

**An Empirical Usability Analysis of E-Grocery
Mobile Applications in Bangladesh.**

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for the award of the degree of
Bachelor of Science

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NOVEMBER 2025

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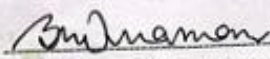
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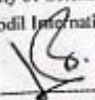
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ACKNOWLEDGEMENT

I would like to state that I have been helped, guided, and provided with useful feedback by my supervisor, Ms. Tapushe Rabaya Toma, Assistant Professor, Department of Software Engineering, who guided and supported me during this research. I also wish to thank the faculty and staff of the Daffodil International University Department of Software Engineering that was supportive and provided some resources. This study would not have been a possibility without all the participants who took their time and gave their feedbacks to the surveys. I owe my peers and friends my encouragement, and my family their on-going support and faith in me.

DEDICATION

This thesis is dedicated to my father who has always been my inspiration through his hard work and general commitment to success which he never gave up despite his death in my life. He has influenced my values, as I want to excel and do my best in everything I do, because of his commitment to working hard and be the best at what he does. It is a working testament of his teachings and I will always be thankful of the strength, wisdom and guidance he gave. The fact that he is no longer with me does not take away his influence in that everything I do is guided by him.

ABSTRACT

The study examines the usability and user acceptance of online grocery platform in Bangladesh with reference to traditional grocery chain, which has shifted to online platform. As online groceries are rapidly growing, websites like Pandamart and Chaldal have become market leaders in the industry in terms of their user base and market share. Nonetheless, mainstream grocery stores such as Shawpno have experienced considerable difficulties in replicating the same success online with their user ratings and interest being lower than the online platforms. The main aim of this research paper is to find the major reasons behind these issues and to analyze the possibility to use these conventional grocery stores in comparison to the more successful online versions. To collect the user feedback of three leading online grocery sites in Bangladesh namely Pandamart, Chaldal and Shawpno, the study uses the system usability scale (SUS), which is a highly recognized form of usability testing. One hundred and fifty to one hundred and sixty participants were surveyed and the data obtained was helpful in terms of satisfaction level, perceived ease of use and general usability of the platforms. The analysis of data was used to determine the usability problems that are evident, user preferences and obstacles to adoption of such online grocery services. The results of this study indicate that the user experience of Pandamart has been the best as it has both the highest user satisfaction and usability scores. Chaldal is the next in line that has positive feedbacks but limitations in its user experience. Shawpno, in its turn, has significant user satisfaction problems, such as navigation problems and a less sensitive mobile interface. The comparison of these platforms provides actionable insights into the future of enhancing the digital shopping experience of Shawpno and making the strengths of Chaldal and Pandamart even stronger. The results of the study will help guide towards improvement of the usability and acceptance of the current digital grocery tools by the customers in Bangladesh, which can help them be digitalized and compete better in the emerging digital world of e-commerce.

TABLE OF CONTENTS

TITLE PAGE	i
APPROVAL	iii
ACKNOWLEDGEMENT	viii
DEDICATION	ix
ABSTRACT	x
TABLE OF CONTENTS	xi
LIST OF FIGURES	xii
LIST OF TABLES	xiii
LIST OF ABBREVIATIONS	xiv
CHAPTER 1: INTRODUCTION	1-10
1.1 Background	1
1.2 Motivation of the Research	3
1.3 Problem Statement	5
1.4 Research Questions	7
1.5 Research Scopes	7
1.6 Overview All Grocery Shop.....	9
CHAPTER 2: LITERATURE REVIEW	11-19
2.1 Background.....	11
2.2 User Experience	12
2.3 Usability	16
2.4 Summary of Literature Review	19
CHAPTER 3: RESEARCH METHODOLOGY	20-29
3.1 Quantitative Research.....	20
3.2 Advantage of Quantitative Research.....	21
3.3 The Survey Method.....	22
3.4 Data Pre-processing System.....	24
3.5 Data Visualization	26
3.6 Demographic Information	28
3.7 Usability Calculation for Pandamart.....	28
3.8 Usability Calculation for Chaldal.....	28
3.9 Usability Calculation for Shawpno.....	29
CHAPTER 4: RESULTS AND DISCUSSION	30-31
4.1 Results and Discussion	30
CHAPTER 5: CONCLUSIONS AND RECOMMENDATION	32-37
5.1 Conclusion.....	32
5.2 Recommendations for Future Works	33
REFERENCES	38-39
Appendix – A	40
Appendix – B	41
Appendix – C	43

LIST OF FIGURES

Figure 1: Three circle of user.....	13
Figure 2: The Honeycomb Model.....	13
Figure 3: The PACMAD Model	16
Figure 4: The Research Process Model	21
Figure 5: Survey Data Sample	23
Figure 6: Survey Data Sample	23
Figure 7: Survey Data Sample	23
Figure 8: SUS flow activity.....	24
Figure 9: Gender Ratio	26
Figure 10: Age Ratio	26
Figure 11: Area Ratio	27
Figure 12: Grocery shop Ratio.....	27
Figure 13: Profession Ratio.....	28
Figure 14: Interfaces of applications.....	33-35

LIST OF TABLES

Table 1: Likert Scale	24
Table 2: SUS Questionnaires	24
Table 3: SUS Adjective Rating	25
Table 4: Demographical Information	28
Table 5: SUS score for all	30

LIST OF ABBREVIATIONS

SUS – System Usability Scale

HCD - Human-Centered Design

CHAPTER 1

INTRODUCTION

1.1 Background

Grocery shopping online has been on the increasing trend in Bangladesh that is gradually on the increase due to the increasing numbers of smartphones, the improved access to the internet, and the changing consumer behavior. In recent years, the mobile-based applications are enabled by smartphone penetration, which is currently over 60 percent according to a report by Bangladesh Telecommunication Regulatory Commission, which is facilitating the reach of more people in Bangladesh. Additionally, the proliferation of the 4G internet network within the urban areas as well as the rural areas has been key to the development of mobile e-commerce such as the online grocer market. The online grocery stores such as Chaldal and Pandamart have been rapidly popular with the digital platforms being able to fulfill the demands of the convenience, price, and product variety consumers of the online grocery stores.

Chaldal, being one of the largest e-grocery stores in Bangladesh, provides multiple types of goods, home delivery service and an alternative payment method including cash on delivery, mobile wallets, and credit cards. The app is also given the credit of its intuitive interface that makes it simple and easy to shop online groceries even to the users belonging to other demographics. Similarly, Pandamart, another e-grocery player, is also taking advantage of the convenience of shopping with low prices and easy navigation that has gained a very large number of urban residents interested in using services that imply time savings.

This has been realised due to their prospects of being adapted to the digital era with the provision of services that are affordable, user friendly and accessible to rural and urban masses. This is consistent with the global trends at the moment whereby the digital transformation of the retail industry has been part of the increase in online grocery shoppers. The digital transformation of grocery shopping, which is not quite speedy in certain developing economies, including Bangladesh, is postulated to have accelerated due to the growing number of middle classes, as well as the changing consumer behaviour.[2]

On the other hand, the traditional grocery stores that did not enter the offline retail market a few years ago, such as Shawpno, find it hard to transfer their success to the online platform. Shawpno is a reputed grocery chain store within Bangladesh and its offline network is extensive as well as its client base is particularly high in the metropolitan regions. However, its online platform has not performed as well as the physical stores despite the excellent brand

recognition of Shawpno. Despite the great range of products on Shawpno online shop, the reviews left by the customers in Google Play store and App Store have been lower than that of the rivals like Chaldal. It means that Shawpno is facing the issue of user engagement, convenience, and functionality overall via the online platform (Shawpno, 2024).

To have people motivated to utilize any application, usability of that application should be put into consideration at the start and during the process of developing it, should be assessed during the process to ensure that the application has minimum usability problems after its release to the market. [1] This variance between the online and offline performance of Shawpno suggests the challenge posed by the traditional retailers in their process of adapting to the e-commerce market. The main issues seem to be related to the structure of the user interface, the difficulty of navigation, and unsuitable delivery services causing dissatisfaction of the customers. It is established in research that the usability of online platforms is very crucial in customer satisfaction and retention in online shopping, especially in the grocery business.

Usability is described as the ability through which a system is capable of giving the user a secure environment in which he/she can successfully and efficiently undertake his tasks. This report will be attempting to establish where the online services of Shawpno are experiencing usability issues and ways in which they might be contrasted with more successful e-grocery services in Bangladesh, such as Chaldal and Pandamart. It is on such usability issues that the report will recommend corrective actions to the online interface and functionality of Shawpno which will render it more competitive in the digital market which is increasingly growing.[1] An application must have good User Interface (UI) and User Experience (UX) in order to make users happier.[2]

System development through usability evaluation can assist in finding improvement points and make redesign of processes depending on the feedback provided by the users. When conducting usability evaluation, it is also important to consider the user perspective on the system and the user experience of the system through the human-centered design approach.[2] Shawpno can take advantage of this evaluation strategy, which would guarantee that their online services would address the actual needs and expectations of the user.

HCD operates to create more human-focused interfaces of systems, which offer human and human-centered benefits through human factors, ergonomics, knowledge of usability, and techniques .[2] With Human-Centered Design (HCD), Shawpno, Pandamart, Chaldal may

become more human-centered in developing its interface and making it easier to use and efficient enough to overcome the gaps that currently hamper the success of the online platform.[3][4]

1.2 Motivation of the Research

This study is based on the fact that the retail market situation in Bangladesh, especially the grocery section, is changing very rapidly which makes it a subject of research. The old fashioned grocery shops such as Shawpno that have been enjoying the dominance of the offline retail market are now under intense pressure to move into the digital platform to ensure that they do not lose competitiveness. Due to the increase in e-commerce throughout the world, Bangladesh has not been left behind in this trend where the nation is showing a lot of growth in online shopping particularly in the grocery market.[5]

Pandamart has been among the fastest growing and successful online grocery stores in Bangladesh in the recent years. It has gone a long way in winning user trust and loyalty especially through simple and easy to use design and effective provision of services that have resulted in high customer satisfaction and usage frequency. [6]The smooth user interface of Pandamart and its capacity to keep customers active has propelled it to become one of the market leaders of the online grocery business in Bangladesh. This achievement is particularly significant because an increasing number of consumers are resorting to utilizing digital channels to address their shopping needs because the latter provide the consumers with the convenience, speed, and choice that they require.

Pandamart is closely followed by another market leader in the e-grocery market, Chaldal. Chaldal has established an impressive market share through diversification of its products, timely delivery, and easy interface. Chaldal became the winning company in the category of the best e-commerce company in Bangladesh in 2020 during the COVID-19 pandemic. This award has shown its flexibility to changes in response to the pandemic and increased dependence on digital solutions in the delivery of key services such as online grocery shopping. The success of Chaldal, especially in the pandemic, highlights the relevance of a properly functioning, user-centric online platform as a tool of retaining and growing customers in the e-commerce sphere.[5]

Although the platforms such as Pandamart and Chaldal have performed well, Shawpno, which has an established physical presence and large customer base has failed to gain momentum in the online grocery business. Despite having the highest number of offline users

in Bangladesh, Shawpno has had its share of failure to migrate into the online space. The online platform of Shawpno has attracted negative comments and users argue that it has poor navigation, complex user interfaces and lacks user friendly features that make it emotionally challenging to shop using Shawpno. These usability problems are reflected in low ratings on such platforms as Google Play Store and App Store, and Shawpno has not yet gained a customer engagement on the internet as the company does offline.

The reason behind doing this research is due to the increasing demand of ensuring that traditional grocery stores such as Shawpno can adjust to the growing e-commerce market by improving their online presence. In an ever-evolving digital environment, where the online shopping environment is taking over as the leading shopping platform of the future, the question is how traditional retailers can be assured of their ability to win the trust of their users, solve the usability problem, and enhance the general experience of their users.[7] This is especially important in the case of Shawpno, which needs to resolve the discrepancy between its success in the offline and its failures in the online arena.

This study is aimed at enhancing the online shopping experience of the traditional grocery stores, and Shawpno, in particular, by determining the usability issues that such platforms encounter. This involves enhancing the level of user acceptance, learnability and memorability of their online platforms and lowering the cognitive load of its users. It is crucial to ensure that the customers are able to move around the platform comfortably, work effectively and recall how to use the application after some time without it being used so as to increase customer loyalty and usage.

Finally, the study would serve to advance the development of the online grocer market in Bangladesh by offering practical recommendations on the way in which traditional services can be improved to include an online option. The study will serve to assist Shawpno and other traditional stores in competing better with the other more successful platforms in the growing digital market by addressing the challenges that Shawpno must address in order to make the transition between offline and online. Enhancement of online presence of the traditional grocery stores will not only make them retain their existing customer base but also allow them to attract a new generation of online shoppers thereby helping in promoting the overall development of the e-commerce business in Bangladesh.

1.3 Problem Statement

The main examples of the online grocery stores that have established themselves in Bangladesh are Shawpno, Pandamart, and Chaldal, which are all fighting to have a share of the growing online grocery market. Despite each of the three platforms having proved successful in facilitating the increased need of online grocery shopping, they are all confronted with different challenges as concerns delivering a consistent and convenient customer experience that translates into a high level of customer satisfaction.[8]

Individually, Pandamart is commonly considered to be a quality and convenient place to shop, one of the most comfortable places to order groceries online in Bangladesh. The platform has a user interface (UI) that is deemed comfortable, effective, and appropriate to a huge group of the population and this has made it gain more and more customers.

The business competitors like Chaldal are also very competitive in the business. It provides a great variety of grocery and good delivery services that make it a favorite among the majority of online buyers. However, it has not been a failure despite its success, as it has not been without failures in areas like user interface and product searching features, and general user experience. In spite of these being smaller problems compared to Shawpno, these problems indicate that successful platforms still lack usability challenges that can interfere with user interaction.

Shawpno, on the other hand, with its long-established reputation of offline sales and recurring customer base, has had serious challenges getting into the online grocery segment. Despite Shawpno being one of the most famous grocery brands in Bangladesh, online business has failed to satisfy the needs and expectations of online buyers. On the Google Play Store and App Store, the reviews of the Shawpno smartphone application also tend to mention the problem with the usability and the user experience. A lot of customers report with problems navigation issues, bad interface design, and performance.[3] Customers rated the app of Shawpno very lowly compared to its competitors, and most of them mentioned issues with their transactions, poor search results, and frustrating checkout times. The problems are also supplemented by poor delivery services and non-responsiveness to customers complaints which lead to lowered involvement and fewer repeat users.

The majority of people are inclined to utilize products that are not complicated to use, perform their tasks, and ultimately bring some value. System usability in the context of software engineering is important in the determination of perceived quality in use by the users of the system. Seemingly, the core of the Shawpno problem can be found in its usability and user experience which are the determinants of customer satisfaction and retention in the e-commerce market. Although the offline stores of Shawpno are performing well, the online

branch has not been as successful as it needs to be; this is mainly because of the flaws in its design and ignorance in being aware of the specifications in online grocery shopping. This leaves the company with a major competitive disparity in a market that is progressively becoming more digital in its shopping habits.

Because the validity of existing software products has been found wanting in satisfying the needs of the users, various extensive studies have been carried out under the usability term heading towards the more appropriate understanding and using measurement to encompass all valid phenomena within one framework or model. Despite its good brand name and a customer base, it is clear that without significant changes in the functionality of its online-based platform, Shawpno will keep being left behind by other players such as Pandamart and Chaldal who are easy to use and have smooth user interfaces. It is an urgent necessity to note down the particular usability problems that Shawpno faces, including the inability to navigate the app, interface, search, and the organization of delivery.

Mobile devices have low speed and unreliability in connectivity. This will affect the functionality of the mobile applications that make use of these features. Also, Shawpno might experience connectivity problems that impact the performance of the applications, especially when it comes to the users with the limited internet connectivity in rural regions. Such technical constraints also compound the usability issues as faced by users which makes it even harder to compete with faster and more reliable platforms as Shawpno does.

The mobile devices have a lower resolution than desktop computers and produce lower-quality images.[2] The app created by Shawpno might also experience lower image quality, which can adversely impact the visual attractiveness and convenience of navigation, particularly in such a market as grocery shopping, in which the visuals of the products matter. The ways of input that can be used on mobile devices vary with those of desktop computers and take some degree of skill.[6] Another potential issue that Shawpno will be grappling with is making its mobile interface as user-friendly as its desktop and in specific regards about its input methods, that is more likely to affect ease of use and user experience.

The paper will define and debate these usability concerns by assessing an online platform of Shawpno compared to the online presence of their major competitors, Pandamart and Chaldal. The research will aim at determining the exact hindrances to user satisfaction and interaction that is presently impeding Shawpno success in the e-grocery market. Furthermore, the study will be oriented towards the ways in which Shawpno can strengthen

its online presence, improve its user interface (UI), and simplify the process of shopping to compete with the market leaders in the e-grocery sector in Bangladesh.

1.4 Research Questions

1. What are the main problems with usability that make people unhappy with Shawpno's online platform?
2. How does the user experience on Pandamart compare to Chaldal and Shawpno in terms of how easy it is to use, how satisfied users are, and how engaged they are?
3. What makes people more likely to use Pandamart and Chaldal than Shawpno?
4. What specific changes can be made to Shawpno's online platform to make it easier to use and more enjoyable for users?

1.5 Research Scopes

This paper seeks to test the usability of top three online grocery stores in Bangladesh namely: Pandamart, Chaldal, and Shawpno by determining the ease with which the users can navigate and utilize the online stores as well as how the online stores can be enhanced to support their customers. Online grocery shopping is rapidly popular in Bangladesh, and having the knowledge of the user experience and the usability issues that these services have is gaining more and more value. To evaluate the ease of use and general user experience of these platforms the study will make use of the System Usability Scale (SUS) which is a well-known instrument in determining how easy the system is to use. Through the use of this measure, the research will determine the effectiveness, efficiency, satisfaction, learnability, and memorability of the three platforms.[9]

An important component of this study will entail gathering of feedbacks done on 160-170 respondents who will be a diverse sample in terms of the demographic backgrounds. Such subjects will provide information regarding their experience with Pandamart, Chaldal, Shawpno based on their level of user satisfaction, efficiency, ease of use and system performance. In particular, the research will be limited to the speed at which users can accomplish their tasks, satisfaction with the functionality of the platform, favorableness to learn how to use the platform, and favourableness to recall how to undertake tasks on these platforms after leave of absence.[3]

The paper shall initially examine the usability of each platform as it is. Shawpno that has not been finding its way in the online grocery sector despite its robustness in the offline business will be under scrutiny to ascertain the problem of usability. These are problems like bad navigation, slow system in checkout systems as well as inconsistency in delivery services that adversely affect the satisfaction of users. Conversely, those that are viewed as more user-friendly and successful in the digital environment such as Pandamart and Chaldal will be evaluated in order to see what is making them more effective and what needs to be done to improve its performance. This analysis will involve the analysis of their design of the UI, their search features and overall user flow.

The paper will evaluate the effectiveness, efficiency and satisfaction of every platform. Effectiveness is the extent to which the users can perform tasks on the platform successfully, including searching and ordering groceries. Efficiency deals with the speed with which users can complete such tasks and minimum effort, whereas satisfaction deals with the general contentment of users with the platform, such as ease of use and aesthetic considerations of the interface.

Also, the learning process will be a critical factor in the study, as well as memorability. Learnability is the ease of learning in the shortest time possible to familiarize with navigation inside the platform and accomplish typical tasks, e.g., product search, adding items to the cart, and checkout. The memorability will analyze the level at which users still remember how to use the platform when they resume their use on the platform after some non-use time. Provided that these metrics can be refined, not only the user experience will be increased, but the user retention rates and the frequency of using these platforms will go up.[1][4]

Concerning the recommendations, the study will recommend a number of measures that Shawpno can adopt in order to improve its online presence and usability. It will involve streamlining its UI/UX, navigation, search feature, checkout, and make delivery services more consistent and more reliable.[2][1] In the case of Pandamart and Chaldal both platforms are considered to be more successful, although, there are ways to improve the usability of such services, it should be refined in the areas of search algorithms, visualization of products, as well as better organization of the checkout process to shorten the time of task completion. Finally, this study will offer an understanding of how Shawpno, the traditional grocery store that is already entering the sphere of e-commerce, will be able to address its usability issues and rise to rivalry with other more successful digital stores. With the usability increased in each dimension (effectiveness, efficiency, satisfaction, learnability, memorability) Shawpno has the opportunity to provide a smoother and more intuitive online procuring experience

and appeal to a larger number of users helping them increase their online presence. Furthermore, the results of this study may also be useful to other conventional retailers in Bangladesh who are willing to create or enhance their online stores in the marketplace that is becoming more digital.

It aims to give back to the growing E-commerce business in Bangladesh by providing practical recommendations that will enable the conventional stores like Shawpno to upgrade their online platform, increase customer satisfaction, and compete better with other market giants like Pandamart and Chaldal.[10]

1.6 Overview of the Online Grocery Market in Bangladesh and the Rationale for Selecting These Platforms

The online grocery market in Bangladesh has seen a prosperous growth and Pandamart, Chaldal, Shawpno, Meena Bazar and Agora have become one of the most important sites in this category. The top three leading platforms are: Pandamart, Chaldal and Shawpno that are providing a wide variety of groceries and services that can satisfy the rising trend of online shopping. Pandamart is a quick-commerce-based corporation founded in 2020 and has since become famous due to its effective delivery through dark stores. It has a 4.0 rating and 100M+ downloads in the Google Play Store.

Chaldal is one of the most popular e-grocery websites that was established in 2013 in Bangladesh. Chaldal has a 4.7 rating and has been downloaded 1M+ times because of its high product range and reliable delivery. Chaldal also won as the Best E-commerce Company in the 2020 Digital World and in the COVID-19 crisis period.

Shawpno is a company based in Bangladesh with the biggest offline customer base, which struggles to establish its presence in the online realm. The online platform of Shawpno has 4.5 rating and 500K+ downloads on the Play Store. Shawpno fails to do the same online because of usability issues despite the success that it has been offline.

Another player that is worthy of attention is Meena Bazar that was opened in 2002 and provides an online shopping experience with a grocery area where people can shop using a mobile app that has a rating of 2.9 and has been downloaded 100K+ times on the Play Store. Agora, established in 2001, is the last company to be mentioned, and it is also developing its digital presence. The platform of Agora, agorasuperstores.com, has not only grocery but also electronics and clothing. The app is rated 4.2 and has 10K+ downloads and is on its way to increase its online grocery market.

Pandamart, Chaldal, and Shawpno are the three most favoured and commonly used online grocery stores in Bangladesh and this is why they have been chosen in this study. These sites have attained high success in the market with Pandamart and Chaldal being the top in user interaction and satisfaction. On the other hand, Shawpno is an interesting case because it is having problems moving its dominant offline market to the online market. This work is an attempt to discuss the problem of usability Shawpno experiences, compare its performance with Pandamart and Chaldal, and suggest the strategies aimed at enhancing the online appearance of Shawpno.

In my future studies, I will be expanding this study to Meena Bazar and Agora. Though Meena Bazar and Agora are relatively new to the online grocery business, they are expanding fast, and their experiences can be helpful in understanding the difficulties of the traditional grocery stores when they move online. [11]Having done this thesis, I will explore the usability and customer experience issues of Meena Bazar and Agora to add to the better perception of how offline grocery stores can improve their online services and compete with the market leaders.

CHAPTER 2

LITERATURE REVIEW

2.1 Background

The emergence of e-commerce and online shopping in the recent years has revolutionized a retailing scenario, with online grocery stores having massive penetration in the international market. Following the rising trend in the use of smart phones, faster internet connectivity, and a change in the shopping preferences, online shopping has become part of our daily lives. The fact that people do their shopping at home, and the increasing need to use time saving strategies, has made e-commerce websites, namely grocery web sites, the core of modern day retailing.

Online grocery is a booming industry in Bangladesh, and websites such as Pandamart and Chaldal are already ranked as the market share and user base leaders. The growing need towards the use of digital solutions has been exploited by these platforms through provision of a wider range of products, fair prices, delivery to homes and easy-to-use interfaces. [2] Nonetheless, even with their massive success, conventional grocery chains such as Shawpno that have a well-established presence in the traditional offline market have been unable to transfer their success into the online context.

Although Shawpno has a good brand loyalty and has a large number of offline users, the online platform has struggled with many issues on attracting and retaining users. These difficulties are reflected in various forms, which include slowness of the websites, cluttered interface, and complicated navigation. Consequently, the online platform of Shawpno is not the most satisfied in terms of user satisfaction, as well as engagement, especially in contrast with the smooth and user-friendly experiences offered by such platforms as Pandamart and Chaldal. [12]

Online platform usability is a key element that defines whether such will be a successful platform since it directly influences the experience of the user, their interaction, and consequently, their willingness to keep using that platform. In this context, usability is defined as the level of attaining goals by the users in the most effective and efficient way possible on the platform. These also involve the ease at which the users navigate through the site, location of products, making purchases, and having a gratifying overall experience. Its platform efficiency (especially) is the most important. The easier to accomplish a task with fewer efforts, shorter time and yet remain understandable the platforms have greater chances to attain higher user satisfaction. [8] Likewise, the success of an online grocery market

platform in the competitive market depends on its effectiveness which is achieved by delivering the appropriate products, features, and services to the user.

One of the most important measurements of user experience includes the satisfaction which determines user retention and platform loyalty. An easy user will result in a repeat customer who will refer to others, which will help gain more brand awareness and market share. In the case of sites such as Pandamart and Chaldal, their emphasis on the need to deliver a quick, smooth and interactive experience has resulted in high customer satisfaction, which has strengthened their market leadership.[13]

Conversely, the platform by Shawpno experiences a number of problems including delayed loading times, non-intuitive user interface and an ineffective user experience. These usability shortcomings make users unable to accomplish tasks swiftly and effortlessly and this will ultimately result into frustration and poor engagement. According to the literature, issues such as bad design of the user interface, slow loading time, complicated navigation, and a lack of payment services may significantly affect the customer satisfaction (Rahman and Ahmed, 2021). The fact that the user-centered design was not given significant attention and the checkout process was highly inefficient makes the platform of Shawpno less efficient and engaging than its more successful competitors.[12]

The study will be used to fill the gaps in the online platform provided by Shawpno by considering the problem of usability using a comparative analysis of Shawpno with Pandamart and Chaldal. This research will address the following areas of the Shawpno platform development through emphasizing on the efficiency, effectiveness, and satisfaction of such platforms. This is aimed at coming up with practical suggestions on how the user experience of Shawpno can be improved so that it can be competitive in its ever growing digitalized online grocery shopping setting in Bangladesh.

2.2 User Experience

User experience is very important for the success of digital platforms. Especially in the e-commerce industry Like grocery shop. The quality of the user experience has a big factor on how happy users are using this app, how much they easily use the platform, and how successful its complete. For this reason, understanding and improving the user experience has become a main part of designing. Peter Morville (2004) claim that the working efficiency of an application is mostly determined by three factors : User, Context, Content. Users are directly involve with the application, Content is the main feature or goal that pulled user in and Context is the program layout and design.

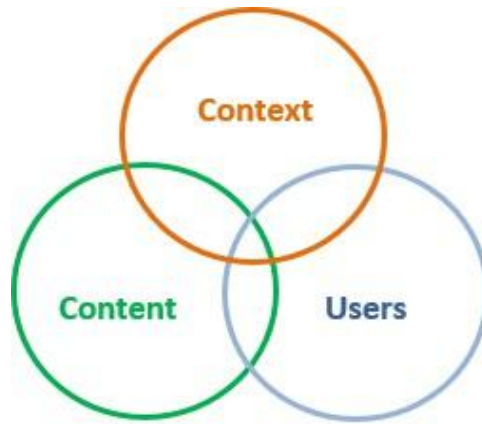


Figure-1: Three circle of user

Using Morville's User Experience Honeycomb model, which lists seven aspects of User experience like —Useful, Usable, Desirable, Findable, Accessible, Credible, and Engaging. This section looks at the most important parts of User Experience.[7]

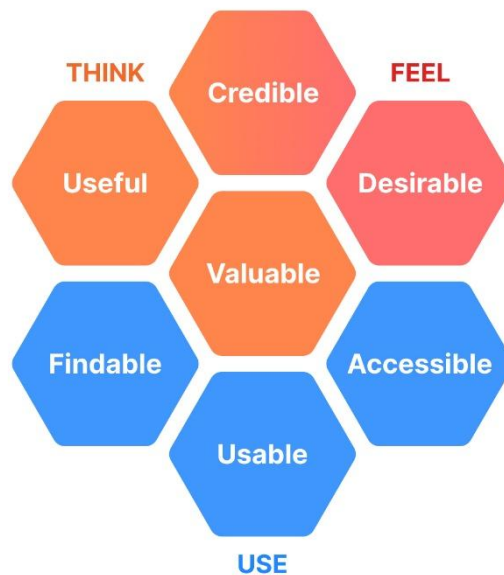


Figure-2: The Honeycomb Model

2.2.1 Useful: In online grocery shopping, usefulness means to how well the platform meets users' needs by providing a wide range of products, easy delivery services, and good prices. The literature shows that a useful platform not only meets user expectations but also make shopping easier and more valueable offering convenience, variety, and accessibility. Pandamart and Chaldal good example of online grocery shop .They provide large variety of grocery items along with helpful customer service. These platforms provide the high

demand for online shopping by offering competitive prices and timely delivery services, making them highly useful to consumers .[10] On the otherhand Shawpno, through very sucessful in offline grocery market, but in online they faces significant challenges in offering a comparable range of products and services, leading to lower levels of usefulness as perceived by users .

2.2.2 Usable: The most crucial aspect of User Experience is probably usability which is the degree to which a user can complete their objectives on a platform easily. System Usability Scale (SUS) is a tool that is often used in the studies related to usability and can be used to evaluate how easy and satisfied users are with a digital platform. The usability ratings have been high, as the studies have shown that Pandamart has smooth interface, mobile-responsive, and the shopping experience is smooth. Chaldal is also good in usability as it has a streamlined interface with optimised mobile experience.[14] Conversely, Shawpno is criticized to have a complicated interface, inability to load websites quickly and difficult navigation which are serious barriers to usability. Such usability problems influence the convenience of navigation in the products, add to the cart, and finalize the transactions, which eventually impact the user experience in a negative way.

2.2.3 Desirable: Desirability is about the emotional attraction of the platform which may be determined by the visual design, aesthetics, and branding of the platform. An attractive platform should be attractive and make its users have a positive emotional experience. The clean design, modern and user friendly design of Pandamart is widely appreciated and this adds value to its marketability. Although Chaldal also has an appealing interface, it does not have so much focus on emotional design elements. In their turn, Shawpno has been subjected to critique on outdated design and cluttered interface that have a detrimental effect on its desirability (Harrison et al., 2013). The interface must be attractively and professionally designed so as to instill confidence in the users and enhance the possibility of their continued interaction with the application and this is where desirability comes in as one of the elements of user experience.[12]

2.2.4 Findable: Findability is the ease with which the users can find and get their way around the content they are seeking on the platform. Good search, well-structured category, and clear navigation are some of the important elements of findability. Pandamart and Chaldal are good in this point and have well organized categories, sophisticated filters to search and transparent description of products allowing the users to access what they need within a short period. Shawpno, in its turn, has some problems with categorizing products and search, so

the user cannot easily find the product and becomes frustrated and leaves his/her shopping cart without making purchases.[9]

2.2.5 Accessible: The concept of accessibility describes how user-friendly is the platform in the eyes of an individual having different abilities, and including people with visual impairments or other disabilities.[8] Web Content Accessibility Guidelines are the guidelines which offer the framework of making digital platforms accessible to everyone. Whereas Pandamart and Chaldal are comparatively moderate, particularly via mobile applications, the Shawpno platform has been observed to lack adequate accessibility capabilities, including support with screen readers and text-to-speech capabilities. Availability of online grocery platform is not only an issue of inclusivity but is also an important issue in accessing a broader audience including the disabled.

2.2.6 Credible : Credibility is vital towards developing trust and confidence among the users. Customers will prefer to deal and buy products under platforms that they have faith in. The trustworthiness of an online grocery system may be established by transparent policies, stability of payment system, reviews of users, and customer service. Pandamart and Chaldal have been able to establish credibility due to the availability of safe and secure payment options, clear-cut policies, and easily available customer service. Shawpno has been facing difficulties with establishing trust on its online site because it has no reviews, no consistency in the product information, and no active customer advice options .[1]

2.2.7 Valuable: Lastly, engagement is used to describe the level of interest that a platform maintains and promotes the use of a platform. An engaging platform is interactive, provides tailored suggestions, and creates a feeling of engagement with the services by means of promotions, rewards, or loyalty programs. Pandamart is strong when it comes to providing a compelling experience, in that it provides personalized shopping recommendations on what the user would want or what they have already bought. Chaldal also offers a certain degree of interaction with the help of promotions, whereas Shawpno does not offer any engagement and personalized content, which reduces the level of user interaction .[1]

2.3 Usability

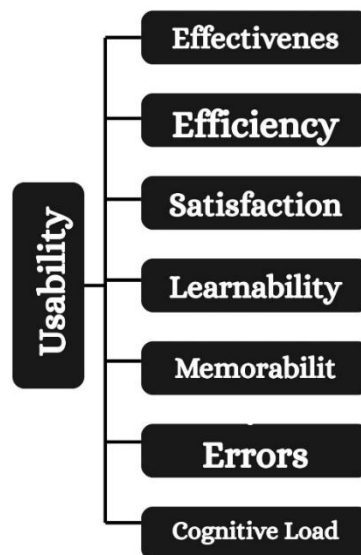


Figure -3: PACMAD Model

Usability is one of the key considerations of the success of any digital platform, in particular, online grocery shopping. Usability also makes sure that the users achieve their goals efficiently, effectively, and being highly satisfied. This part analyzes the usability of the online grocery websites through the PACMAD usability model that deals with the unique needs of mobile applications and takes into account a variety of usability features that are necessary when assessing user interfaces.[15]

Several factors that are crucial to usability have been identified in PACMAD model; User, Task, and Context of Use. The following seven main usability attributes are added to these (Effectiveness, Efficiency, Satisfaction, Learnability, Memorability, Errors, and Cognitive Load) (Harrison et al., 2013). In the case of online grocery stores, these characteristics can be used to determine the level of interaction of users with the platform, the ease of use, and the level of satisfaction with the experience.[5][15]

2.3.1 Effectiveness

Effectiveness is the precision and minimum lack of any features that allow users to reach the desired objectives on the platform. The most efficient platform will allow the users to complete tasks without frustration and even guarantee that their needs will be addressed with minimum efforts. Pandamart is a very useful platform and the users have stated that the site is very successful in the completion of their tasks like searching their products, carting and

checkout. Chaldal is also quite a decent experience to use, but its search filters on products fail the users occasionally. On the other hand, the platform of Shawpno has received criticism because of inefficiency in completing tasks, especially because of the navigation problem and unreliable availability of products, which lowers the effectiveness scores.[15]

2.3.2 Efficiency

Efficiency is a metric that is used to gauge the amount of resources used by the users in comparison with the accuracy and completeness of the task they complete. These generally involve time to finish a task, actions which are necessary, and the ease of interactions. Pandamart is efficient, and its streams are designed in such a way that one can easily navigate the products and buy them. The design of the platform has been optimized in such a way that activities such as adding items to the cart and making payments are easy to do. Chaldal is also effective, sometimes there is delay on the check out process because of slow load time during the peak time. However, Shawpno lacks efficiency, and the platform has many more operations to do simple tasks, including product search and check out that can save time and make the user frustrated.[15]

2.3.3 Satisfaction

Satisfaction indicates the overall pleasure and the comfort that the user has during his/her interactions with the platform. It includes the feelings related to the usage of the platform and the perceived comfort of doing the work. Pandamart is a system that offers high user satisfaction as it offers excellent, user friendly and easy navigation shopping experience that is both fast and easy to use. The user satisfaction is also high in Chaldal, but some users complain about frustration caused by slow downs in the site occasionally. The user satisfaction of Shawpno is also significantly lower as the users frequently complain about the design that is outdated, the time lag in responding, and the inconvenience of locating particular products.[15]

2.3.4 Learnability

Learnability is how easy the platform is to learn, mostly determined by the duration of time the user is educated to use it, normally assessed by the ability to navigate the platform and achieve important tasks. The learnability of Pandamart is also high because a user can learn the layout and features of Pandamart very quickly due to the intuitive design of the webpage. Chaldal is also easy to learn, although there are new users who might take more time to familiarize themselves with its product categorization system. However, Shawpno has issues with learnability, which is complicated by its complicated interface and clear product categories, which makes exploring the platform and locating what you need very hard.[15]

2.3.5 Memorability

Memorability measures the ability of the users to maintain the capacity of using the platform even after using it not for some time. A catchy platform enables the users to come back and continue their work without the need to learn how to operate it once again. Pandamart has been very memorable because users can quickly remember how to use the platform once they have not used it after a long time. Chaldal has a high score in the area of memorability, but users also complain of forgetting the location of certain categories or filters. The memorability of Shawpno is also very low because the users may easily forget how to carry out their task because of non-intuitive nature of the interface as well as lack of organization in the design.[15]

2.3.6 Errors

Errors are defined as the errors made by users when using the platform and how the ease of recovery of such errors. A platform that has minimal number of errors gives the user a smooth experience in which they are not making a lot of errors and easily correct them. [15]Pandamart has a limited number of mistakes, and the users have minimal reports of problems when using the platform. The error rate is also low on Chaldal, but some users complain of confusion every now and then when carrying out the checkout. At Shawpno, the number of errors made by users is higher, as they frequently experience problems choosing the wrong product because of the lack of clear description or going to the wrong page because of the complicated design and become frustrated.

2.3.7 Cognitive Load

Cognitive Load is the cognitive load to utilize the platform. The cognitive load may be too high to be acceptable to the users and thus it reduces the experience and conversely, lower cognitive load maximizes usability.[15] Pandamart simplifies the mindset required to achieve the required performance through providing simple instructions, ease of navigation, and fast performance of tasks. The cognitive load of Chaldal is also rather low, but some of its aspects, like search results filtering, can be simplified. Shawpno does add load to cognition by forcing the user to work around a cluttered and unintuitive interface; causing more mental strain and user fatigue.

2.4 Summary of Literature Review.

The literature review draws the parallels between the usability and user experience (UX) of three most popular online grocery websites in Bangladesh: Pandamart, Chaldal, and Shawpno in the context of the PACMAD usability model and the Honeycomb User Experience. The above analysis is based on the main features of performance such as effectiveness, efficiency, satisfaction, findability, cognitive load, learnability and memorability, and errors to assess the performance of the platforms.[13]

Pandamart and Chaldal are market leaders, being superior in terms of usability where they have user-friendly interfaces and effective flows of operations. Pandamart has the most impressive SUS scores, which provides the end user with an ideal experience in terms of short load times, low cognitive load, and appropriate navigation.[9] Chaldal is also performing well except that it sometimes tends to have delays during rush hours. Both platforms are very effective and satisfy their customers with a variety of products, timely delivery and quality services, which results in the high satisfaction of the users.

Shawpno, however, is struggling with major usability issues that makes the online grocery store ineffective in the market. Delays in loading, lack of navigation and incompetence in carrying out tasks add to the cognitive load that ensures that users can hardly locate products and finalize purchases within a short time. [5]The platform has poor learnability and memorability as its design and interface are cluttered and confused, which results in constant mistakes and frustrations to the user. Such usability problems lead to reduced user satisfaction and reduced engagement than Pandamart and chaldal.

The SUS results of usability testing reveal that Pandamart and Chaldal offer better user experience and usability, whereas Shawpno is at a disadvantage because of the flaws in the design of its platform. To be more competitive in the emerging online grocery market, Shawpno requires major improvements in the navigation, loading speed, and general usability that would make it easier to satisfy the users.[3]

Finally, Pandamart and Chaldal are good in usability as they provide highly effective, efficient, and pleasant user experiences. However, Shawpno needs to undergo a significant reinstatement of its online platform to ensure that it overcomes its usability related difficulties and enhance their functionality in the online grocery market.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Quantitative Research

Quantitative research is one type of collecting, processing and analysing numerical data in a systematic manner to determine patterns, measure variables and arrive at objective results. This technique involves the use of numbers to indicate data and hence is easy to determine averages, compare outcomes and also observe relationship among variables in a simple and systematic manner. The use of quantitative research studies is usually applied to usability studies and user experience testing because it focuses on the measurable results.

This thesis involves the use of the quantitative research methodology to evaluate the usability of three online grocery websites in Bangladesh namely: Pandamart, Chaldal, and Shwapno, based on the System Usability Scale (SUS). The SUS questionnaire provides us with numbers depending on the way users respond to the question, which allows calculating a general usability score of every platform.[12] Such numbers will assist in determining the ease of use of the platforms, the user satisfaction and the satisfaction of the systems to satisfy their needs.

Quantitative research typically involves a high number of similar people as the people of interest. The information about surveys in this research was obtained with the help of the respondents of different ages and educational levels. The structured questionnaires provided consistency in the data gathering process and the results were subsequently analysed through mathematical equations in order to calculate the SUS scores. The technique ensures that the outcomes are just and allows you to directly compare the usability ratings of the three platforms.[6]

Quantitative research is frequently used in software engineering, usability testing and human computer interaction research because it enables making decisions in a statistical manner and gives high quality evidence on identifying problems in the system. By using this method, the study ensures the usability findings of Pandamart, Chaldal, and Shwapno are the correct, replicate, and consistent findings with the accepted evaluation standards.

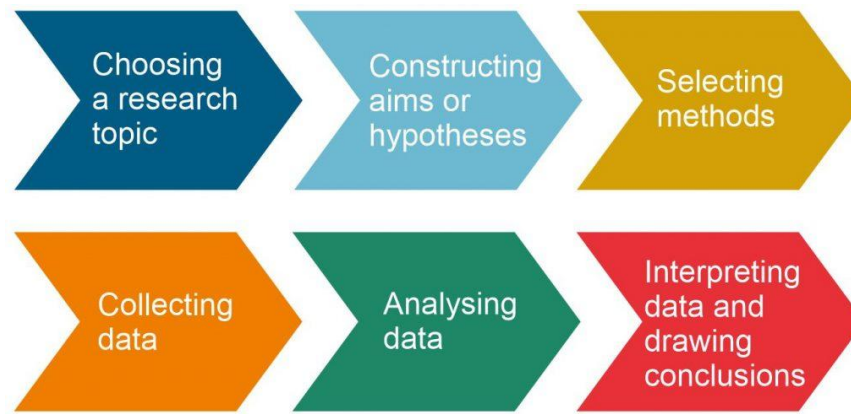


Figure -4: The research process Model

3.2 Advantage of Quantitative Research

In analysing the usability data, quantitative research has a few advantages. These include:

1. Gives information that is representative of the whole population.
2. Big sizes enhance the validity of the findings and enable generalisation.
3. Indicates a variety of user behaviours.[3]
4. It is easy to compare the responses of different users in order to find out trends and patterns.
5. Produces numerical outputs.
6. The data may be translated into the scores, averages and percentages to be easily interpreted.
7. Permits group statistical comparison.
8. Pandamart, Chaldal, and Shwapno can be compared in terms of their usability scores.
9. Reduces researcher bias.
10. Surveys such as structured questionnaires such as SUS are consistent and reduce human judgment.
11. Responds to evident questions about its usability.[7]
12. Helps find out the number of users who consider the system as easy, difficult or confusing.
13. Provides a systematic and organised data gathering.[7]
14. Standardised tools will ensure uniformity among the participants.
15. Favors evidence based decision making.
16. The numerical outcomes inform the system improvement based on the real user feedback.

3.3 The Survey Method

One of the most common methods of data collection in quantitative research is the use of surveys and this method is primarily used when the research aims to get the perceptions of users and when the research aims to establish usability problems. The method of a survey was applied in the given research to obtain structured feedback about the experiences of the respondents with three in web-based grocery stores- **Pandamart, Chaldal, and Shwapno**. The research question was clearly set in order to establish before formulating the survey to ensure the responses that were collected were pertinent to the objectives of the study.

The System Usability Scale (SUS) questionnaire was chosen as the most important questionnaire to be used in measuring usability. The questionnaire applied in the SUS consists of ten items, and the Likert scale adopted five points to describe the degree of agreement or disagreement of different usability statements of users. The approach is popular due to the clear and straightforward method of measuring the usability of systems based on different digital platforms in the most reliable and standardised manner.

The questionnaire was sent to the participants who frequently use the services of online grocery stores. The participants represented various age groups, levels of education and backgrounds of users to make sure that the dataset was representative of a diverse range of user experiences. A pilot test that involved few users was carried out before carrying out the main survey to ensure that questions were understandable and the answers to the questions made sense. The participants were requested to utilize the three sites, namely, Pandamart, Chaldal, and Shwapno, either on mobile applications or on websites as they find it out of their choice. Having encountered the platforms, the participants filled in the SUS questionnaire, which involved rating it according to their personal experience.

After data collection was over, analysis was performed by means of collecting the responses into a dataset. The data provided by the SUS questionnaire was in numerical form to derive individual and mean usability ratings of individual platforms. This was compared to find out the usability problems, general satisfaction of the user, and the strengths or the weaknesses of each online grocery platform.

Timestamp	Gender	Age	Area you from	Which online Grocery shop you like to visit?	Profession	1. I like to use this system frequently.	2. I find this system
10/21/2025 22:54:37	Female	23- 26 years	Utara	Pandamart	Student	Strongly agree	Strongly disagree
10/22/2025 0:35:18	Male	18- 22 years	Farmgate	Pandamart	Student	Strongly agree	Neutral
10/22/2025 04:7:05	Female	32- 36 years	Mipur	Pandamart	Teacher	Agree	Agree
10/25/2025 13:06:55	Male	23- 26 years	Mipur	Chaldal	Student	Agree	Agree
10/25/2025 13:07:55	Male	23- 26 years	Mipur	Pandamart	Student	Agree	Agree
10/25/2025 13:16:09	Male	23- 26 years	Utara	Chaldal	Student	Agree	Agree
10/25/2025 13:12:22	Male	23- 26 years	Dharmondi	Chaldal	Student	Neutral	Disagree
10/25/2025 13:13:35	Male	23- 26 years	Mipur	Pandamart	Student	Neutral	Neutral
10/31/2025 21:47:19	Female	18- 22 years	Mipur	Chaldal	Student	Neutral	Neutral
10/31/2025 22:23:00	Female	32- 36 years	Dharmondi	Pandamart	Banker	Strongly agree	Disagree
10/31/2025 22:33:24	Male	Above	Badda	Pandamart	Business	Strongly agree	Agree
10/31/2025 23:10:12	Male	27- 31 years	Yes	Pandamart	Teacher	Strongly agree	Agree
10/31/2025 23:25:41	Male	27- 31 years	Mipur	Pandamart	Government employee	Agree	Agree
11/1/2025 13:28:21	Male	27- 31 years	outside dhaka	Pandamart	teacher	Agree	Neutral
11/1/2025 14:06:24	Male	23- 26 years	Masumoni	Chaldal	Student	Agree	Disagree

Figure -5: Survey data sample

Which online	Profession	1. Upanda	2. Upanda	3. Upanda	4. Upanda	5. Upanda	6. Upanda	7. Upanda	8. Upanda	9. Upanda	10. Upanda	1. Uchaldal	2.
Pandamart	Student	5	1	5	1	5	1	5	1	5	1	4	
Pandamart	student	4	2	4	1	5	2	3	2	4	1	3	
Shwapno	Student	3	3	4	4	3	3	4	4	4	4	3	
Pandamart	Student	5	1	5	1	5	2	5	1	5	1	4	
Pandamart	Student	5	1	5	1	5	1	5	1	5	1	4	
Pandamart	Housewife	5	1	5	1	5	1	5	1	5	1	4	
Pandamart	Student	5	2	5	1	4	2	4	2	5	2	4	
Pandamart	Teacher	4	2	4	4	4	2	3	3	4	4	4	
Pandamart	Job	4	3	4	4	4	2	4	4	4	4	4	
Shwapno	Student	3	3	3	3	3	3	3	3	3	3	4	
Shwapno	Counsellor	4	4	4	2	3	2	4	4	4	4	4	
Shwapno	Bangladesh Army	4	4	5	5	5	5	5	5	5	5	5	
Shwapno	Student	3	3	4	4	4	3	4	4	4	4	3	

Figure -6: Survey data sample

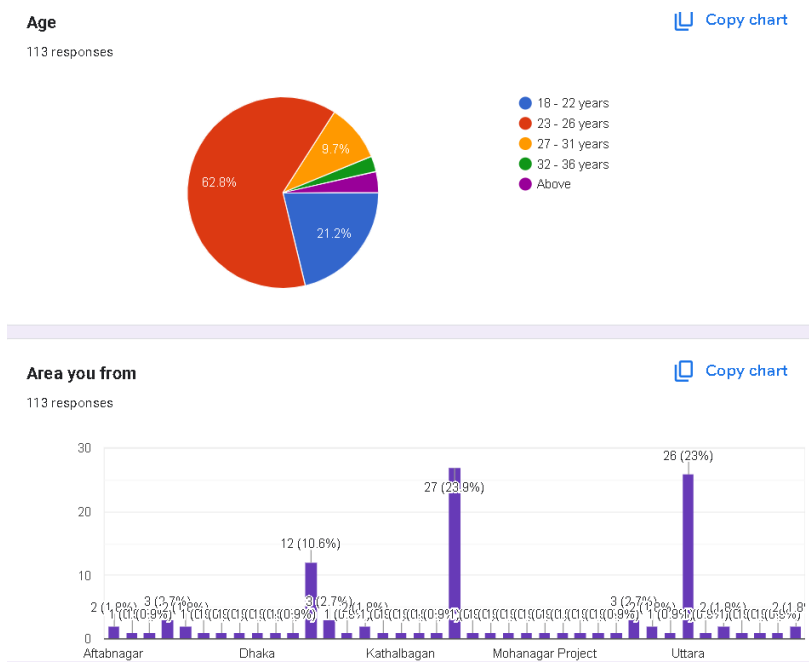


Figure -7: Survey data sample

3.4 Data Pre-processing System

Within the context of usability evaluation, pre-processing of data is a crucial step, which guarantees the correct organisation, cleaning, and preparation of the collected survey data to be able to calculate it correctly. Because the present work involves the System Usability Scale (SUS) as the main tool of assessing the usability, the pre-processing phase is significant as it involves the conversion of the raw user data into the numerical form and meaningful number.

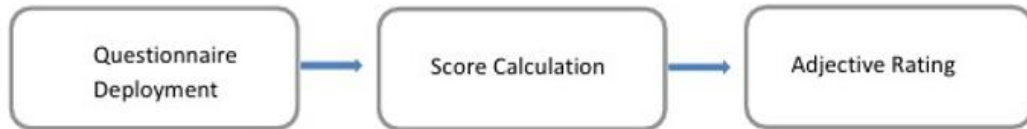


Figure -8: SUS workflow activity.

3.4.1 System Usability Score Model

The System Usability Scale (SUS) consists of 10 questions, each rated using a 5-point Likert scale. Tables 1 and 2 present the SUS scoring scale and the corresponding questionnaire items.

Table-1: Likert scale

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Table-2: SUS Questionnaires

NO.	Detailed Questionnaire
01	I like to use this system frequently.
02	I find this system to be more complicated than it should be.
03	I think the system is simple and easy to use.
04	I need technical support to use this system.
05	I find the system functioning smoothly and is well-integrated.
06	I think there are a lot of irregularities in the system.
07	I think most people can learn this system quickly.
08	I find this system to be time-consuming.
09	I feel confident while using this system.
10	I think there are a lot of things to learn before I can start using this system.

A1. Score Calculation

Step 1: In the SUS questionnaires, every answer is given a number from 1 to 5:

- Strongly Disagree = **1**
- Disagree = **2**
- Neutral = **3**
- Agree = **4**
- Strongly Agree = **5**

Step 2: Calculate X and Y

The SUS survey's 10 questions are divided into odd-numbered and even-numbered question for calculation purpose.

X = Subtract the sum of all points of odd-number positive questions by -1.

Y = Subtract the sum of all points of even number negative question by -5.

Step 3: Calculate the SUS Score

The final SUS score can find using this formula: $SUS\ Score = (X + Y) * 2.5 / \text{Total number of dataset}$.

A2. Adjective Rating

Table -3: SUS Rating table

SUS Score	Grade	Adjective Rating
>80.2	A	Excellent
68 – 80.2	B	Good
67	C	Average
51 - 66	D	Poor
<51	F	Awful

If a product's System Usability Scale (SUS) score is higher than 80, it is called "Excellent," which is the highest adjective rating. "Good" means scores between 68 and 80. The average SUS score is 67, which is pretty normal. A score between 51 and 66 means "poor," and a score below 51 means "awful."

3.5 Data Visualizations

Data visualization is an important part of the analysis process because it helps to collect survey data in a clear and understandable way. After gathering the SUS responses and demographic information from user, there are create different type of visual charts. it created to highlight trends related to age, gender, and education, area, profession etc. These visualizations help to findout which participate in the study and how different user groups interact with online grocery platforms in Bangladesh.

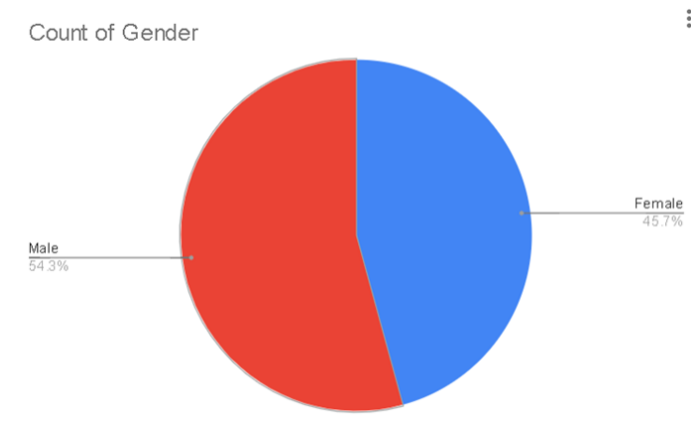


Figure -9: Gender Ratio

There are two categories of gender, as seen in Figure 9. In this thesis, there are both male and female participants. According to the figure, 54.3% male, while 44.7% of all users are women.

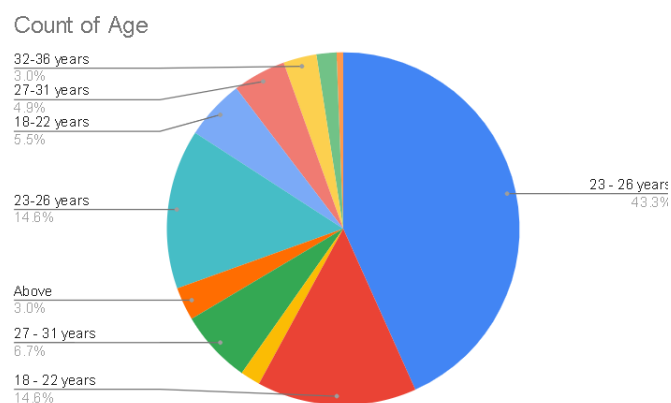


Figure-10: Age Ratio

The usability evaluation of online grocery shop is separated into five age groups, as is observed in Figure 10. 23-26 years people utilize online grocery shop mostly. We located the actual contribution of 150 of the 170 testers who went through in this thesis. The percentages regarding age groups are 18 -22 years, 23-26 years, 27-31 years, 32-36 years and above.

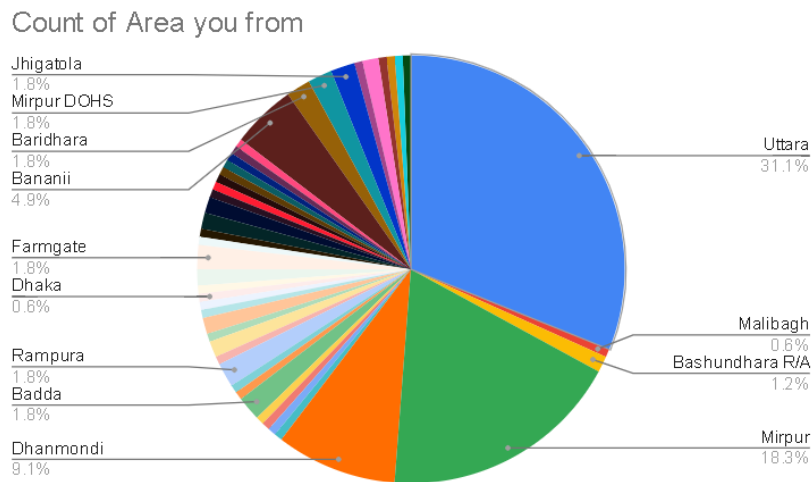


Figure-11: Area Ratio

The pie chart indicates the proportion of the residential areas of the respondents within Dhaka. The sample is dominated by Uttara (31.1%), meaning the fact that almost one-third of all the participants are there. Mirpur comes second with 18.3 to comprise the second-largest area. Others like Dhanmondi (9.1%), Banani (4.9%), and Bashundhara R/A (1.2%) are in relatively lower proportions, with a large number of neighbourhoods under 2% of the respondents such as Farmgate, Rampura, Badda, Baridhara, and Mirpur DOHS.

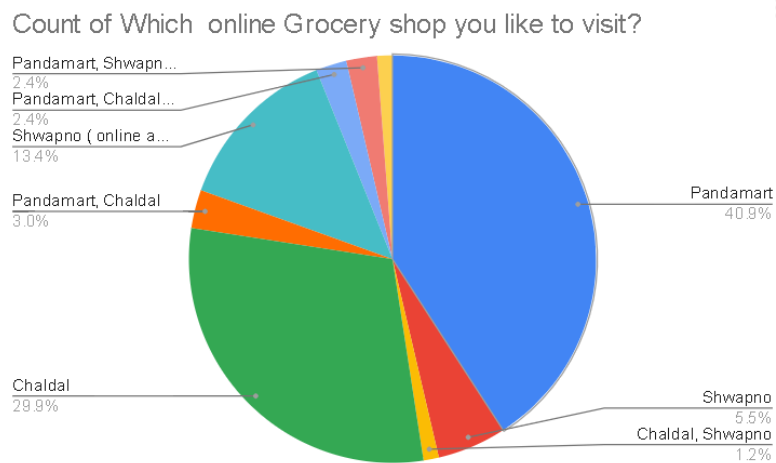


Figure-12: Grocery shop Ratio.

The pie chart indicates an easy understanding that among the respondents, as far as online grocery platforms are concerned. The online grocery shop that is most demanded among the sample is pandamart with 40.9, which shows that it is the first one. The next ones with large user base are Chaldal with 29.9%. Shwapno is at 5.5% and such

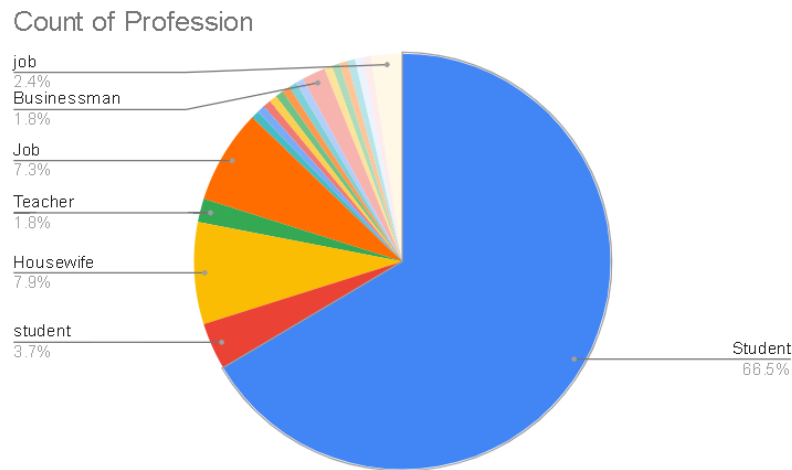


Figure-13: Profession Ratio

It is also indicated in the pie chart that the largest number of respondents is students (66.5%), which means that the sample of the survey is predominantly youth-based. The next highest proportions are 7.9% of housewives and 1.8% of teachers, and 1.8% of businessmen make up smaller proportions of the sample.

3.6 Demographic Information

We have covered all the demographic information figure 9,10,11,12,13.

Table-4: Demographic Information

Gender :	Female
Age :	25 years
Area :	Uttara
Which online grocery shop do you like to visit :	Pandamart
Profession :	Student

3.7 Usability Calculation for Pandamart

After collecting SUS survey data, we get some value.

Here calculation for 165 datasets:

Number of Datasets = 165

X = Sum of total even number

Y = Sum of total odd number

Now, calculate the X and Y values:

$$\begin{aligned} \text{SUS Score of Pandamart} &= \{(X + Y) * 2.5\} / 165\} \\ &= 61.61 \end{aligned}$$

$$\text{Average Score} = 61.61$$

3.8 Usability Calculation for Chaldal

After collecting SUS survey data, we get some value.

Here calculation for 165 datasets:

Number of Datasets = 165

X = Sum of total even numbered

Y = Sum of total odd numbered

Now, calculate the X and Y values

$$\begin{aligned}\text{SUS Score of Chaldal} &= \{(X + Y) * 2.5\} / 165\} \\ &= 50.33\end{aligned}$$

$$\text{Average Score} = 50.33$$

3.9 Usability Calculation for Shwapno

After collecting SUS survey data, we get some value.

Here calculation for 165 datasets:

Number of Datasets = 165

X = Sum of total even numbered

Y = Sum of total odd numbered

Now, calculate the X and Y values:

$$\begin{aligned}\text{SUS Score of Chaldal} &= \{(X + Y) * 2.5\} / 165\} \\ &= 48.44\end{aligned}$$

$$\text{Average Score} = 48.44$$

The opinion of the users or customers is more critical during evaluation of the outcome of the services. By analyzing the user comments or opinions, we can know how our product meets the needs of customers and what they want of our service. Moreover, we can also determine how we can improve our service and make our product easier to use should the consumer not need it.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Result and discussion

The success of online platforms particularly those dealing with e-commerce and online grocery services entirely depends on usability. An effective and convenient platform has the potential to greatly improve the user experience and increase customer satisfaction and the level of engagement. On the contrary, bad usability may result in frustrated customers, high rates of abandonment, and adverse brand images.[4]

This was a research carried out to test the usability of three popular online grocery systems in Bangladesh namely Pandamart, Chaldal and Shawpno using the system usability scale (SUS). The SUS is a well-known instrument of evaluating the usability of software applications and digital platforms, which is grounded on the answers of the users to a series of ten standard questions. The last SUS score gives an idea of the general usability with a high score indicating a friendlier interface.[4]

This section aims at giving and analysing SUS scores of these platforms using data gathered on 165 survey respondents. Through the analysis of these scores, this section will seek to deliver an insight on the strength and weakness of each platform providing a better insight on how usability influences user satisfaction and encouragement.

From Table-3:

SUS Score	Grade	Adjective Rating
>80.2	A	Excellent
68 – 80.2	B	Good
67	C	Average
51 - 66	D	Poor
<51	F	Awful

Table 4: SUS score for all application with highest, lowest, and average SUS score

Applications	Highest Score	Lowest Score	Avg. Score of 100 data	Grade
Pandamart	100	40	61.61	D
Chaldal	87.5	7.5	50.33	F
Shawpno	72.75	0	48.54	F

The SUS score of Pandamart is the highest compared to the other two websites at 61.61. This means that the experience on Pandamart is relatively usable. SUS benchmarks indicate that a score of above 68 is above average. Although the score of 61.61 does not exceed this threshold of usability, it is rather moderate in the context of Pandamart. The relatively high score indicates that Pandamart interface is well developed with a good navigational system, which is easy to work with with minimum engagement of the mind.

Chaldal is the follower of Pandamart with an SUS score of 50.33. This score indicates that usability of Chaldal is somehow low in comparison to Pandamart and its user interface can be inefficient or contain some problems that make it less intuitive or harder to navigate. A SUS score of less than 60 is usually a sign that users are likely to experience more problems of usability, including slow loading time, cumbersome navigation or ambiguous instructions. Chaldal needs to concentrate on the performance optimization and improvement of the user interface to make the platform more user-friendly and efficient, which may also increase its general user satisfaction.

Shawpno scores lowest in SUS at 48.44 which implies that it contains serious usability problems. This mark indicates that there might be critical design errors on the platform of Shawpno, including a bad design of navigation, slow load time, and non-intuitive tasks. This low score is a potential source of frustration in users and it can increase the rate of abandonment.

Shawpno should be enhanced significantly in design, performance optimization and user experience to make it more useful. A special emphasis on the streamline of navigation, cognitive load, and performance concerns would contribute to the increase of the SUS score and user retention.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This paper is a critical evaluation of usability of three prominent web-based online grocery stores in Bangladesh: Pandamart, Chaldal and Shawpno based on the System Usability Scale (SUS) as the main instrument of assessment. The findings also indicate that there is a lot of difference in user experience and usability, which directly affect the user satisfaction, engagement and eventually the competitive position of these platforms in the emerging online grocery market.

Pandamart was found to be the most usability-conducive platform having moderate SUS of 61.61, which means that it has a fairly good user experience, but it can be improved, especially in such aspects as the efficiency of navigation and performance optimization. Improving these points, Pandamart will have a better opportunity to become one of the leading platforms, which will guarantee more users and retention.

Chaldal is rated at 50.33 which is moderate usability, and lower than pandamart. Some of the challenges that the platform experiences include occasional delays in performance and inability to find products, which has adversely affected the efficiency and user satisfaction of the site. The proposed solution of adding more search options, more speed in loading them, a more convenient design would go a long way in making it easier to use and increasing the user experience.

Conversely, the SUS score of Shawpno of 48.44 indicates the worst of usability issues. Although Shawpno has a solid offline presence, it has found it hard to apply its offline performance to the online platform because of a messy interface, low performance, and ineffective navigation. Nevertheless, through some considered interventions such as total redesigning of the user interface, optimal performance of the platform, and better online marketing strategies, Shawpno could become easier to use and customer satisfaction, which would lead to more customer interactions and competitiveness in the online grocery market. Finally, the conclusions drawn in this paper emphasize the need to focus on user-centric design, efficiency and performance optimization in order to make online groceries a successful tool. Pandamart, Chaldal, and Shawpno can serve the needs of their users more effectively and improve their marketability and guarantee their success in a more competitive digital market by constantly measuring usability and making relevant data-driven improvements.

The research will bring meaningful contribution to the field of usability studies of e-commerce especially in the setting of the Bangladeshi online grocery market. Future megaboosting of this research may venture into user feedback, user long term engagement and changes in the technological platform, to give more insight on how to best utilize digital platforms to maximize user satisfaction and business expansion.

Such conclusion will be a conclusion of the findings of the SUS analysis, connecting the main findings and providing a prospective view of the improvements that can be made to improve usability and user satisfaction. It also preconditions the further investigation and the effective implementation in the sphere of online grocery shopping. Please notify me in case you want additional modifications.

5.2 Recommendation for future

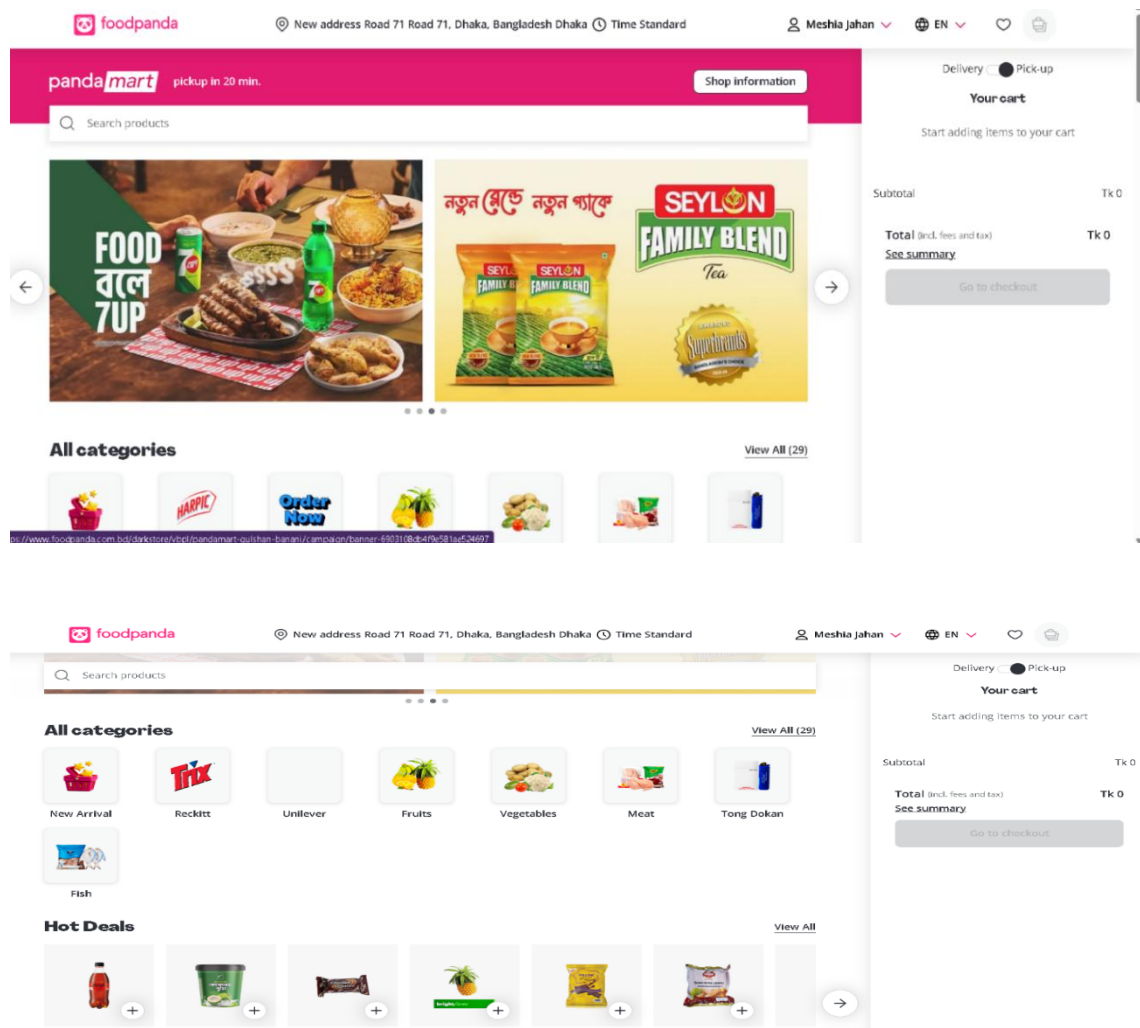


Figure-14: Interface of Pandamart

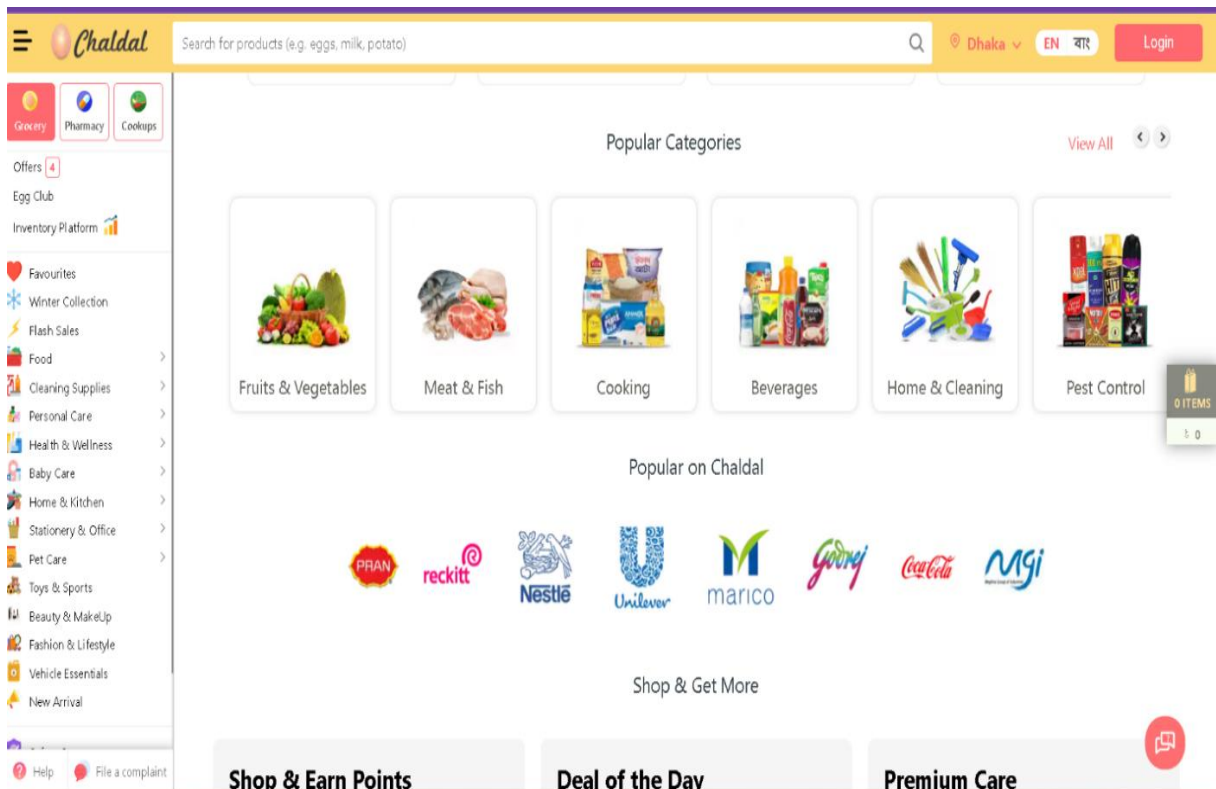
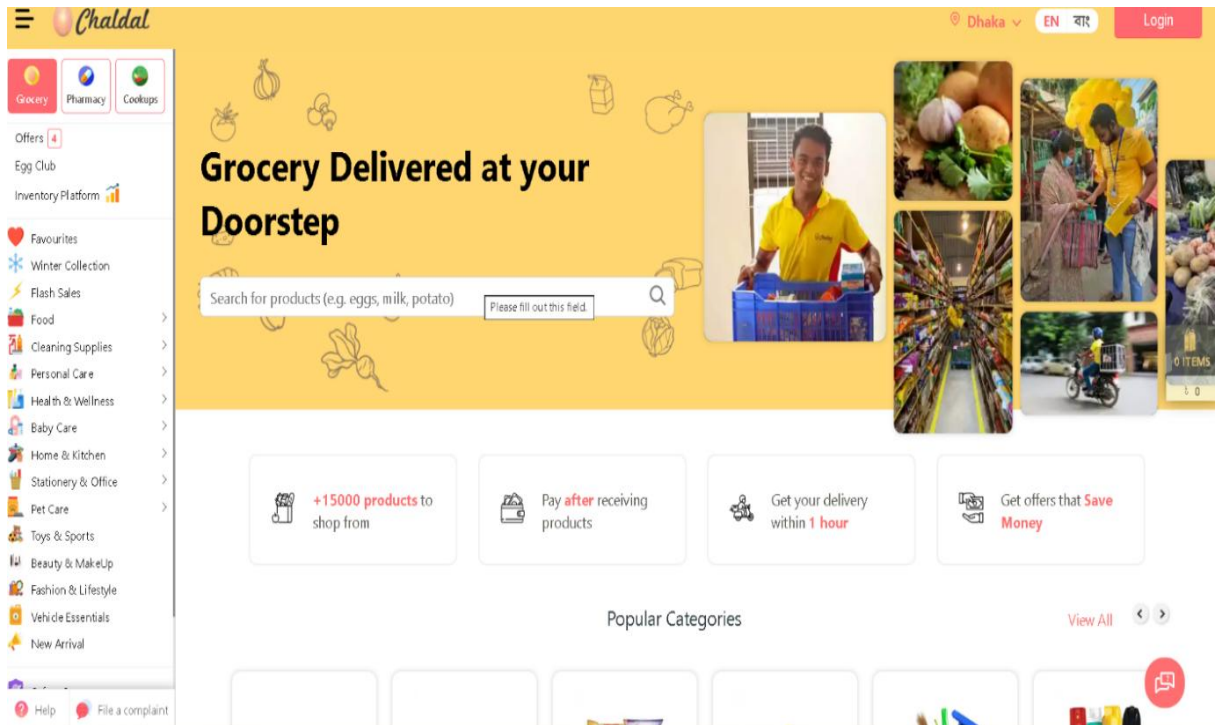


Figure-15: Interface of Chaldal

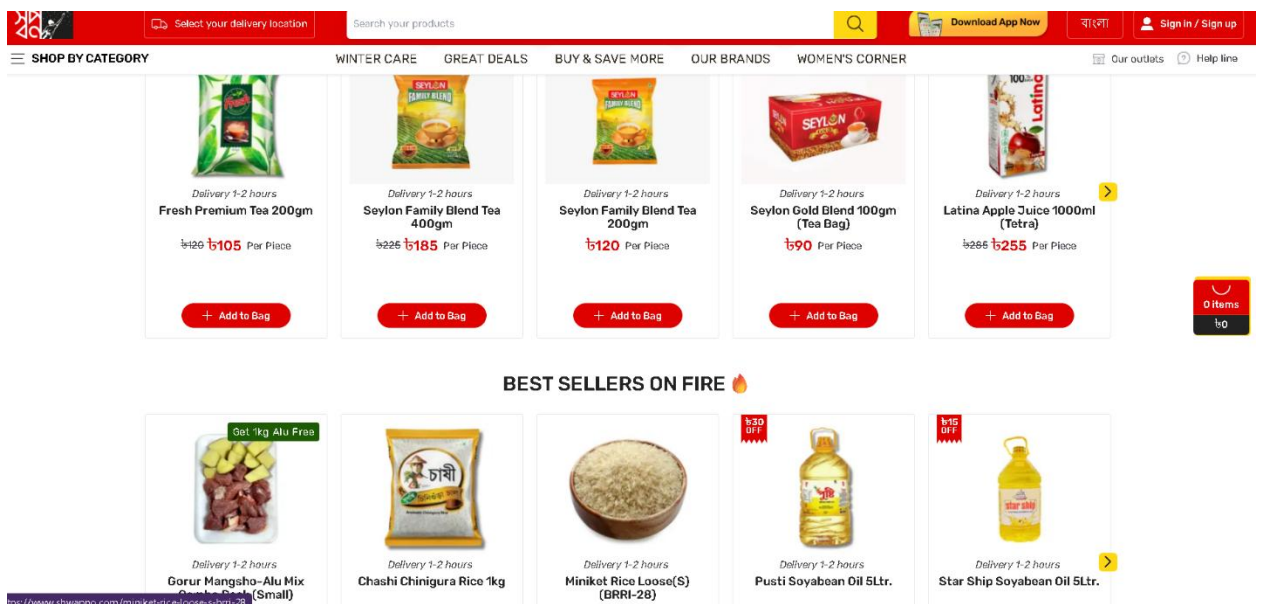
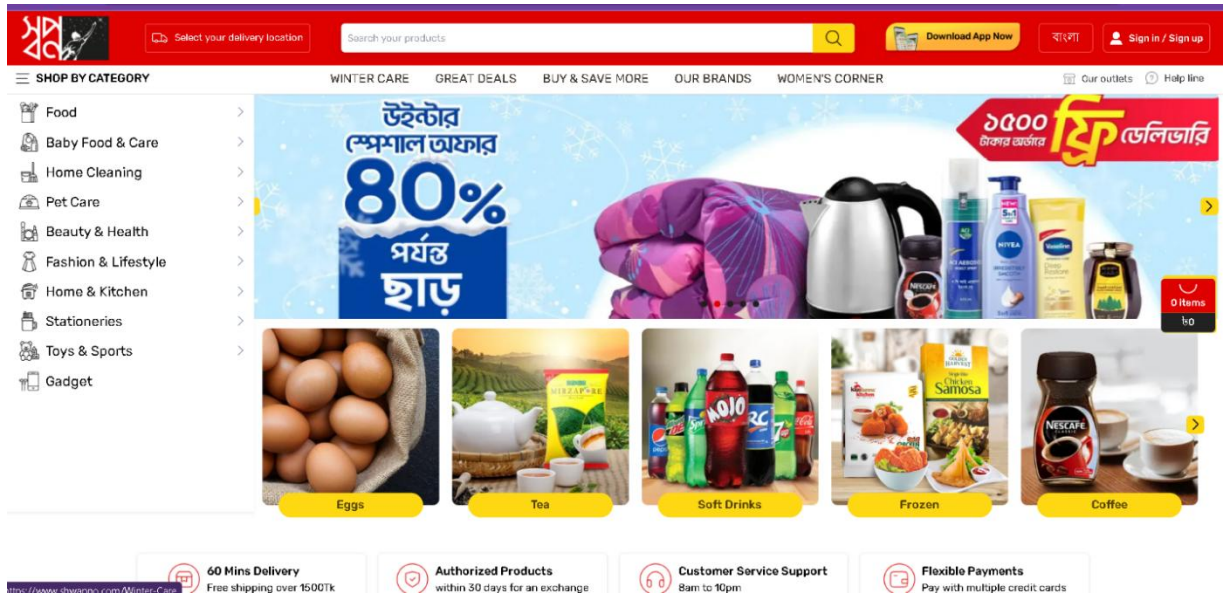


Figure-16: Interface of Shawpno

As Pandamart and Chaldal form some of the most popular online grocery stores in Bangladesh, the SUS scores demonstrate the lack of satisfaction among users, which is quite low. The two platforms continue to experience usability issues that have to be resolved despite their large user base in order to enhance the general user experience on the sites. The moderate scores of SUS (61.61 in the case of Pandamart and 50.33 in the case of Chaldal) indicate that something can be done to improve the usability and satisfaction of users.

The Morville Honeybook and the PACMAD Usability Model demonstrate that there are some major aspects that ought to be given priority in order to make these platforms more usable. Pandamart and Chaldal need to focus on efficiency, effectiveness, learnability, memorability and satisfaction improvement. Specifically, they ought to concentrate on better navigation of the site, easier task flows, and improve performance. The cognitive load will be decreased by simplifying navigation of the platform to enable users to perform their tasks more efficiently and with reduced efforts.

Moreover, that the findability of products can be enhanced by making the products better categorizable and searching, will assist the user in finding what they need in less time and fewer clicks. In the case of Pandamart, optimization of the speed of the site is essential especially at the peak times. Chaldal should consider the problem of delays in performance and some lag, which negatively affects the user experience at present.

With such areas in mind, Pandamart and Chaldal will be able to offer a more fulfilling and convenient experience and score higher in SUS and retain more customers. To make sure that the changes being done are within the needs and expectations of the users, it will be necessary to conduct regular usability testing and collect user feedback.

Although Shawpno enjoys a huge physical presence in its customers, it has been performing poorly in the online grocery market. Its low SUS score of 48.44 indicates that there are severe usability issues such as an overcrowded interface, bad navigation, slow speed, and unproductive flow of tasks. These are the problems which make Shawpno ineffective to provide the same user satisfaction as its competitors, although it is established in the offline market.

The PACMAD Usability Model and the Honeycomb Model would propose to redesign the Shawpno user interface altogether to make the company more practicable on the internet. Shawpno needs to focus on enhancing learnability, efficiency and memorability by making navigation simplified, cognitive load reduced and also the speed and responsiveness of the site. A more user-friendly layout will enable new users to learn the features of the platform within the shortest possible time, and easier categorization of the products will allow finding them without complications.

Besides enhancing the usability, Shawpno must use its success in the offline to achieve online success. Shawpno has failed to realize the same offline customer base in the online environment despite its strength in the offline sector. Shawpno can win more users to its online platform by intensifying its online marketing initiatives, including targeted advertising, social media promotions, and promotion deals. This will not only enhance the visibility, but also generate confidence among the already known customers of the brand in an offline environment.

Finally, Shawpno needs to work on the enhancement of its online marketing approaches so that users could be aware of its services and offerings. Through digital advertising and loyalty programs, Shawpno will be able to grow its interaction and attract more customers to shift their offline shopping to online shopping, which would promote better sales and customer satisfaction.

CHAPTER 6

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Appendix – A

Research Questions :

1. What are the main problems with usability that make people unhappy with Shawpno's online platform?
2. How does the user experience on Pandamart compare to Chaldal and Shawpno in terms of how easy it is to use, how satisfied users are, and how engaged they are?
3. What makes people more likely to use Pandamart and Chaldal than Shawpno?
4. What specific changes can be made to Shawpno's online platform to make it easier to use and more enjoyable for users?

Appendix – B

Data set :

Usability testing Online Grocery shop in Bangladesh. (Responses) ☆ ☰ ☰

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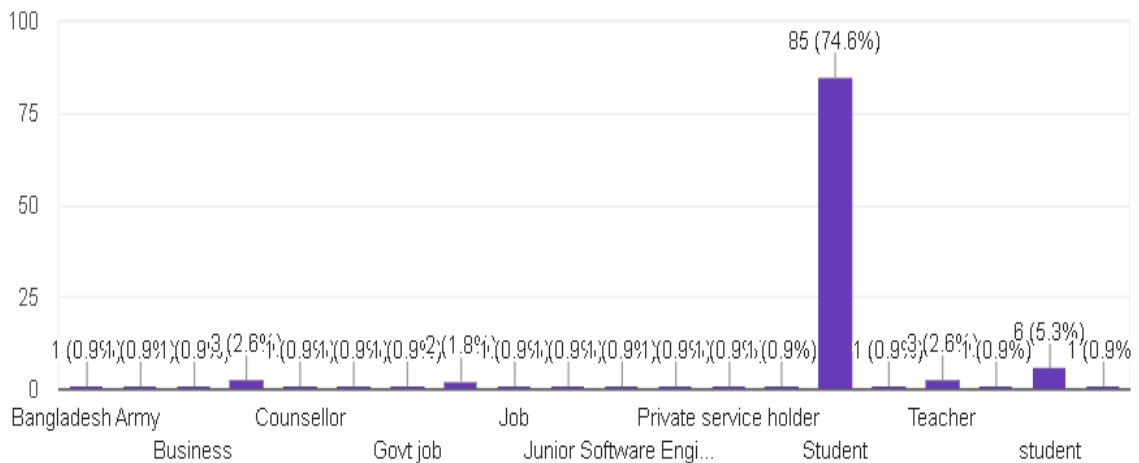
Form_Responses	Timestamp	Gender	Age	Area you from	Which online Grocery shop you like to visit?	Profession	1. I like to use this system frequently.	2. I find this system to
2	10/12/2025 1:57:48	Female	23-26 years	Utara	Pandamart	Student	Strongly agree	Strongly disagree
3	10/12/2025 1:58:23	Male	23-26 years	Malibagh	Pandamart	student	Agree	Disagree
4	10/12/2025 11:41:27	Male	23-26 years	Utara	Shwapno	Student	Neutral	Neutral
5	10/12/2025 20:08:37	Female	18-22 years	Bashundhara R/A	Pandamart	Student	Strongly agree	Strongly disagree
6	10/12/2025 20:23:55	Female	23-26 years	Utara	Pandamart	Student	Strongly agree	Strongly disagree
7	10/12/2025 20:28:52	Female	23-26 years	Utara	Pandamart	Student	Strongly agree	Strongly disagree
8	10/12/2025 20:29:16	Female	32-36 years	Mipur	Pandamart	Housewife	Strongly agree	Strongly disagree
9	10/12/2025 23:35:47	Female	23-26 years	Utara	Pandamart	Student	Strongly agree	Disagree
10	10/12/2025 23:35:50	Female	27-31 years	Utara	Pandamart	Teacher	Agree	Disagree
11	10/12/2025 23:44:33	Female	23-26 years	Utara	Pandamart	Job	Agree	Neutral
12	10/12/2025 23:56:43	Female	23-26 years	Dhanmondi	Shwapno	Student	Neutral	Neutral
13	10/12/2025 23:56:58	Female	27-31 years	Utara	Shwapno	Counsellor	Agree	Agree
14	10/13/2025 0:07:58	Male	23-26 years	Dhanmondi	Shwapno	Bangladesh Army	Agree	Agree
15	10/13/2025 0:16:28	Male	27-31 years	Kathalagan	Shwapno	Student	Neutral	Neutral
16	10/13/2025 0:27:28	Female	23-26 years	Mimir	Chakral Shwann	Student	Neutral	Disagree

Form Responses 1 Number value Responses 1

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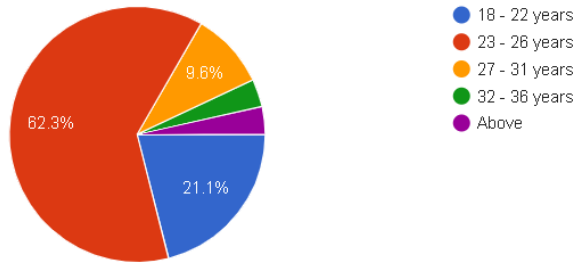
	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Which online	Profession	1.Upanda	2.Upanda	3.Upanda	4.Upanda	5.Upanda	6.Upanda	7.Upanda	8.Upanda	9.Upanda	10.Upanda	Raw SUS calculation	Final SUS Upanda
2	Pandamart	Student	5	1	5	1	5	1	5	1	5	1	40	
3	Pandamart	student	4	2	4	1	5	2	3	2	4	1	32	
4	Shwapno	Student	3	3	3	4	3	3	4	4	4	4	19	
5	Pandamart	Student	5	1	5	1	5	2	5	1	5	1	39	
6	Pandamart	Student	5	1	5	1	5	1	5	1	5	1	40	
7	Pandamart	Student	5	1	5	1	5	1	5	1	5	1	40	
8	Pandamart	Housewife	5	1	5	1	5	1	5	1	5	1	40	
9	Pandamart	Student	5	2	5	1	4	2	4	2	5	2	34	
10	Pandamart	Teacher	4	2	4	4	4	2	3	3	4	4	24	
11	Pandamart	Job	4	3	4	4	4	2	4	4	4	4	23	
12	Shwapno	Student	3	3	3	3	3	3	3	3	3	3	20	
13	Shwapno	Counsellor	4	4	4	2	3	2	4	4	4	4	23	
14	Shwapno	Bangladesh Army	4	4	5	5	5	5	5	5	5	5	20	
15	Shwapno	Student	3	3	4	4	4	3	4	4	4	4	21	
16	Chakral Shevann	Student	3	2	4	4	4	3	4	4	4	3	23	

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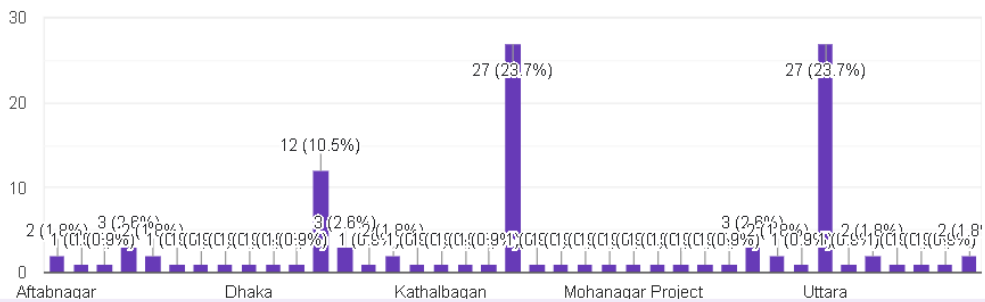
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APPENDIX-C

Applications	Highest Score	Lowest Score	Avg. Score of 100 data	Grade
Pandamart	100	40	61.61	D
Chaldal	87.5	7.5	50.33	F
Shawpno	72.75	0	48.54	F

The supplementary information presented in this appendix is the product of the System Usability Scale (SUS) rating of three online grocery applications in Bangladesh namely, Pandamart, Chaldal, and Shawpno. Overall, about 160-170 responses of the participants were gathered in the three platforms, which was sufficient to provide statistical strength to carry out comparative usability evaluation. Approximately one hundred valid responses were obtained to each application and the SUS scoring procedures such as item-wise transformations and total score calculations are recorded in the previous sections.

The findings of the research indicate that there is an apparent difference in usability performance. Pandamart was showing relatively better usability results with single SUS scores between 40 to 100 with an average of 61.61, which is equivalent to a D, in typical interpretation of SUS scores. However, Chaldal showed more widespread distributions of user experiences with a score ranging between 7.5 to 87.5 with an average of 50.33 which is an F-grade. Equally, Shawpno was in great inconsistency among users with a range of scores of 0 to 72.75 with an average of 48.54 as well as F-grade usability.

The results indicate that Pandamart is close to the acceptable usability level, and both Chaldal and Shawpno still can be discussed as the sphere of poor user experience in accordance with the SUS criteria. The huge range of highest and lowest scores in all three platforms is another indication that there is a great variation in the perceived usability and this is dependent on the interface design, complexity of navigation and familiarity by the user. The raw data, scoring sheets, and computational steps enclosed in this appendix provide the future researchers with transparency, replicability, and clarity of methods when studying usability patterns in online retail platforms.

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