

**Quantitative & Qualitative Analysis of User Experience Analytics for E-commerce Websites of Bangladesh.**

**BY**

**Hasiba Sultana**

**ID: 191-25-751**

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Master of Science in Computer Science and Engineering

Supervised By

**Shah Md. Tanvir Siddique**  
Assistant Professor  
Department of CSE  
Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY DHAKA,  
BANGLADESH**

**JANUARY 2022**

## **APPROVAL**

This Project/internship titled “**Quantitative & Qualitative Analysis of User Experience Analytics for E-commerce Websites of Bangladesh.**”, submitted by Hasiba Sultana, ID No: 191-25-751 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 22 January 2022 .

## **BOARD OF EXAMINERS**



**Chairman**

---

**Dr. Touhid Bhuiyan**

**Professor and Head**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner 1**

---

**Md. Zahid Hasan**

**Associate Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner 1**

---

**Nazmun Nessa Moon**

**Associate Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**External Examiner 1**

---

**Dr. Mohammad Shorif Uddin**

**Professor**

Department of Computer Science and Engineering

Jahangirnagar University

**BOARD OF EXAMINERS**



**Chairman**

---

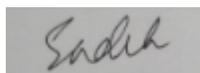
**Dr. Touhid Bhuiyan**

**Professor and Head**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner**

---

**Md. Sadekur Rahman (SR)**

**Assistant Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner 1**

---

**Moushumi Zaman Bonny**

**Assistant Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**External Examiner 1**

---

**Dr. Shamim H Ripon**

**Professor**

Department of Computer Science and Engineering

East West University

**BOARD OF EXAMINERS**



**Chairmani**

---

**Dr. Touhid Bhuiyan**

**Professor and Head**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner 1**

---

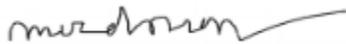
**Abdus Sattar**

**Assistant Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**Internal Examiner 1**

---

**Md. Riazur Rahman (RR)**

**Assistant Professor**

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



**External Examiner 1**

**Dr. Mohammad Shorif Uddin**

**Professor**

Department of Computer Science and Engineering

Jahangirnagar University

## DECLARATION

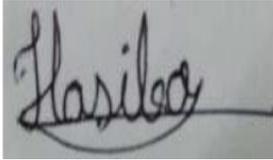
I hereby declare that, this project has been done by us under the supervision of **Shah Md. Tanvir Siddique, Assistant Professor, Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

**Supervised by:**

---

**Shah Md. Tanvir Siddique**  
Assistant Professor  
Department of CSE  
Daffodil International University

**Submitted by:**

A handwritten signature in black ink on a light background. The signature is cursive and reads "Hasiba".

**Hasiba Sultana ID: 191-25-751**

Department of CSE

Daffodil International University

## **ACKNOWLEDGEMENT**

First, I express my heartiest thanks and gratefulness to Almighty God for His divine blessing makes us possible to complete the final year thesis successfully.

I am grateful and wish our profound our indebtedness to **Shah Md. Tanvir Siddique, Assistant Professor**, Department of CSE Daffodil International University, Dhaka. My supervisor has deep Knowledge & a keen interest of in the field of “User Experience E-commerce websites in Bangladesh” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts, and correcting them at all stages have made it possible to complete this thesis.

I would like to express my heartiest gratitude to the Head, Department of CSE, for his kind help to finish our project and to other faculty members and the staff of the CSE department of Daffodil International University.

I would like to thank my entire coursemate in Daffodil International University, who took part in this discussion while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

## ABSTRACT

Electronic commerce, sometimes known as e-commerce, refers to any business or commercial transaction that involves the transmission of data via the internet. It is one of the most essential aspects of the internet to emerge at the moment. E-commerce has exploded in popularity around the world. The study's goal is to conduct a quantitative and qualitative examination of e-commerce website user experience in Bangladesh. We also look at e-commerce from a technological standpoint, such as how it is built and what software and hardware is required to run it. To achieve our objectives, we used a variety of methods, including a study, a group discussion to gather suggestions for an e-commerce site visit as clients, and an e-commerce site introducing international change to understand the e-commerce engine. The impact of e-commerce websites on society and business is substantial. Bangladesh will rely on e-commerce website company in the future.

## TABLE OF CONTENTS

<b>CONTENTS</b>	<b>PAGE</b>
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
<b>CHAPTER</b>	
<b>CHAPTER 1: INTRODUCTION</b>	<b>1-4</b>
1.1 Introduction	1
1.2 Motivation	3
1.3 Rational of the study	3
1.4 Research Question	4
1.5 Expected output	4
1.6 Report Layout	4
<b>CHAPTER 2: BACKGROUND STUDY</b>	<b>5-10</b>
2.1 Introduction	5
2.2 E-commerce Bangladesh	6

2.3 Online Customer Journey	6
2.4 E-commerce Journey Analysis	7
2.5 Customer Experience on E-commerce Website	8-10
<b>CHAPTER 3: RESEARCH METHODOLOGY</b>	<b>11-19</b>
3.1 Introduction	11
3.2 Research Methods	11
3.3 Research Structure	11-13
3.4 Situation Analysis	14
3.5 UI Design	15-17
3.6 UX design	18-19
<b>CHAPTER 4: EXPERIMENTAL RESULT &amp; DISCUSSION</b>	<b>20-24</b>
4.1 Introduction	20
4.2 Experimental results	21
4.3 Descriptive analysis	23-24
4.4 Summary	24

**CHAPTER 5: SUMMARY, CONCLUSION, RECOMMENDATION, AND IMPLICATION FOR FUTURE RESEARCH** **25-28**

5.1 Summary of the study	25
5.2 Conclusion	26
5.3 Recommendation	26
5.4 Implication for further study	27

**REFERENCES LIST OF FIGURES PAGE-NO**

**FIGURE**

Figure 1.1: Generic E-commerce model	2
Figure 1.2: Most popular user website in Bangladesh	3
Figure 2.2 Product categories for e-commerce sector in Bangladesh	6
Figure 2.2: Showing a measurement plan	13
Figure: 3.5.1: User Interface (UI) design	16
Figure 3.5.2: Layout user safety easily and enjoyable	17
Figure 3.6.1: The why, what and how of UX design	18
Figure 3.6.2 User centered design	20
Figure 4.3 E-commerce using chart	24



# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

E-commerce has become one of the most well-known business models as information technology, web technology and communication have all grown in popularity around the world. Many businesses are beginning to include the development of e-commerce website in their strategic planning. While online technology has transformed all business into information-based activities, many firms have moved away from old methods and toward electronic methods in order to remain competitive and sustainable.

In general e-commerce is a business activity that involves selling and buying things, goods, and services over the internet. To put it another way, e-commerce refers to the exchange of products and services over the internet, sometimes known as online shopping. E-commerce is one of the reasons that has changed the way people pay for things. According to E-commerce, it helps business to learn more about their clients, inform them more about their offerings, and develop strong customer-business relationships.

Companies have created a significant number e-commerce websites in order to improve their brand's reputation and deliver excellent customer service.

Any e-commerce development's usability and user experience are critical to its success. A software system's usability relates to its ability to deploy software while preserving system productivity, dependability, satisfaction, and excellent e-commerce quality. Humans are actively encouraged, and a viable market place is required to keep up with the rapid growth of e-commerce.

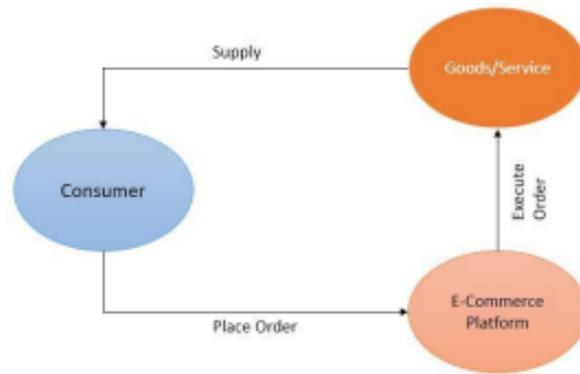


Figure 1.1: E-commerce model.

## 1.2 Motivation

The use of website is rising in Bangladesh. It is undoubtedly a popular online activity that is regularly increasing. User experience statistics for 2021 show that there are approximately 2,000 e-commerce websites in Bangladesh and this number is only growing. Figure 1.1 shows the percentage of users of websites. People connected with websites for different purposes like business, marketing, health, and other social issues. If we can use this websites and could generate collective intelligence, then it will be helpful for us.

 **Top E-commerce sites by November-2021's Google Search traffic**  
Showing list of 2021 top E-commerce site in Bangladesh by the number of search traffic

Logo	Domain	Direct Search	Referrals	Search Traffic	Social Traffic	Mail	Display
	Daraz.com.bd	5596923	83747	3243935	910118	177584	77693
	Bikroy.com	1657150	19734	629464	175329	48323	0
	Chaldal.com	1278468	7344	615468	69564	4896	64260
	Rokomari.com	331941	4604	483317	91341	9208	276
	Othoba.com	102118	18152	283528	106140	5652	27880
	Clickbd.com	27989	30290	277419	2741	0	0
	Foodpanda.com.bd	420404	22206	207759	50017	13798	4456

Figure 1.2: Most popular user websites in Bangladesh.

### 1.3 Rationale of the Study

Every year, the number of people using the internet grows. It might be evidence based data that determines the ideal user experience approach for a website based on the target population. Recognize who is far more likely to buy and how to reach out to them on a shoestring budget. The main challenges related to website promotions will be reviewed and studied in order to determine the ideal answer for making this brand well-known and well-selling. The practical portion of this thesis will demonstrate how to assess and formulate goals that were given at the outset.

The thesis is a quantitative and qualitative analysis of the above- mentioned brand's user experience website. This aspect of the user experience will be demonstrated and discussed through a quantitative and qualitative examination of e-commerce, platform that provides a variety of useful features for marketing and popularizing users.

#### 1.4 Research Questions

To make this work more ordered and coherent, the author will answer a few questions during the analysis and discussion of numerous issues. According to the author, the following questions will aid in grasping the main directions of the subject and outlining what result must be obtained at the end of this thesis work. They're also useful for determining the brand's major difficulties or shortcomings.

1. Is there a problem with usability on Bangladesh's e-commerce websites?
2. What elements contribute to the usability of e-commerce sites?

#### 1.5 Expected Output

From this paper, we expected a valuable and significant result. We expect to assemble as numerous as conceivable calculations in all fields. We expect to put through them and we'll investigate more than one calculation in any specific field. We attempted to compare them and discover out the best calculation for that specific field. We wish anybody can effortlessly discover arrangements or calculations for their issue in that particular field.

#### 1.6 Report Layout

This paper was divided into several chapters. Anyone may quickly determine which parts require. We discussed the background in the next section, which included the introduction, research overview, scope of the topic. We'll talk about research methodology in the upcoming chapter. The experiment results and discussion will be shown after that, and the final chapter will examine the summary, conclusion, recommendation, and implementation for future research.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

In this chapter, we will talk about our paper's background. Our paper is a literature base paper. For this chapter, we have to search for some related works. We have to make a research summary. We found out some scope of problem and challenges too.

#### **2.2 Bangladesh E-commerce**

Bangladesh is, in reality, progressing toward e-commerce through the use of the internet, information technology, and e-commerce evolution. Because to the advantages of optical fiber and mobile networks, Bangladesh have increased internet coverage at divisional, district, and upzila levels. Internet access is now available in even the most isolated locations. There are several types of e-commerce business available in Bangladesh right now. The most common and well-known of them is B2C (Business to Consumer). Transportation, food, hotels, tourism and apartment leasing are all examples of rapidly growing O2O (Online to Offline) enterprise. C2C (Consumer to Consumer) operations are available on some e-commerce platforms, such as bikroy.com. B2B (Business to Business) and B2G (Business to Government) businesses are scarce in Bangladesh.

The different product categories in Bangladesh's e-commerce sectors are reported Light Castle. These encouraging signs bode well for Bangladesh's e-commerce aspirations. Some the potential sectors for e-commerce in Bangladesh include banking (internet banking) beauty care, devices and electric devices products, styles and clothes and shoes, meals and cafe, residential going to sell and rent, decorative items and furniture items,

job hunting and online ads, and tourism. Toys and handicrafts, restaurant and community service, technology and entertainment (video, music, gaming).

Despite significant challenges, Bangladesh has recently seen a surge in the number of e-commerce sites. Due to improved digital information technology skills and a growing number of mobile and internet users, Bangladesh customers are now familiar with e-commerce business and several fields of e-commerce platforms. In 2012, e-commerce trading volume was around BDT 450 million, and 2013, it is predicted to exceed BDT 2000 million, demonstrating that Bangladesh's e-commerce sector has made significant growth.

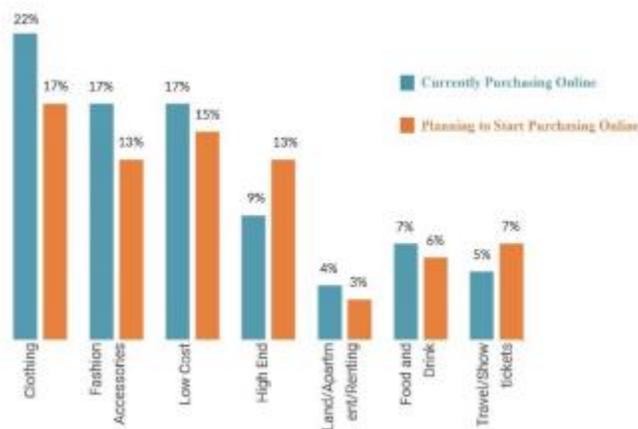


Figure 2.2: Product types Bangladesh's e-commerce business.

### 2.3 Online Customer Journey

A customer journey is a series of contacts between a customer and a company each of which causes the customer to have positive, negative, or neutral thoughts. Customer journeys commonly referred to as customer purchasing journeys, primarily studied in in

marketing and service design. As a result of digital technologies, consumers have become “so expert in their use of tools and information that they can call the shots, hunting down what they want when they want it and getting it delivered to their doorsteps at a rock-bottom price”, necessitating the development of finely tuned online experiences. Companies who are effective in providing great, easy, adaptive, and affordable internet experiences have the highest chance of prospering. These finely tuned online encounters have the potential to be transformative.

Customer journey mapping is used to gain a better understanding of how customers interact with firms. A buyer personality is a representation of an ideal customer that includes demographic, behavioral and motivational aspects, as well as centered design because it helps determine who the interfaces are designed for. Because design is often about constraints and trade-offs (not all features can be included), personas can help focus attention on the most important features points. Personas, which are based on market research and data, help to uncover customer complaints and provide critical information for improving user experiences and reducing usability concerns.

## 2.4 E-commerce Journey Analysis

Customer journey analysis is significant because it aids in identifying trigger points that prompt the customer to make a decision, as well as understanding what choices and possibilities the customer experiences along the way. Customer previous experiences influence all stages of the process and will influence their future experiences. This similar to how length of user’s encounter affects immediate UX (User experience) expected UX, episodic UX (reflecting on an experience after using), cumulative UX (recollecting multiple periods of use across time), and episodic UX (reflecting on an experience after using).

Customer types can be divided into groups based on various user behavior patterns. Impulsive journeys, balanced journeys, and complete journeys are the three types of client journeys. Customers in impulsive customer journeys spend less time looking for information and instead rely on previous experience, referrals, or product trials as their primary sources of information. Impulsive travels include making snap decisions, being persuaded by emotion, and being exposed to a brand. Recommendations from friends, or traditional media are likely to result in well-balanced excursions. These are the journeys that include a lengthy search and evaluation stage in which the customer has down an interest in purchase and is subjected to a cognitive evaluation. Customers on balanced trip generally examine the credibility of the information they've found by comparing it to other sources before making a purchase choice. Customers on considered journeys, like those on balanced journeys, go through a lengthy pre-shopping phase, but they also go through an orientation step. This necessitates collecting information from a number of sources, some of which may or may not be trustworthy. Because the client base of the example company is generally looking for the specific product niche they represent, balanced and mindful customer journey types are more likely to be found in their website visitor behavior.

Customer journey analysis and assessment's ultimate goal is provided action insights that may be utilized to reflect on the company's objectives. A variety of matrices can be used to assess customer journey performance, the most important of which conversion rate of an e-commerce site.

## 2.5 Customer Experience on E-commerce website

Customer experience is one of the most essential research topics for the coming years, according to the marketing science institute. According to most experts, improved

customer journey performance leads to a better customer experience and a greater conversion rate. Customer experience is a broad term that encompasses cognitive, emotional, behavioral, sensory, and social factors. It's the road to the end result; it's part of a larger concept of customer satisfaction.

Make the case that design has an impact on the consumer experience. High-quality images, videos, and copywriting take time and money, but they are critical to the success of an e-commerce website from both a customer journey and a user experience standpoint. Using design elements that not only deliver information but also entertain can help provide a great customer experience, which can help convert visitors to purchase on e-commerce websites, hence improving website performance. Conversion is aided by well-designed product pages that provide powerful verbal and visual triggers. Visual aspects, such as images, can simulate human connection and connect the product to the customer's life, but verbal elements, such as linguistic style, can change the website's relevance and usefulness. Customers reviews, certifications, recommendation agents, information filtering, and comparative matrices are just a few of the elements that can impact a purchase decision. Content filters are linked to Ariely's information control theory. Furthermore, structural factors like navigation and menus, as well as the overall organization of the website, have an impact on UX. For a pleasant UX on a website, it's to communicate the interconnections between pieces and make it easy for the user to move from one area to another.

The aspects of consumer experience are formativeness, entertainment, social presence, and sensory appeal, according to the dimensions of customer experience. These dimensions are the underlying factors that determine which web design elements in a given context best support purchase intent. The informative dimension's role is to deliver useful and resourceful information. It is the most neurocognitive part of the customer experience, as it includes both functional and value characteristics. Examine the

cognitive and affective components of usability, as well as their role in boosting user satisfaction. By inducing delight and arousal, entertainment can help to reduce shopping cart abandonment. Pleasure, arousal, or flow-related feelings, as well as purchase intents and consumer loyalty, can all be elicited. Finally, the visual factor involves sensory intake and processing, which is largely automatic and influences our decisions. The aesthetics of the website are a powerful tool for increasing sensory appeal.

As previously said, the correctness and accuracy of data on an e-commerce site may be reduce uncertainty and establish online trust, which can lead to a purchase decision. Because product attributes may be appraised without signing a physical contract, creating truth worthiness through meaningful web design is extremely crucial for the selling experience. This is why, in addition to technical information online, sensual aspect and social engagement of consumer experience should be included. The usage of recommendation bots, as well as the use of search goods, works well.

The rising complexity of customer journeys has made customer experience a crucial concept for e-commerce websites: experience are more social in character, and corporations have less control over the journey. Information and choice overload, for example, might impair a consumer's purchasing confidence and decision satisfaction. According on how often information and/or option overload they are receiving, consumers either stop browsing or continue looking throughout the pre-purchase time. If they aren't too overloaded, they can keep shopping until they reach the buy stage, at which point they must make a decision or postpone it. . As a result, it's critical to back up a purchase choice with a positive customer experience, which on an e-commerce sites mostly the product of strong web design and user experience.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This research focuses on the user experience, issues, and possibility of e-commerce in Bangladesh. The study uses both quantitative methods. We first got survey findings from 100 respondents in Dhaka, Bangladesh, which was a reasonable sample size, to estimate the representative sample for our subject. The respondents were between the ages of 15 to 40, with a mean lifespan of 26.

#### **3.2 Research methods**

Face –to-face interviews with questionnaires were done, and those who had access to the internet were included in the study. A stratified random sampling approach was used to ensure the existence of included among in the sample. Gender, age and education are the subgroups or strata used to choose the samples. To stress the accuracy, the majority of the data was classified on a 1-5 scale. Data collection and analysis for took done from June to December2021. Data was studied from several e-commerce viewpoints in Bangladesh, taking into account numerous user experience and indication for e-commerce technology.

### 3.3 Research structure

The research is divided into two sections: theoretical and practical. The theoretical explanations describe the major concerns that empirical study will address subsequently. These books teach users how to design a promotional business for e-commerce websites in Bangladesh using quantitative and qualitative user experience analytics.

Quantitative research:

The goal of quantitative research is to acquire precise numerical indicators of a website's performance. Prior to beginning this investigation, the most critical step is to determine which metrics and indicators are most relevant to. When we know this, we can structure the data collection process to ensure that we get accurate and timely measurements of the metrics that matter most to the company.

In reality, we must design a measurement plan before we begin measuring anything. A measurement strategy is made up of key performance indicators (KPIs) that explain how they contribute to broader corporate objectives.

What are KPIs?

KPIs are measurement that best indicate a website's success. Determining the appropriate KPIs necessitates a thorough understanding of the business, the interrelationships between specific processes, and the actions taken by customers.

A measure must be positively connected with the final macro-objective, which in the case of practically all e-commerce sites is a product purchase, in order to qualify as a KPI.

For instance, the sales department might say that 40% of all clients who fill out a lead form will buy anything. That is to say, increasing the number of persons who complete out the form will have a direct and beneficial impact on the final result.

As a result, a KPI is the number of persons who complete out the form.

The major goal of a measurement strategy is to find these connections, quantify them, and build up a mechanism to track them.

This enables you to not only measure properly, but also plan and prioritize improvements based on the magnitude of their individual impact on the end result.



Figure 3.3: Showing a measurement plan

Quantitative data is primarily used to visualize and recognize patterns in visitor behavior. This allows to you generate hypotheses based on the action of certain visitors.

#### Qualitative research

The last, but certainly not least, component of conversion optimization study is qualitative research. It is concerned with how consumers perceive a website.

It's difficult to optimize a website without considering the most crucial factor of all: the users and customers who use it to accomplish their goals or solve their problems.

Furthermore, qualitative research is used to collect as much information as possible about the website's target audience in order to improve personalization and better address the target audience.

#### 3.4 Situation analysis

A fuzzy systematic evaluation method of user experience is offered to solve the problem of usability evaluation quality being difficult to accurately analyze on the e-commerce website. To begin, the application of quality architecture is organized according to usability testing theory and the analysis of user experience aspects on e-commerce web using process, with views such as human-computer interaction clients and professional views. After that, the weighted factors are fuzzed and the analysis outcome is fuzzed using an analytical hierarchy approach. Finally, an example is given to show that the evaluated model is effective in determining the user satisfaction on the E-commerce website.

As ICTs, particularly the internet, become more generally available, the worldwide business community is rapidly transitioning toward Business to Business (B2B) e-commerce. When buyers/importers have online media access to foreign markets, they can compare prices across location, see if prices differ due to order fracturing, and gain knowledge about substitutes/alternatives owing to purchase buyers make sure that their brand names are represented fairly in the digital world via internet sites and channels. Sellers benefit from greater and more economical internet connectivity to the global market, just as consumers do. Bangladesh is pursuing a growth strategy guided by experts. With the pressures of globalization intensifying, it is becoming increasingly important for the corporate companies, particular the export sector, to be well-equipped to fulfill the conditions and expectations of importers while also distinguishing itself from exporters from other countries. In such a scenario, two different issues are particularly essential for Bangladesh's exporters: first whether business owners are digitalizing their internal processes with ICTs to become businesses with strong presence and participation in the cyber world.

The majority of Bangladeshi consumers are unaware of online buying operations, payment transactions, and security. As a result, people are cautious to transact online, despite the fact that people want to pay for items when they are delivered. Another factor is the theft of credit card information. Some companies provide enticing incentives to obtain credit card information while buying online, then hijack the information and illegally punch to earn money. To eliminate this thorny situation, proper norms and authority action are essential.

### 3.5 UI Design

User interface (UI) development is the procedure of creating interface design in programs or electronic devices with a focus on look or style. Designers aim to create user interfaces that are both aspects of user interface design.



Figure 3.5.1: User Interface (UI) design

User interfaces are the access points where users interact with designs. They come in three formats:

1. Users interact with visual representation on digital control panels in graphical user interfaces (GUIs). The desktop of computer of a computer is a graphical user interface (GUI).
2. Voice- controlled interfaces (VUIs): These allow users to interact with the system using only their voices. The majority of smart assistants, such as Siri on iPhone and Alexa amazon devices, are virtual user interfaces (VUIs).

3. Gesture-based interfaces: In virtual reality (VR) games, users interact with 3D design areas by moving their bodies.
4. Users make snap decision about designs and value efficiency and favorability.
  1. They aren't concerned with design, but rather with completing their tasks quickly and efficiently.
  2. As a result the design should be "observable". Users should not be concerned with it, but rather with performing tasks, such as ordering pizza through the Domino's Zero click app.
  3. To fine -tune the best, intuitive UIs that give a consistent experience, understand users settings and job flows (which you may obtain via, for example, customer journey maps).
5. User interfaces should be enjoyable (or least satisfying and frustration free).
  1. Users can have more personalized and immersive experiences when design anticipates their needs. If you delight them, they'll keep coming back.
  2. Gamification components, when used appropriately, can make the design more enjoyable.
6. User interfaces should communicate corporate identity and bolster user confidence.
  1. Design process is good design. Users associate positive emotions with companies that communicate with them on all levels, preserving the enchantment of a joyful, smooth transition.

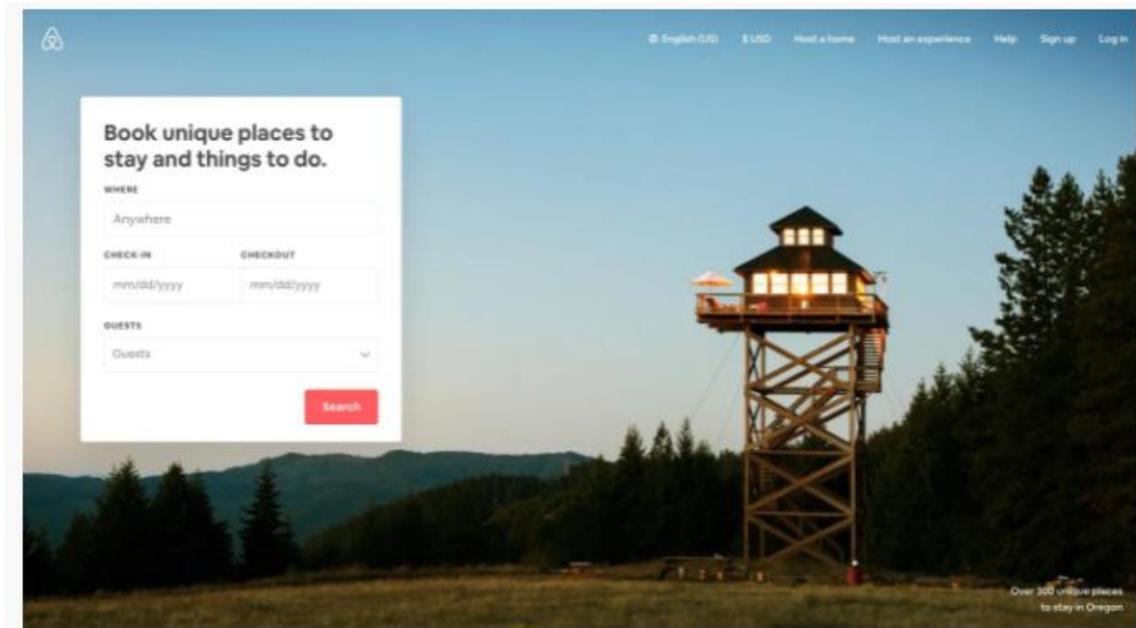


Figure 3.5.2: Layout users satisfy, easily and enjoyable

### 3.6 UX Design

User experience (UX) design is the process by which design teams build products that provide users with meaningful and relevant experiences. This includes aspects of the product's integration. All of these aspects, including design ease of use and usefulness, are critical.

#### **UX design consider the why, what and How of use**

Users can consider why, what, and how people utilize a product as a UX designer. The why relates to a user's motivations for using a product, if they are related to a job wish to achieve with it or to values and viewpoints associated with product owning and use.

What the address is about is the product's functionality, or what people can do with it. Finally how does it connect to utilitarian design in a way that is both usable and pleasant to the eye? UX designers start with the why, then the what, and finally the how when creating products with which users may create amazing interactions.

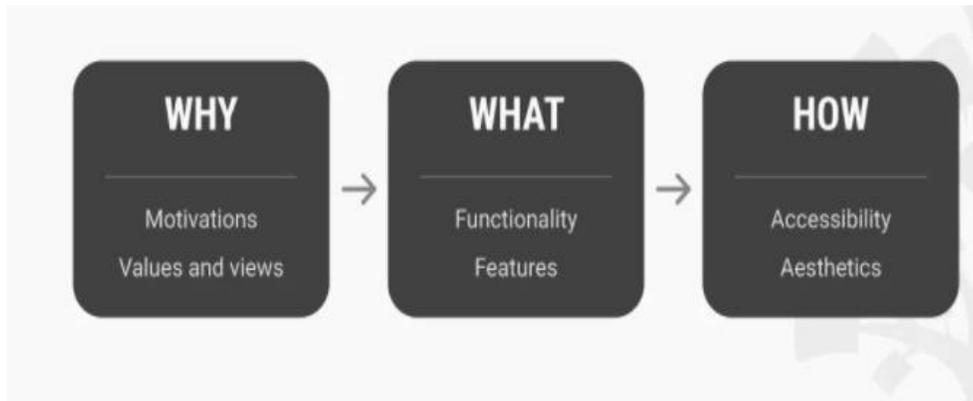


Figure 3.6.1: The why, what and how of UX Design

We need assure that perhaps the product's content is provided through an embedded device and also that the encounter is clean and efficient in software design.

### **UX design is User-centered**

UX design is a comprehensive field that includes all aspects of the user experience. Graphic designers, programmers, psychologists, and interaction designers are all examples of UX designers. When create for human users, you must take into account a wider variety of accessibility difficulties and account for a wide range of physical limitations, such as trouble reading small type. A UX designer's responsibilities include doing user research, creating personas, sketching wireframes and making it accessible, and putting ideas to the test. These obligations differ greatly from firm to organization, but they always need designers to advocate for consumers and maintain their needs at the center of all design & analysis activities. That's why the majority of UX designers take a

user-centered design strategy and keep directing their greatest efforts until they've address all of the relevant difficulties and user requirements.

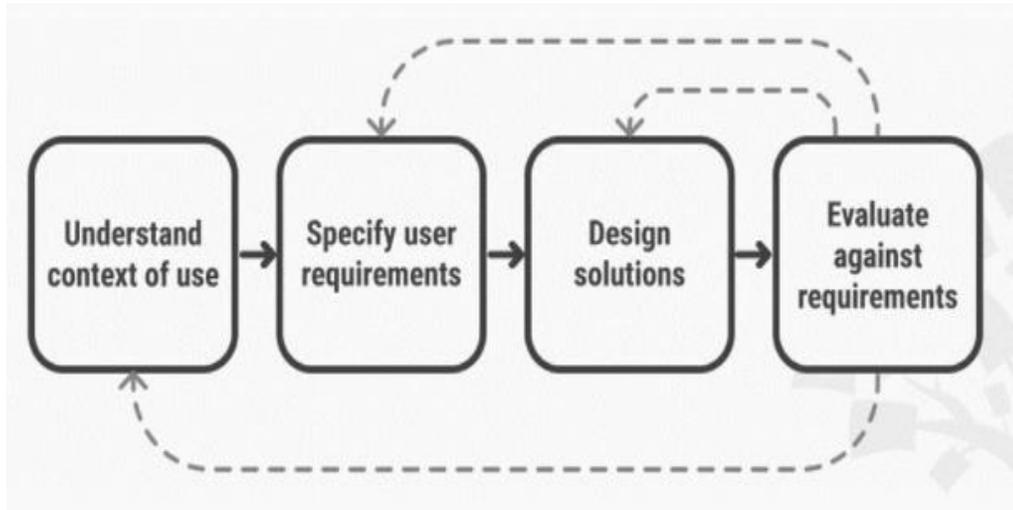


Figure 3.6.2 User-centered design.

## **CHAPTER 4**

### **EXPERIMENTAL RESULTS AND DISCUSSION**

#### 4.1 Introduction

We covered the introduction, context, and methods in the preceding chapter. We will present our experimental findings and conclusion in this chapter.

#### 4.2 Experimental results

Variable	N	Type and Percentage				
Gender	100	Male 80%	Female 19%			
Online Shopping	100	Yes 41%	No 58%			
Age	100	<20 7%	20-24 28.7%	25-29 31.3%	30-40 25.2%	>40 7.7%
Education	100	Junior school 5.5%	Senior school 11.6%	Diploma 17.3%	Undergraduate 38.4%	Graduate and Above 27.2%

Variable	N	Type and Percentage				
Status	100	Student	Teacher	Service	Business	Unemployment

		43.2%	11.4%	24.1%	14.2%	7.15
Shopping hours/month	100	<5 30.3%	5-9 34%	10-14 18.4%	15-20 11.5%	>20% 5.1%
Shopping frequency/month	100	<2 29.3%	2-4 35.7%	5-7 17.6%	8-10 12.2%	>10 5.2%
Payment method	100	Credit card 6.5%	Debit card 3.5%	Mobile banking 17.9%	Cash on delivery 72.1%	
Shopping experience	100	Difficult 27.3%	Convenient 78.5%	Helpfulness 82.4%	Easy delivery 75.7%	Easy service support 22%
Shopping type	100	B2B 7.1%	B2C 42.4%	C2C 17.3%	O2O 30.2%	B2G 3%

Table 1: Summary statistic form survey result of E-commerce Bangladesh

### 4.3 Descriptive analysis

To acquire the current e-commerce summary statistic result, we collected 100 sample survey data in the context of the e-commerce industry in Bangladesh, such as B2B, B2C, C2C, O2O, and B2G. For the study, we intend to gather statistical data on age, education, online shopping, job status, shopping time, frequency, payment method, shopping experience, and shopping kind. The statistics from the survey are given in the table.

Let's go on to the second component of the questionnaire, which is divided into eight sections: (1) ease of use, (2) design, (3) responsibility, (4) information quality, (5) empathy, (6) trust, (7) free shipment and (8) discount. The responses of the respondents were evaluated and compared in percentage to schematically portray the result obtained. The distinction between technical and emotional aspects has rapidly become apparent.

These findings support prior research (Chen & Dubinsky, 2003; Ha & Stoel 2009) showing customer are more than just online users with technical needs; they are also shoppers with service, emotional, and experiential needs.

Technical features	Count%	Emotional features	Count%
1. Ease of use	19.10%	5. Empathy	6.51%
2. Design	6.15%	6. Trust	7.40%
3. Responsibility	5.45%	7. Free shipping	24.50%

4. Information	4.55%	8. Discount	25.60%
Total		35.25%	
Total		64.01	

Table 2: Technical and emotional

Going to greater detail, it is feasible to see that some variables are more important than others: for example savings, free shipping, and ease of use. We chose the cumulative frequency chart as a representation to better comprehend these data. As previously stated, this methodology emphasize the most important criteria in determining quality. In contemporary digital age, this study is unusual in that it extends this rationale to the definition of satisfaction and performance for e-commerce.

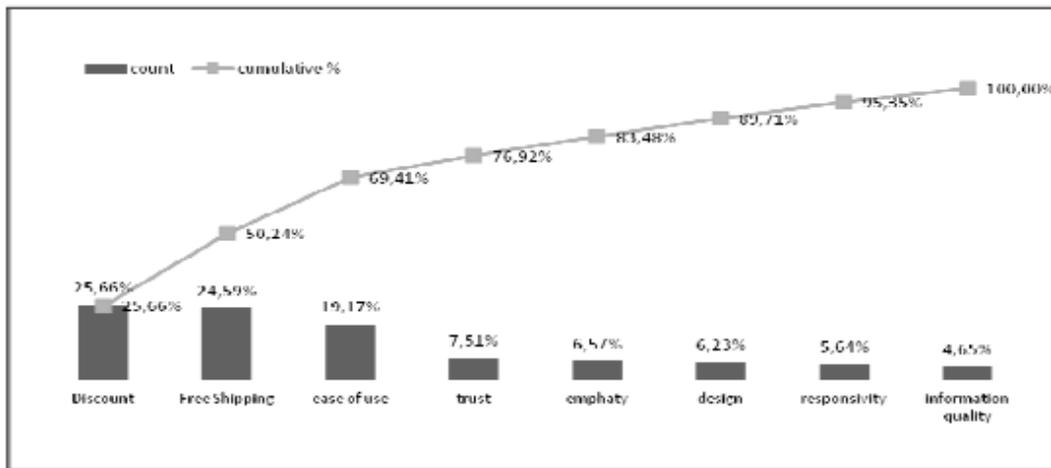


Figure 4.3: E-commerce using chart.

The graph shows that three features (discount, free delivery, and ease of use) account for 67.51 percent of an e-commerce user’s experience. To put it another way, this suggest that other factors only play a little role.

#### 4.4 Summary

In this chapter, we made a table based on our information. We compare all algorithms together and try to find out the best algorithm for that particular field.

## CHAPTER 5

### SUMMARY, CONCLUSION, RECOMMENDATION, AND IMPLICATION FOR FUTURE RESEARCH

#### 5.1 Summary of the study

The goal of the study was to come up with a theoretical and practical strategy to planning, developing, and evaluating user experience website campaigns. This goal was met as well, because the thesis includes both a board high-level procedure approach to campaign planning and detailed campaign strategies such as execution estimation, campaign setup, and optimization. Other quantitative and qualitative analyses of e-commerce campaigns could benefit from the proposed showcasing campaign technique and ideas.

#### 5.2 Conclusion

We wish if any new learner to start a new work it will be a great help for them because in our time duration we try to gather as many as possible data and its related field. We compare them try to find out the best data so we think it will be easier to use and they don't feel the confused middle of their work.

### 5.3 Recommendation

We recommend this paper for new learners and new researchers who will be confused by writing their papers. They can decide first which algorithm is perfect for their paper. They can also compare them and for their particular field, they can use more than one algorithm.

### 5.4 Implication for further study

This proposal falls into the rapidly growing subject of internet showcasing. Quantitative and qualitative analysis of e-commerce websites, in particular is rapidly changing from month to month, with previously unnoticed highlights being added or changed. Despite the fact that the author endeavored to use the most up-to-date sources in his research, readers should be cautions in the future and double –check whether the information presented is accurate.

E-commerce is becoming a part of many people’s daily lives, particularly those who live in cities. The study aims to investigate the quantitative and qualitative analytics for e-commerce website user experience in Bangladesh. The steady increase internet subscribers, according to the survey, is in fact increasing, demonstrating people’s interest in the internet and related technology. The adoption rate of the internet is gradually increasing, indicating that people are getting more interested in trying out new technology. According to the tendency of e-commerce sites and marketing across multiple online communities, the e-commerce market is rapidly developing, and consumers are willing to buy from various e-commerce sites. The government is devoted to e-commerce technology implementation and has enlisted the assistance of numerous e-commerce technical sectors. Bangladesh’s central bank and ministry of finance and trade are also working together to develop an e-commerce platform that is both user –friendly and secure. The report finds that Bangladesh has a promising future for e-commerce due to growing trust, e-commerce facilities, security, people’s awareness, and the transition

from traditional shopping to online purchase. Individuals favor internet shopping because of its convenience, product selection, cost advantage, and improved efficiency, according to the report. Consumer dishonesty, a lack of adequate online security on some e-commerce sites, a lack of financial institutions, shipping restrictions, and the requirement of a credit card are all major roadblocks to the development of e-commerce in Bangladesh. It recommends that the government take proper actions to build ICT policies in order to ensure that e-commerce websites in Bangladesh run smoothly.

## References

1. Authorize.net (2007-2012), “E-commerce. Getting started guide” Retrieved 01.04.2018 from [https://www.researchgate.net/publication/325668539\\_Development\\_dimensions\\_of\\_E-Commerce\\_in\\_Bangladesh\\_Scope\\_challenges\\_and\\_threats](https://www.researchgate.net/publication/325668539_Development_dimensions_of_E-Commerce_in_Bangladesh_Scope_challenges_and_threats)
2. <https://thefinancialexpress.com.bd/views/views/e-commerce-in-bangladesh-where-are-we-headed-1578666791>
3. Kivistö, R., 2020. E-commerce product information supporting user experience.
4. [https://www.researchgate.net/publication/354997107\\_The\\_Emergence\\_of\\_E-commerce\\_in\\_Bangladesh\\_And\\_Its\\_Growth](https://www.researchgate.net/publication/354997107_The_Emergence_of_E-commerce_in_Bangladesh_And_Its_Growth)
5. <https://jyx.jyu.fi/handle/123456789/68647>
6. <https://www.questionpro.com/survey-templates/customer-satisfaction-surveys>
7. <https://ogilvy.medium.com/how-to-use-qualitative-and-quantitative-data-to-improve-user-web-experiences-986dc32ec70c>
8. <https://www.bigcommerce.com/blog/user-experience-research-cro/#2-quantitative-research>

9. DiFattaD.MusottoR. VesperiW.2016.Analyzinge-commercewebsiteaquali-quantitativeapproachfortheUserPerceivedWebQualityInternationalJournalofMarketingStudiesVol.8No.633-44.pdf
10. <https://www.interaction-design.org/literature/topics/ui-design>
11. <https://www.interaction-design.org/literature/topics/ux-design>
12. TheEffectofUser-GeneratedContentFactorsonImprovementUsabilityforE-CommerceinContextofBangladesh.pdf
- 13TheEffectofUser-GeneratedContentFactorsonImprovementUsabilityforE-CommerceinContextofBangladesh.pdf
14. Akter, S. and Wamba, S.F., 2016. Big data analytics in E-commerce: a systematic review and agenda for future research. *Electronic Markets*, 26(2), pp.173-194.
15. Leia Gatch (2015) “Learn to Make Soutache: Braid-and-Bead Embroidery Jewelry” Retrieved 01.05.2018 from <https://makezine.com/2015/07/23/learn-make-soutachebraid-bead-embroidery-jewelry/>
16. <https://www.hotjar.com/ux-design/analysis/>
17. [https://link.springer.com/chapter/10.1007/978-3-030-30874-2\\_13](https://link.springer.com/chapter/10.1007/978-3-030-30874-2_13)
18. <https://www.proquest.com/openview/ad07ef67657d5283f2d070deb8733a77/1?pq-origsite=gscholar&cbl=816339/>
- 19.[https://www.researchgate.net/publication/344059017\\_The\\_Effect\\_of\\_User-Generated\\_Content\\_Factors\\_on\\_Improvement\\_Usability\\_for\\_E-Commerce\\_in\\_Context\\_of\\_Bangladesh](https://www.researchgate.net/publication/344059017_The_Effect_of_User-Generated_Content_Factors_on_Improvement_Usability_for_E-Commerce_in_Context_of_Bangladesh)

20. Sahel, S., Anwar, T. and Nandi, B., 2018. Factors affecting the selection of an E-commerce website in Bangladesh: E-tailers' perspective. *International Review of Management and Marketing*, 8(4), p.1.
21. McKnight, D.H., Choudhury, V. and Kacmar, C., 2002. Developing and validating trust measures for e-commerce: An integrative typology. *Information systems research*, 13(3), pp.334-359.
22. Akter, S. and Wamba, S.F., 2016. Big data analytics in E-commerce: a systematic review and agenda for future research. *Electronic Markets*, 26(2), pp.173-194.

## INTRODUCTION Quantitative & Qualitative Analysis of User Experience Analytics for E-commerce Websites of Bangladesh

### ORIGINALITY REPORT

<b>18%</b>	<b>9%</b>	<b>6%</b>	<b>8%</b>
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

### PRIMARY SOURCES

<b>1</b>	Md Altab Hossin, Md Nazirul Islam Sarker, Yin Xiaohua, Adasa Nkrumah Kofi Frimpong. "Development dimensions of e-commerce in Bangladesh", Proceedings of the 2018 International Conference on Information Management & Management Science - IMMS '18, 2018 Publication	<b>4%</b>
<b>2</b>	Submitted to King's Own Institute Student Paper	<b>2%</b>
<b>3</b>	<a href="http://www.theseus.fi">www.theseus.fi</a> Internet Source	<b>2%</b>
<b>4</b>	<a href="http://www.interaction-design.org">www.interaction-design.org</a> Internet Source	<b>1%</b>
<b>5</b>	Submitted to Melbourne Institute of Technology Student Paper	<b>1%</b>
<b>6</b>	Wei Liu, , Daoli Huang, and Yan Zhang. "Research on fuzzy comprehensive evaluation	<b>1%</b>

of user experience", 2010 IEEE Youth Conference on Information Computing and Telecommunications, 2010.

Publication

7	dspace.daffodilvarsity.edu.bd:8080 Internet Source	1 %
8	ccsenet.org Internet Source	1 %
9	Submitted to University of Greenwich Student Paper	1 %
10	docplayer.net Internet Source	1 %
11	Submitted to Melbourne Institute of Business and Technology Student Paper	<1 %
12	mblbd.com Internet Source	<1 %
13	Submitted to Eastern Michigan University Student Paper	<1 %
14	Anna Bobkowska. "On explaining intuitiveness of software engineering techniques with user experience concepts", Proceedings of the International Conference on Multimedia, Interaction, Design and Innovation - MIDI '13, 2013 Publication	<1 %

15	Submitted to North South University Student Paper	<1 %
16	Submitted to Southern New Hampshire University - Continuing Education Student Paper	<1 %
17	speakerdeck.com Internet Source	<1 %
18	Submitted to Colorado Technical University Online Student Paper	<1 %
19	Submitted to PSB Academy (ACP eSolutions) Student Paper	<1 %
20	edepositireland.ie Internet Source	<1 %
21	github.com Internet Source	<1 %
22	hdl.handle.net Internet Source	<1 %
23	1library.net Internet Source	<1 %
24	www.coursehero.com Internet Source	<1 %
25	Lukai Zhai, Dana Anderson, Elizabeth Bruckner, Ebenezer Tumban. "Novel	<1 %

**bacteriophage  $\Phi$ IN93 and evaluation for  
assembly into virus-like particles", Protein  
Expression and Purification, 2021**

Publication

---

---

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off