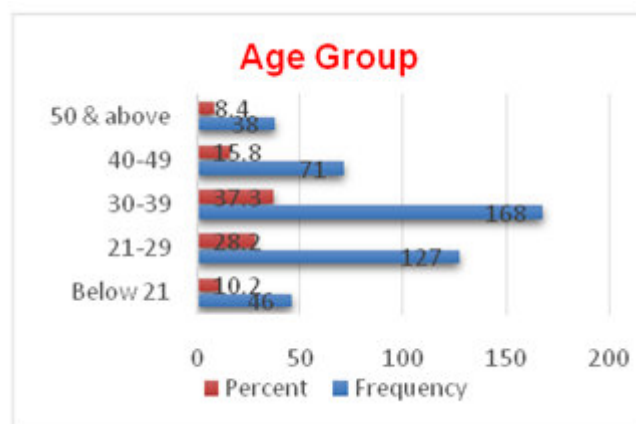


Figure 3: Age

For age groups, two major dominants groups are (30-39) Years old and (21-29) with respective percentages and frequencies of (37.3 %,  $n = 168$ ) and (28.2 %,  $n = 127$ ).

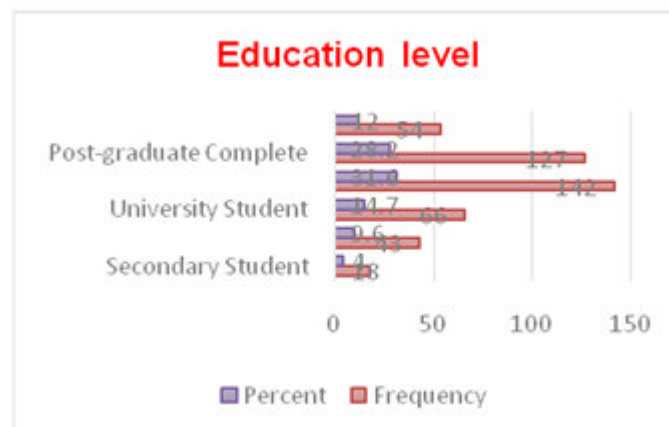


Figure 4: Education

By looking at the level of education of total respondents in the present study, *under-graduates* and *post-graduates* dominated other groups of education with (31.6 %,  $n = 142$ ) of under-graduates and (28.2 %,  $n = 127$ ). They are followed by *university student* groups that showed (14.7 %,  $n = 66$ ).

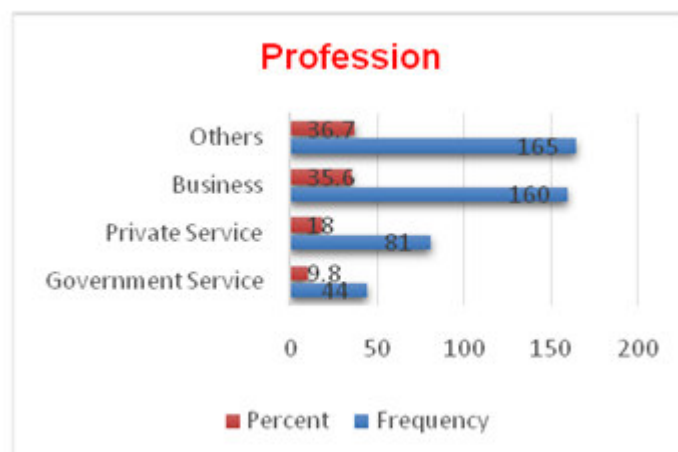
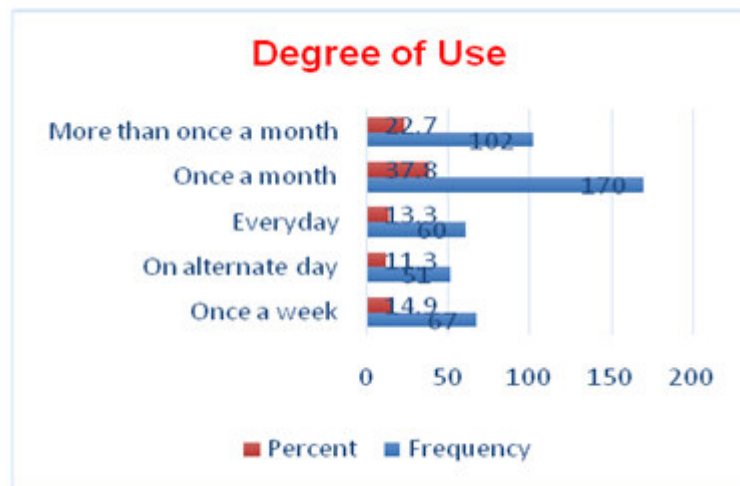


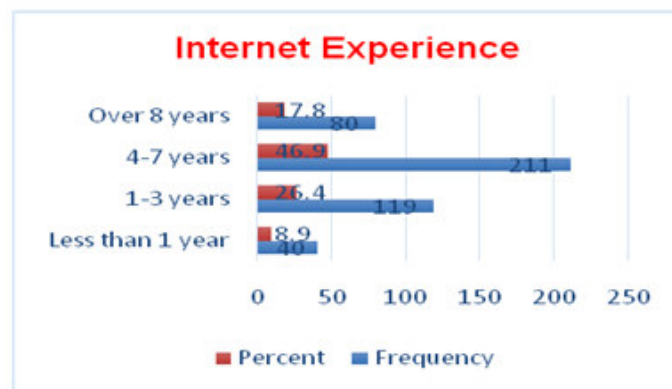
Figure 5: Profession

Findings on the Profession showed that respondents deal with *other occupations* apart from the mentioned in this study have (36.7 %,  $n = 165$ ) followed by *Business* group that declared (35.6 %,  $n = 160$ ).



**Figure 6:** Degree of Use or visiting the website

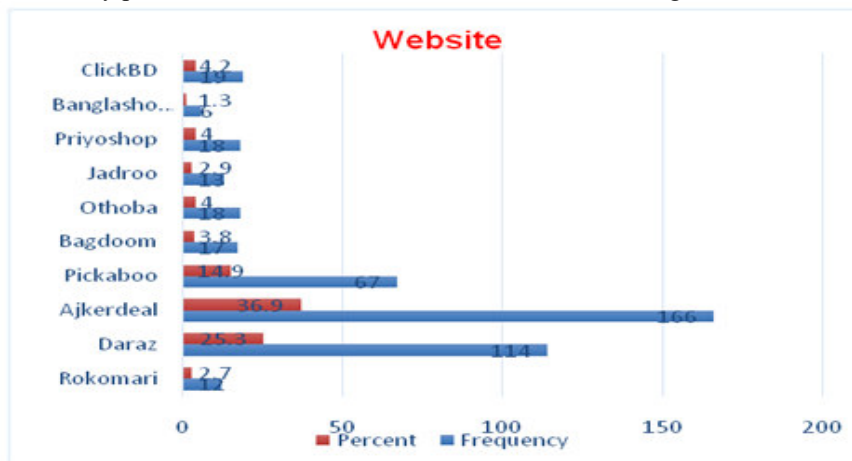
By considering how often respondents use or buy from the websites, the results found that (37.8 %,  $n = 170$ ) from 450 respondents used in this paper use/visit online platforms *once a month*. It is followed by (22.7 %,  $n = 102$ ) observed under customers who use/visit the websites *more than once a month* and (14.9 %,  $n = 67$ ) claimed to access the platforms *once a week*.



**Figure 7:** Internet Experience

Figure 7 displayed the results of customers' experience on the internet. It showed that (46.9 %,  $n = 211$ ) have experience of *4-7 years* (26.4 %,  $n = 119$ ) are observed under *1-3 years* and (17.8 %,  $n = 80$ ) are *over 8 years*.

Figure 8 displayed ten selected websites and the results showed that the first four online websites accessed by respondents used in this research are: Ajkerdeal with (36.9 %,  $n = 166$ ), Daraz with and (25.3 %,  $n = 114$ ), Pickaboo with and (14.9 %,  $n = 67$ ) and ClickBD with and (4.2 %,  $n = 19$ ). The above clearly showed the findings of how respondents visited or buy products from selected e-commerce website in Bangladesh.



**Figure 8:** Most visited websites

#### 4.1. Descriptive and Reliability Analysis

**Table 2:** Descriptive statistics

	Mean	Std. Deviation	Cronbach's Alpha	N of items	N
Information	4.2098	.48043	.714	5	450
System	4.0917	.57346	.730	4	450
Service	4.3356	.53276	.710	3	450
Satisfaction	4.3689	.56240	.809	4	450
Loyalty	4.1741	.52605	.715	3	450

The results displayed by *Table 2* of descriptive statistics showed that 450 respondents are satisfied with all variables used in the study as means of all variables are greater than 4. The results of Cronbach's Alpha for all five variables are greater than 0.7 which is the generally agreed lower limit for Cronbach's alpha (Hamaker).

The results of this study clearly show that all the variables used to meet the requirements for use in other analyzes as shown in *Table 2* based on the results of the Cronbach's Alpha coefficient. *Table 2* showed means, standard deviations, Cronbach's Alpha coefficient, the number of items per variable and the number of participants equals to 450. The results of this study clearly show that Cronbach's Alpha coefficients of (information, system, service, satisfaction, and loyalty) are equal to 0.714, 0.730, 0.710, 0.809 and 0.715, respectively. Therefore, all variables remain for further analysis.

#### 4.2. Exploratory Factor Analysis

Within EFA, the findings from *Table 3* indicates that the KMO measure of sampling is adequacy with 0.867 and it is significant at a p-value of 0.000, p-value < 0.05 (Alexis and Chen).

**Table 3:** KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.867
Bartlett's Test of Sphericity	Approx. Chi-Square
	2.978E3
	df
	171
	Sig.
	.000

Rotated component matrix displayed by *table 4* shows that Nineteen constructs used in this study have loaded in five components and they have accepted factors loading coefficients greater than 0.5.

SQ1, SQ2, and SQ3 are measurements of service quality and they are loaded in the first component.

The constructs of information quality IQ1, IQ2, IQ3, IQ4, and IQ5 are loaded in component 2.

Four Constructs of system quality S1, S2, S3, and S4 are loaded in component 2.

L1, L2, and L3 present customer loyalty, they are loaded in component 4.

Lastly, four constructs used to measure customer satisfaction (SA1, SA2, SA3 and SA4) are loaded in component 5.

**Table 4:** Rotated Component Matrix

	Component				
	1	2	3	4	5
IQ1		.861			
IQ2		.562			
IQ3		.668			
IQ4		.731			
IQ5		.667			
S1			.817		
S2			.833		
S3			.784		
S4			.585		
SQ1	.686				
SQ2	.717				
SQ3	.720				
SA1					.670
SA2					.650
SA3					.703
SA4					.580
L1				.720	
L2				.843	
L3				.763	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Based on the results of *Table 4*, the Rotated Component Matrix table indicates that all the variables are loaded in five components and all nineteen constructs appear to have loading factors above 0.4. The first three variables loaded highly on factor 1 and they are all related to “Service Quality”. This factor included items SQ1; SQ 2; and SQ3 with loading factor coefficients greater than 0.5 and equal to 0.686; 0.717 and 0.720 respectively.

The second factor has five variables which are all related to “Information Quality” and the variables loaded on this factor include IQ1, IQ2, IQ3, IQ4 and IQ5 with loading factor coefficients greater than 0.5 and respectively equal to 0.861; 0.562; 0.668; 0.731 and 0.667. The third factor has four variables which are all related to “System Quality” and the variables loaded on this factor include S1, S2, S3, and S4 with loading factor coefficients greater than 0.5 and respectively equal to 0.817; 0.833; 0.784; and 0.585.

Factor 4 represents the fourth group of variables and it is related to “Loyalty”. This component has three observed variables, including L1, L2, and L3 with loading coefficients greater than 0.5 respectively equal to 0.720, 0.843 and 0.763. Factor 5 represents the fifth group of variables and it is related to “Satisfaction”. This component has 4 observed variables, including SA1, SA2, SA3 and SA4 with loading coefficients greater than 0.5 respectively equal to 0.670, 0.650, 0.703 and 0.580.

#### 4.3. Correlation Analysis

*Table 5* displayed correlation among variables and it is clear that information quality, system quality, and service quality have a positive and significant correlation with both customer satisfaction and customer loyalty. The highest correlation coefficients are observed between service quality and customer satisfaction ( $r = 0.637$ ), information quality and customer satisfaction ( $r = 0.582$ ) and the lowest has calculated between system quality and customer loyalty ( $r = 0.398$ ). All variables are significantly two-tailed with significant values of 0.000.

**Table 5: Correlations**

		Information	System	Service	Satisfaction	Loyalty
Information	Pearson Correlation	1	.473**	.477**	.582**	.450**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	450	450	450	450	450
System	Pearson Correlation	.473**	1	.553**	.552**	.398**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	450	450	450	450	450
Service	Pearson Correlation	.477**	.553**	1	.637**	.450**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	450	450	450	450	450
Satisfaction	Pearson Correlation	.582**	.552**	.637**	1	.543**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	450	450	450	450	450
Loyalty	Pearson Correlation	.450**	.398**	.450**	.543**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	450	450	450	450	450

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

The results of Pearson correlation displayed by *Table 5* indicate that, there is positive and significant relationship between information quality and customer satisfaction ( $r = 0.582$ ,  $p < 0.01$ ), system quality and customer satisfaction ( $r = 0.552$ ,  $p < 0.01$ ), service quality and customer satisfaction ( $r = 0.637$ ,  $p < 0.01$ ) and between customer loyalty and customer satisfaction ( $r = 0.543$ ,  $p < 0.01$ ).

The results also showed that, there is positive and significant relationship between information quality and customer loyalty ( $r = 0.450$ ,  $p < 0.01$ ), system quality and customer loyalty ( $r = 0.398$ ,  $p < 0.01$ ), service quality and customer loyalty ( $r = 0.450$ ,  $p < 0.01$ ). Positive and significant correlations further observed among independent variables, where the results indicate that the Pearson correlation coefficients and significance level between system quality and information quality, service quality and information quality, service quality and system quality are respectively ( $r = 0.473$ ,  $p < 0.01$ ), ( $r = 0.477$ ,  $p < 0.01$ ) and ( $r = 0.553$ ,  $p < 0.01$ ).

#### 4.4. Regression Analysis

##### Model one: Analyzing the impact of Information Quality, System Quality and Service Quality on Customer Satisfaction.

**Table 6: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728 <sup>a</sup>	.630	.627	.48682

a. Predictors: (Constant), Service, Information, System

b. Dependent Variable: Satisfaction

The above table displays the result of the model summary which indicates that the constant variable service quality, information quality, and system quality are taken. The value of R indicates that the model is perfectly fitted and fitness of all research questions of independent variables and dependent variables are quite related to each other. From *Table 6*, it can be seen that the R Square value for the model showed that 63 % of the variance in the model can be predicted from the three independent variables (Service, Information, and System).



**Table 7: ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.281	3	25.094	167.709	.000 <sup>a</sup>
	Residual	66.733	446	.150		
	Total	142.014	449			

a. Predictors: (Constant), Service, Information, System

b. Dependent Variable: Satisfaction

Table 7 gives the ANOVA test on the general significance of the model. As p is less than 0.05, the model is significant. Thus, the Quality of Service, Information and System significantly predict the dependent variable customer satisfaction with (F = 167.094 and p = 0.000, p < 0.05).

In terms of each component from Table 8, Information component has a coefficient of 0.360 with significant value = 0.000 (p < 0.05). Thus, the Information component has the most significant effect on customer satisfaction. Similarly, the unstandardized coefficient of System quality and Service quality components are 0.192 and 0.403, respectively with Sig. = 0.000 (p < 0.05) for both two components. Therefore, System quality and Service quality components have a significant impact on customer satisfaction which directs to the decision of accepting three hypotheses (H1, H2, and H3 are accepted).

**Table 8: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.321	.183		1.751	.021		
Information	.360	.045	.308	7.981	.000	.709	1.410
System	.192	.040	.196	4.814	.000	.638	1.569
Service	.403	.043	.382	9.370	.000	.635	1.575

a. Dependent Variable: Satisfaction

**Model Two: Analyzing the impact of Information Quality, System Quality and Service Quality on Customer Loyalty.**

**Table 9: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.634 <sup>a</sup>	.585	.581	.74618

a. Predictors: (Constant), Service, Information, System

b. Dependent Variable: Loyalty

From Table 9, it can be seen that the R Square value for the model showed that 58.5 % of the variance in the model can be predicted from the three independent variables (Service, Information, and System).

**Table 10: ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.465	3	11.822	59.383	.000 <sup>a</sup>
	Residual	88.788	446	.199		
	Total	124.253	449			

a. Predictors: (Constant), Service, Information, System

b. Dependent Variable: Loyalty

Table 10 from above also gives the ANOVA test on the general significance of the model. The model is significant with a p-value of less than 0.05. Thus, the Quality of Service, Information and System significantly predict the dependent variable customer loyalty with (F = 59.383 and p = 0.000, p < 0.05).

The coefficient analysis displayed by Table 11 showed that Information component has a coefficient of 0.294, with significant value = 0.000 (p < 0.05), System component has a coefficient of 0.123, with significant value = 0.008 (p < 0.05) and Service component has a coefficient of 0.245, with significant value = 0.000 (p < 0.05), Thus, Information Quality, System Quality, and Service quality have a most significant effect on customer loyalty (H4, H5, and H6 are also accepted by the study).

**Table 11: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.374	.211		6.500	.000		
Information	.294	.052	.268	5.641	.000	.709	1.410
System	.123	.046	.134	2.674	.008	.638	1.569
Service	.245	.050	.248	4.935	.000	.635	1.575

a. Dependent Variable: Loyalty

**Model Three: Analyzing the Impact of Customer Satisfaction on customer loyalty.**

**Table 12: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.643 <sup>a</sup>	.595	.593	.74231

a. Predictors: (Constant), Satisfaction

b. Dependent Variable: Loyalty

Table 12 displays the result of the model summary which indicates that the constant variable customer satisfaction is taken. The value of R and R square indicates that the model is perfectly fitted and fitness of all research questions of independent variables and dependent variables are quite related to each other.

From Table 12, it can be seen that the R Square value for the model equals 0.595 which explains that 59.5 % of the variance in the model can be predicted from the satisfaction.

**Table 13: ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.609	1	36.609	187.127	.000 <sup>a</sup>
	Residual	87.645	448	.196		
	Total	124.253	449			

a. Predictors: (Constant), Satisfaction

b. Dependent Variable: Loyalty

Table 13 gives the ANOVA test on the general significance of the model. The model is significant with a p-value of less than 0.05. Thus, the satisfaction of customers significantly predicts the dependent variable customer loyalty with (F = 187.127 and p < 0.05).

Table 14 clearly showed that satisfaction component has a coefficient of 0.508 and significant value = 0.000 (p < 0.05). Thus, the Satisfaction component has the most significant effect on customer loyalty. Therefore, hypothesis seven (H7) is accepted by this study.

**Table 14: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.956	.163		11.963	.000		
Satisfaction	.508	.037	.543	13.679	.000	1.000	1.000

a. Dependent Variable: Loyalty

Table 15 summarizes the results from Table 8, Table 11 and Table 14. From Table 8, we observed that there is a significant effect of information quality, system quality and service quality on customer satisfaction. Thus, the results accepted the first three hypotheses (H1, H2, and H3). Table 11 indicates that information quality, system quality, and service quality have a positive and significant impact on customer loyalty. Therefore, the present study accepts hypothesis H4, H5, and H6. By analyzing the relationship between customer satisfaction and customer loyalty, Table 14 concludes that there is a strong and significant effect of customer satisfaction on customer loyalty.

**Table 15: Summary of Hypotheses Analysis**

	Hypothesis	Result
<b>H1</b>	Information Quality has a positive effect on customer satisfaction	<b>Accepted</b>
<b>H2</b>	System Quality has a positive effect on customer satisfaction	<b>Accepted</b>
<b>H3</b>	Service Quality has a positive effect on customer satisfaction	<b>Accepted</b>
<b>H4</b>	Information Quality has a positive effect on the Loyalty of customer	<b>Accepted</b>
<b>H5</b>	System Quality has a positive effect on the Loyalty of customer	<b>Accepted</b>
<b>H6</b>	Service Quality has a positive effect on the Loyalty of customer	<b>Accepted</b>
<b>H7</b>	Customer satisfaction has a positive effect on the Loyalty of customer	<b>Accepted</b>

## 5. Discussion And Conclusion

Figures from 2 to 8 were used to show the results of frequencies and the percentage of the demographic profile of the 450 participants participated in this study and 2-D Bar Charts were used to present the results.

According to the results of this study, there is no significant difference between males and females because their percentage shows that *males* have a 50.2 percent ( $n = 226$ ) while *females* have a 49.8 percent ( $n = 224$ ).

Looking at the age groups of the participants in this study, it is clear that most participants were between the ages of 30 and 39 with 37.3 percent and  $n = 168$  are followed by those between the ages of 21 and 29 with 28.2 percent and  $n = 127$ . Other findings from this study show the percentages and frequencies of other groups are as follow: the group of 40-49 have 15.8 percent and  $n = 71$ , group of participants *below 21* has 10.2 percent and  $n = 46$  and lastly, the group of participants with ages *50 and above* has 8.4 percent and  $n = 38$ .

Based on the education level of the participants in this study, using the percentages and frequencies of the findings it seems that the categories are ranked in the following order from *under-graduate complete* that show the highest percentage of 31.6 % with  $n = 142$ . The second category is *post-graduate complete* with 28.2 percent and  $n = 127$ .

Other groups are *university students* with 14.7 percent and  $n = 66$ , *Other professional degrees* with 12 percent and  $n = 54$ , *secondary complete* with 9.6 percent and  $n = 43$  and the *secondary student-level* showed to be the least category with 4 percent and  $n = 18$ . Another thing we wanted to know about the participants was to know their profession in real life. It has been found that people who do not have a specific profession to work with (under the category of *Others*) are the ones who have the highest percentage of online shopping or visiting websites (36.7 percent and  $n = 165$ ). The next category is for *business* people, with 35.6 percent and frequency of  $n = 160$  while *private service* employees have 18 percent and  $n = 81$  and *government service* employees participated in the present study showed 9.8 percent and  $n = 44$  of total participants equal 450.

Because the purpose of this research is to investigate how customers are satisfied with the online business, it is very important to know when or how often they do it either week or month. In findings, the results of the participants in this study we used five different categories and each of them responded by participants according to the category they found. From the category that showed the highest percentage to the lowest percentage, we found all the categories in the following order: Participants who shop or use online platforms *once a month* claimed 37.8 % with a frequency of  $n = 170$ , *More than once a month* have 22.7 % with a frequency of  $n = 102$ , *Once a week* have 14.9 % with a frequency of  $n = 67$ , *every day* has 13.3 % with a frequency of  $n = 60$ , and the last category is the participants who use the online platform *On an alternate day* have 11.3 % with a frequency of  $n = 51$ .

All 450 participants in the study indicated their level of experience in using or purchasing products online. It was found that people with Internet experience between the ages of four and seven had the highest percentage of other categories where they showed 46.9 percent of the respondents 211 out of 450 respondents. The second category in achieving a large percentage was the respondents who indicated that they had experience in using the internet for between one and three years, with a percentage of 26.4 and  $n = 102$ . The other category has 14.9 percent and 67 study participants. The last category consists of respondents who have experience in using the internet for less than a year. This category has an average score of 8.9 and 40 participants.

The last variables we used as control variables were websites choice. We wanted to know the most visited websites in Bangladesh for people who buy or watch online products using technology. As it is difficult to use all the websites that are marketed online in Bangladesh, we have selected only ten websites. which we have chosen based on the previous researches conducted by various researchers who have proven to be the most visited in Bangladesh. The results of this current study are the responses of 450 respondents participated in the current study. This means that websites are more likely to be visited in this search based on the results of respondents only. The results of this study show that the *Ajkerdeal* website is the first with a large percentage. It has 36.9 percent of the total number of respondents equal to 166. The percentage and number of participants on the remaining nine websites are as follows: *Daraz* has 25.3 % and  $n = 114$ , *Pickaboo* has 14.9 % and  $n = 67$ , *ClickBD* has 4.2 % and  $n = 19$ , *Othoba* and *Priyoshop* each has 4 % and  $n = 18$ , *Bagdoom* has 3.8 % and  $n = 17$ , *Jadroo* has 2.9 % and  $n = 13$ , *Rokomari* has 2.7 % and  $n = 12$ , and the last website among ten used in this research is *Banglashoppers*

which has 1.3 % and six participants ( $n = 6$ ).

After finding that the variables used in the present study passed the reliability and validity test, the study continued to examine the hypotheses used to determine the relationship between all the variables we used. In assessing the reliability of the variables, using Cronbach's Alpha where we found that all variables with Cronbach's Alpha coefficients above seven are considered to be the basis for determining that a variable can be used in other analyzes. In assessing validity, exploratory factor analysis was used using KMO analysis and component matrix. We, therefore, found that the sample we used in this study was adequate based on KMO results which showed that it was significant because it had a value greater than 0.5. All the variables we used showed to have loading factors above 0.5.

With the main objective of this research focuses on examining the importance of information quality, system quality and service quality of electronic commerce to the customer satisfaction and customer loyalty in Bangladesh, Seven of the hypotheses were used to assess the relationship between independent variables and customer satisfaction and to assess the relationship between customer satisfaction and loyalty (to keep using or ending other online websites used by a particular customer). The results of the regression analysis show that all hypotheses were accepted with the present study. Model one was used to assess the relationship between three independent variables (Information Quality, System Quality, and Service Quality) and consumer satisfaction, as shown in *Table 8*, all three hypotheses were accepted with p-values equal to 0.000 ( $p$ -values  $< 0.05$ ). Similarly, Model two was used to assess the relationship between three independent variables (Information Quality, System Quality and Service Quality) and customer loyalty, as shown in *Table 11*, all three hypotheses were accepted with p-values having values below 0.05. The latter model was the third used to determine if there was a significant relationship between customer satisfaction and customer loyalty. The result of this study clearly shows that there is a strong link between consumer satisfaction and continued use or recommend online business websites to other customers. this is shown in *Table 14* where it is clear that the relationship is significant with a p-value of 0.000 ( $p < 0.05$ ).

**By the conclusion**, the study found that at least 65.5 percent of the 450 participants between the ages of 21 and 39 were the most likely to be involved in the purchase and use of online websites. It is important to pay more attention to this category of young people but also to increase the awareness of adults so that they too can be encouraged to use online websites to buy what they need in their daily lives. It was also found that at least undergraduate and Post-graduate students also accounted for more than 50 percent of the total participants in the study (They occupied 59.8 percent). Thus, the education of customers has an impact on willing to buy and visit commercial sites online, which would make it much easier for business owners to increase awareness from school campuses where they find students in all those categories.

What's more, it provides the opportunity to reach out to other customers in different categories to increase the number of e-commerce website users who can contribute to the development of e-commerce in Bangladesh. Campaigning is also important to keep in touch with regular online buyers as it has been found that most 37.8 percent do so once a month, and they need to be encouraged to do so as often as they want to shop and shop online instead of going to the stores or malls.

This study has shown that information quality, system quality and service quality are very important for customer satisfaction as evidenced by the results of the current study. What's more, all of these variables are closely related to customer satisfaction and customer loyalty and all of which are important to take care of when there is a need to increase customer satisfaction using or purchasing products online. The development of e-commerce in Bangladesh is very important and requires the participation of many people or institutions whether public or private and not forgetting consumers. First and foremost, we urge the government to play a key role in maintaining infrastructure and supporting small businesses operating on the Internet.

The role of the private sector in the development of e-commerce in Bangladesh is to continue to mobilize and encourage all consumers who need to do so online and make it easier for them to access it within the stipulated time as it appears on the websites. Online business owners must also play an important role in the development of e-commerce in Bangladesh as they are the ones who have to keep their promises to consumers. Best of all is to have websites that have interfaces that make it easy for customers to get everything they need quickly and clearly. The other is to make sure that consumers get what they buy on time, and that it is as if they have been shown it and that there is a way to get a refund or change of the product when there is dissatisfaction with what the customer has bought.

To strengthen and accelerate the development of e-commerce, this study advises the government on the most important issues that need to be addressed. The first is to increase efforts to spread the faster Internet everywhere and to further the infrastructure needed for the development of e-commerce and to facilitate online shoppers. The second is to help and facilitate small and large businesses that want to start an online business and establish general guidelines for the development of e-commerce and online shopping.

Another is the awareness campaign on the use of the internet in business services and government services. Companies doing this business are not enough in this e-commerce development struggle, which is why the role of the government is so important because it is the voice of the people in general.

Suggestions are also given to companies that do online business as they also play a significant role in this business which can be said to be new in the country compared to other developed countries in online businesses like China, the USA and so on. The companies that do this online business should pay close attention to the quality of services/products that customers get on the websites, the time it takes for someone to get what they buy, to tell the truth about the quality of the product, to set up a way to make it easier for customers to receive what they buy nearby, and to have a proper and easier way customer to return the items when the product is not the right or right fit.

## 6. Implications And Limitations

The study reaffirmed the importance of website quality on customer satisfaction and reaffirmed its potential impact when a customer is satisfied with the service they receive because it shows that it allows customers to buy, visit the website and share it with others who may be new customers. So this remembrance study will be useful for all those who have online businesses as it will show them how customers respond to what they see on their websites and help them to take steps to increase the diversity of their websites, increase the quality of services provided and continue to make service delivery as desired by customers. In addition to the fact that this research will help online business owners, it will also help customers to get a glimpse of this lesser-known online business in the country and thus help them learn more about the benefits of doing so.

What's more, this research will help others who want to research in the field of e-commerce. This recurring study fills in the blanks to help other researchers. In a nutshell, this research is useful for other researchers who will use it as a reference, customers will see the current level of e-commerce in Bangladesh and the government as this study can show the government the current level of e-commerce in the country and thus take appropriate steps to continue to support the development of e-commerce everywhere in the country.

Like many other studies conducted in Bangladesh, as well as in various other countries. This study also has limitations especially due to insufficient time; a financial capacity which does not allow us to reach the country and the methodology used all clearly shows that this study has its limitations due to the above-mentioned challenges. Due to the limited resources of the researcher, the study was conducted in the capital city of Bangladesh (Dhaka) alone where the number of participants in the study was 450 which is a small number compared to the population of the city. Also, this study was conducted to study the relationship between website quality and customer satisfaction and loyalty but focused on three factors (information quality, system quality, and service quality). The researcher advises anyone who will do research on this topic to pay close attention to the various sampling techniques that will be used and it would be better if the number of researchers used increases in terms of getting a general look and customer feedback.

## References

- Abbaspour, Bagher, and Noor Hazarinahashim. "The Influence of Website Quality Dimensions on Customer Satisfaction in Travel Website." *International Journal of Science Commerce and Humanities*, vol. 3, no. 5, 2015, pp. 6–17, [http://www.ijSCH.com/journaluk/images/frontImages/THE\\_INFLUENCE\\_OF\\_WEBSITE\\_QUALITY\\_DIMENSIONS\\_ON\\_CUSTOMER\\_SATISFACTION\\_IN\\_TRAVEL\\_WEBSITE.pdf](http://www.ijSCH.com/journaluk/images/frontImages/THE_INFLUENCE_OF_WEBSITE_QUALITY_DIMENSIONS_ON_CUSTOMER_SATISFACTION_IN_TRAVEL_WEBSITE.pdf).
- Ajma, Fatima. *Factors Influencing Electronic Commerce Adoption in Malaysian Small and Medium Sized Enterprises (Smes)* Fatima Ajmal Faculty of Computer Science and Information Technology. 2017.
- Alexis, Nshimiyimana, and Wenpei Chen. "To Cite This Article: Nshimiyimana Alexis, Wenpei Chen. An Empirical Study Analyzing the ATM Service Quality and Customer Satisfaction Relationship in Rwanda." *International Journal of Business and Economics Research*, vol. 8, no. 6, 2019, pp. 439–51, doi:10.11648/j.ijber.20190806.24.
- Athanassopoulos, Antreas, et al. "Behavioural Responses to Customer Satisfaction: An Empirical Study." *European Journal of Marketing*, vol. 35, no. 5/6, 2001, pp. 687–707, doi:10.1108/03090560110388169.
- Awiagah, Raphael, et al. "Factors Affecting E-Commerce Adoption among SMEs in Ghana." *Information Development*, vol. 32, no. 4, 2016, pp. 815–36, doi:10.1177/0266666915571427.
- Bai, Billy, et al. "The Impact of Website Quality on Customer Satisfaction and Purchase Intentions: Evidence from Chinese Online Visitors." *International Journal of Hospitality Management*, vol. 27, no. 3, 2008, pp. 391–402, doi:10.1016/j.ijhm.2007.10.008.
- Bilgihan, Anil, and Milos Bujisic. "The Effect of Website Features in Online Relationship Marketing: A Case of Online Hotel Booking." *Electronic Commerce Research and Applications*, vol. 14, no. 4, Elsevier B.V., 2015, pp. 222–32, doi:10.1016/j.elerap.2014.09.001.
- CIDB. "Annual Report 2017-2018." *Airport Carbon Accreditation*, vol. 91, 2018, pp. 399–404.
- Faghani, F. *Crvi h o e f c r v i h o e F*. Vol. 2, no. 4, 2012, pp. 351–61.
- Hajli, M. Nick. "Compressed-PDF." *International Journal of Market Research*, vol. 53, no. 6, 2013, pp. 387–404, doi:10.2501/U M R-2014-025.



- Hamaker, H. C. "On Multiple Regression Analysis." *Statistica Neerlandica*, vol. 16, no. 1, 1962, doi:10.1111/j.1467-9574.1962.tb01184.x.
- Hashmi, Hamna. *Factors Affecting Online Impulsive Buying Behavior : A Stimulus Organism Response Model Approach*. Vol. 14, no. 1, 2019, pp. 19–42.
- Haytko, Diana L., and Christina S. Simmers. "What's Your Preference?: An Exploratory Examination of the Effect of Human vs ATM vs Online Interactions on Overall Consumer Satisfaction with Banking Services." *Management Research News*, vol. 32, no. 4, 2009, pp. 337–53, doi:10.1108/01409170910944290.
- Hossain, Nahin, and Yahin Hossain. "Mobile Banking and Customer Satisfaction : The Case of Dhaka City Hossain & Hossain." *World Review of Business Research*, vol. 5, no. 3, 2015, pp. 108–20.
- Hsu, Chia Lin, et al. "The Impact of Website Quality on Customer Satisfaction and Purchase Intention: Perceived Playfulness and Perceived Flow as Mediators." *Information Systems and E-Business Management*, vol. 10, no. 4, 2012, pp. 549–70, doi:10.1007/s10257-011-0181-5.
- Islam, Md. Ariful. "Customer Satisfaction and Customer Loyalty through Service Quality Evaluated under SERVQUAL Model- A Study on Banking Industries of Bangladesh." *Science Journal of Business and Management*, vol. 1, no. 4, 2013, p. 88, doi:10.11648/j.sjbm.20130104.15.
- James, Paul T. J. "Consumers' Attitude towards Online Shopping : Factors Influencing Employees of Crazy Domains to Shop Online." *Journal of Management and Marketing Research*, 2012, pp. 1–11.
- Kabango, Christian Mbayo, et al. *Factors Influencing e - Commerce Development : Implications for the Developing Countries*. *UNDERSTANDING THE CONCEPT OF E - COMMERCE*. Vol. 1, no. 1, 2015, pp. 60–69, doi:10.18775/ijied.1849-7551-7020.2015.11.2006.
- Kasem, Nafisa, and Nasrin Shamima. "An Assessment of the Factors Affecting the Consumer Satisfaction on Online Purchase in Dhaka City, Bangladesh." *European Journal of Business and Management(Online)*, vol. 6, no. 32, 2014, pp. 2222–839.
- Khalil, Hibah. *The Role of the Quality of a Website in Consumer Perception*. 2017, pp. 1–82.
- Levesque, Terrence, and Gordon H. g. McDougall. "Determinants of Customer Satisfaction in Retail Banking." *International Journal of Bank Marketing*, vol. 14, no. 7, 1996, pp. 12–20, doi:10.1108/02652329610151340.
- Mahmud, Qazi Monuddin. *Factors Influencing Customers' Attitude Towards Online Shopping : Evidence from Dhaka City*. Vol. XXXV, no. 3, 2014.
- Makame, W. H., et al. "Factors Influencing Electronic Commerce Adoption in Developing Countries: The Case of Tanzania." *South African Journal of Business Management*, vol. 45, no. 2, 2014, pp. 83–96, doi:10.4102/sajbm.v45i2.126.
- Masukujjaman, Md, and Afia Akter. "Quality of Categorized Service and Customer Satisfaction in Banking Industry: An Empirical Study on Private Commercial Banks in Bangladesh." *Journal of Business and Technology (Dhaka)*, vol. 5, no. 2, 1970, pp. 19–37, doi:10.3329/jbt.v5i2.9933.
- Moustafa, Arwa, and Kamel Eissa. *Impact of E-Service Quality Dimensions on Word-of-Mouth and Customer Retention and the Mediating Role of Customer Satisfaction : A Study on E- Commerce in Malaysia*. Vol. 7, no. 1, 2019.
- Narteh, Bedman. "Service Quality and Customer Satisfaction in Ghanaian Retail Banks: The Moderating Role of Price." *International Journal of Bank Marketing*, vol. 36, no. 1, 2018, pp. 68–88, doi:10.1108/IJBM-08-2016-0118.
- Pont, Marcin, and Lisa McQuilken. "Testing the Fit of the BANKSERV Model to BANKPERF Data Marcin Pont and Lisa McQuilken, Deakin University." *ANZMAC 2002 Conference Proceedings*, 2002, pp. 861–67.
- Rahman, Hasebur. "Customer Satisfaction and Loyalty: A Case Study from the Banking Sector." *Central European Business Review*, vol. 2, no. 4, 2013, pp. 15–23, doi:10.18267/j.cebr.60.
- Xu, Xiaowei. *The Effects of Website Quality on Customer Satisfaction, Use Intention, and Purchase Intention: A Comparison among Three Types of Booking Channels*. 2017, p. 163, <http://lib.dr.iastate.edu/etd%0Ahttp://lib.dr.iastate.edu/etd>.
- Yilmaz, Veysel, et al. "Investigating the Relationship between Service Quality Dimensions, Customer Satisfaction and Loyalty in Turkish Banking Sector: An Application of Structural Equation Model." *International Journal of Bank Marketing*, vol. 36, no. 3, 2018, pp. 423–40, doi:10.1108/IJBM-02-2017-0037.
- Yuen, Kum Fai, and Vinh V. Thai. "Service Quality and Customer Satisfaction in Liner Shipping." *International Journal of Quality and Service Sciences*, vol. 7, no. 2–3, 2015, pp. 170–83, doi:10.1108/IJQSS-02-2015-0024.
- Zhou, Lianxi. "A Dimension-Specific Analysis of Performance-Only Measurement of Service Quality and Satisfaction in China's Retail Banking." *Journal of Services Marketing*, vol. 18, no. 7, 2004, pp. 534–46, doi:10.1108/08876040410561866.