



The Impact of Mobile Financial Service (MFS) on Consumer Behavior in Bangladesh

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ARTICLE INFO

Article History:

Received: 1st February 2023

Accepted: 28th February 2023

Keywords:

MFS,
Satisfaction,
Bias,
Unplanned buying,
Consumer behavior.

JEL Classification:

D11,
D12,
G20,
G41.

ABSTRACT

Purpose: The study's goal is to investigate the impact of mobile financial services on consumer behavior in Bangladesh so that MFS companies can focus on different factors that attract consumers to MFS and consumers can avoid having regrets later.

Methodology: Structural Equation Modeling with Regression Analysis was conducted based on 384 active MFS users collected through a survey. Data was collected through Kobo Toolbox, and analysis was made through the software R.

Findings: The study results showed that MFS satisfaction and bias influence consumer behavior by increasing unplanned purchases. Consumer satisfaction is provided by MFS preference and cost-effectiveness, whereas subjective norms and brand awareness create bias. Furthermore, this satisfaction and bias have a positive relationship with unplanned buying.

Practical Implications: This study offers some findings for MFS service provider companies about how they can hit the emotional responses of consumers to induce unplanned buying. The consumer can be able to achieve self-control to make a rational decision and not have post-purchasing regret.

Originality/Value: This research expands on earlier findings that overlooked incorporating both MFS satisfaction and bias as major determinants of unplanned buying. Also, the study of MFS regarding consumer behavior has not been seen in Bangladesh.

Limitations: The majority of respondents were between the ages of 18 and 24, and they were students. The result varies across diverse age groups and professions. Future studies can be conducted on unplanned buying intentions. The probability sampling technique may cause results to deviate in future research.

1. Introduction

In the 1990s, mobile phones were widespread in Bangladesh. Nobody thought it would change the concept of financial services and evolve into an influential medium for monetary transactions without going to the bank. Mobile banking has become a necessary part of people's day-to-day transactions after the emergence of the internet, though its acceptability was initially questioned. Rather than standing in a long bank line, one can transfer money with a few clicks on a mobile phone. MFS is famous worldwide, contributing to the country's economy, and it is assumed to have a bright future (Maria, 2022).

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Mobile Financial Service is a branchless & paperless banking system combining traditional banking systems with wireless telecommunication technology to give instant & secured money transaction services to both banked & unbanked people more efficiently. People can use their mobile devices to see their financial information, access credit facilities, and conduct transactions. Previously, the term "mobile banking" referred only to customers with bank clients, but it now includes a broad range of digital banking mechanisms and different platforms (ATMs, POS terminals, etc.) (AFI, 2012).

Understanding consumer behavior is important because it helps people make better decisions about why they purchase certain products, how they use them, and predict the target market. People try to become rational in their actions but often remain irrational because different factors influence their decisions. However, the digital banking system is becoming so advanced day by day that it is now achieving the ability to impact consumer behavior. Unplanned buying is an inclusive side of consumer buying behavior. Different situational factors (money availability, time, number of people accompanied in shopping), price, and income can influence unplanned buying directly or indirectly. However, researchers continue to discover different aspects and factors that cause unplanned buying as it is an integral part of consumers' contemporary shopping behavior (Nandi, 2022).

MFS, the emerging cashless transaction mechanism, is changing people's behavior and making them behave irrationally through unplanned purchasing. There is a positive relationship between unplanned buying behavior, MFS satisfaction, and bias. Mobile financial services got popular in the name of Mobile Banking in Bangladesh. The respective bank agents enable these services after registering. It gives access to peoples' accounts and uses services 24/7 around the year. People can also register themselves by using a smartphone. Previously they needed a copy of the National Identification Card and a phone with a sim card. Nowadays, only a phone with a sim card is enough to register the services. Mobile account owners can withdraw and send money via any local agent without visiting any bank. They can escape any bank hassle and paper-works to do all kinds of transactions and savings from any remote area (Tabassam, 2020).

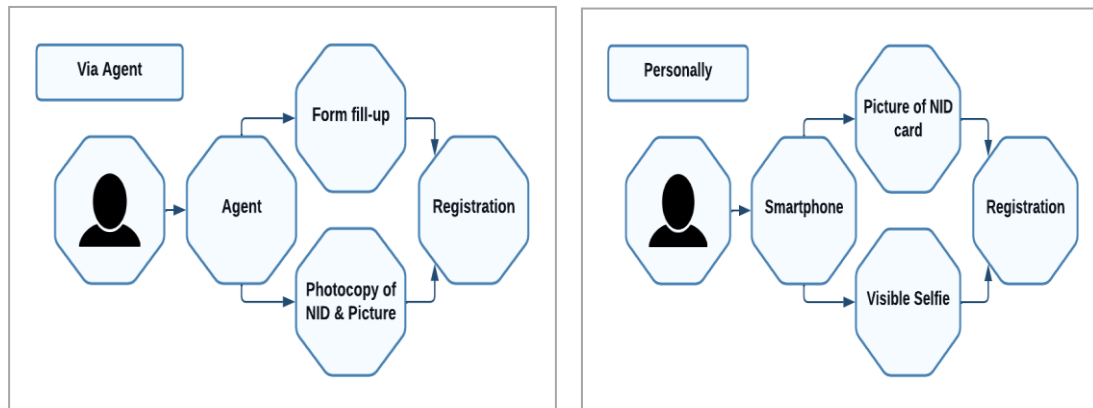


Figure 1
Registration Process of Mobile Banking.

MFS tries to give exact account statement, allows electronic confirmation for all transactions and debit & credit card management, and provides information on the current account statement, deposits, credits, and utility bill payments. The transactional limit is the only disadvantage rather than that it is protected enough to transfer money heedlessly unless someone has access to anyone's user name and secret code. Digital Banking and Mobile Banking have the same functionality, transaction

facilities, and accessibilities. And closely related though some distinct differences exist. Both allow a person to conduct financial work from outside a banking facility (Digibank, 2021).

In Bangladesh, Different banks mainly offer mobile financial services like bKash by BRAC Bank, Rocket by DBBL, MCash by IBBL, Sure-Cash by Rupali Bank, Upay by UCBL, TAP by Trust Bank & Axiata, Nagad by Bangladesh Post Office, etc.

Bangladesh Bank holds the right to withhold, suspend, and cancel the activity & approval of any MFS platforms if it finds any public interest loss. Also, Bangladesh Bank will take necessary steps to protect the legitimate interest of the account & stakeholders of MFS. MFS has to have a solid internal governance framework with a proper audit process for effective risk management and containment (Officials, 2012).

To provide the regulatory framework and services, Bangladesh Bank is maintaining BB order article 7A(C) (1972) and sections of the Bangladesh Payment & Settlement System Regulation (2014).³

Table 1

Services and Advantages of MFS

Services Permitted by Bangladesh Bank (officials, 2012)	Advantages of Mobile Financial Services (Tabassam, 2020)
International remittances transfer (Inward).	MFS created a new, faster, more innovative way for people to do all kinds of transactions.
Cash in and out services. It can be from agents, branch or others.	All MFS platforms provide services of cash deposit and withdrawal anytime and anywhere.
Individual to firm transactions like bill or merchant payments.	It gives wide-ranging money transaction facilities, including transferring money between mobile accounts, bank accounts, and debit cards.
Firm to individual transactions like salary transfer, dividend, profits, refund & vendor payments.	It provides interest on mobile financial balances like banks gives on deposits.
Government to individual transactions like allowance for elderly people, widow & freedom-fighter.	It lowers the transaction and time cost of the consumer.
Individual to govt. transactions like toll & tax payments.	It is more safe, secured and easier to handle than cash.
Individual to individual transactions like one account to another.	The charge is applied based on the number of transactions and money. No fixed yearly costs or initial deposits need like traditional banking, e-banking, and cards.
Other Payments like deposit, microfinance, insurance premiums, pension, overdraft facilities, etc.	Only a mobile network is enough to handle the account.

In the modern era, the banking industry is going through massive changes; among them, mobile banking is a unique & new one. Mobile Financial Services complements the global people, providing benefits to consumers and businessmen from various perspectives. Consumer behavior studies how consumers behave in different circumstances, an unknown concept in Bangladesh.

³ Regulatory Guidelines for Mobile Financial Services (MFS) in Bangladesh. <https://www.bb.org.bd/aboutus/draftguinotification/guideline/mfs>.

There is variation in the form of quality and work by various MFS, so it is necessary to know the nature, growth, and extent of MFS and their impact on consumer behavior. Furthermore, there is a lack of research on MFS in Bangladesh, which is why MFS has impacted consumer behavior. (Srinivasan et al., 2019)

Mobile Financial Service contributes to the national income, competitiveness, and growth of the economy of Bangladesh. Statista states that 91% (7.26 billion) of the total population owns a phone, whereas 83.32% own a smartphone. There are 5.07 billion internet users and 2.1967 billion online bank users worldwide. According to Bangladesh Bank, the number of registered customers of MFS stood at almost 12 crores at the end of January 2022. (Statista, 2022)

The fast development of the internet and mobile connectivity has led to an increase in mobile payment transactions, which might be the most popular cashless payment option, (Melissa Teoh, 2020) especially in developing countries. Consumers were prompted to switch to MFS as a contactless transaction method by the COVID-19 epidemic. (Yi Yong Lee et al, 2022). According to Bangladesh Bank, the average daily transaction through mobile banking is more than 1300 crores. 33% of the total population of BD is out of formal banking access or financial services, according to Mustafa K. Mukherji. MFS became the solution for the rural unbanked people and has brought five crores of unbanked people under financial service in a short period successfully (Tabassam, 2020). Though MFS is an immense gift to human society, it manipulates consumers to buy unplanned goods by giving satisfaction while using and creating bias in consumers' minds. A massive number of unplanned commodity purchases are happening. As people have more access to their money, they purchase more than they used to do with cash (Feinburg, 1986), and the velocity of money will be higher. That means higher money circulation in the economy (Ritzer, 1997), which may create a high degree of inflation. So, it is essential to know the impact of mobile financial services on consumer behavior and what made it change because consumer behavior affects the magnitude and essence of cashless banking transactions (Srinivasan et al., 2019).

The main objective of the study is to determine the impact of MFS on consumer behavior in Bangladesh. The research also wants to know the consumers' preferences towards MFS, how MFS is cost-effective, how MFS creates brand awareness and subjective norms among people, the relationship between preference, cost-effectiveness, and satisfaction of using MFS, the relationship between subjective norms, brand awareness, and bias, and the relationship between satisfaction, bias, and unplanned buying.

2. Literature Review

Yi Yong Lee, Tze Wei Liew, and Chin Lay Gan (2022), in their paper titled "Do E-wallets Trigger Impulse Purchases?" "An Analysis of Malaysian Gen-Y and Gen-Z Consumers" demonstrated the factors that influence consumers' E-wallet satisfaction and perceived enjoyment. Whether these factors influence their impulsive purchasing behavior or not. The paper revealed that subjective norms and perceived interactivity influence perceived enjoyment and satisfaction. Furthermore, perceived enjoyment significantly influenced impulsive purchases, while satisfaction had no effect. The researchers discovered that e-wallet users appreciated the procedure. As positive emotion encourages people to feel more freedom to act and reward themselves, this enjoyment triggers their unplanned purchase desire. (Yi Yong Lee et al, 2022)

Ummaha Hazra & Asad Priyo (2021), in their paper, "Mobile financial services in Bangladesh: Understanding the affordances," find that MFS has the ability to influence people by making service accessible. The study tried to uncover the underlying goal using the affordance theory for Bangladeshi MFS users. The author gathered information by conducting interviews with users, then used a conceptual analysis to uncover affordance embedded in users' daily social contexts. The MFS platforms provide a number of hidden benefits, including secrecy, confidentiality, self-control, mobility, and financial accessibility. MFS consumers

frequently struggle with making decisions. They need self-control, and MFS help them by allowing them to open a personal MFS account (Priyo, 2021).

Sachin Kumar (2019), Vice President of ITC Infotech, wrote an article about "What's Consumer Behavior Got to Do with Digital Banking?" Humans are not always rational if we think of it from a behavioral study side. Different cognitive biases can easily affect our decisions. These biases are our limitations of thinking, and people behave irrationally by leading people to judgment errors. Many solutions have arisen to improve consumers' decision-making ability to understand human biases better. Banking technology has become such a strong influencer that it can change consumers' needs and consumption patterns. Banks are now more interested in matching consumer behaviors and adopting behavioral science concepts (Kumar, 2019).

Dr. M. Srinivasan & Dr. S. Thameemul Ansari (2019), in their research paper titled "Impact of e-banking on consumer behavior: Investigative study into the users of e-banking services among new generation bank in Chennai city," showed the e-banking influence on consumer behavior. The objectives of this paper were to analyze the cost-effectiveness and satisfaction of consumers by observing the impact of e-banking on consumer behavior. Also, they want to see the consumers' preferences and the relationship between brand awareness and loyalty to e-banking. Discounts and offers are the most dominant factor for cost-effectiveness, attracting people most towards buying. Customers want more features for their satisfaction. (Srinivasan et al., 2019)

Md. Shahidur Rahman Khan and Monzur Mahmud Hossain (2015), in their paper titled "Measuring customers' preferences toward online Banking in Bangladesh: A study on the private commercial bank," showed consumers' motives behind using online banking, factors that affect customers' preferences, customers attitudes, and perceptiveness. The researchers draw a relationship between the changing factor and customers' preferences. The most important factors are confidentiality, reliability, required service, security, user-friendliness, and enjoyment. The main motive of the paper was customers' preferences for online banking in Bangladesh. As a result, they showed that on-time service mainly affects the customers' preferences for online banking. (Md. Shahidur Rahman Khan, 2015)

S. Sahayaselvi (2017) wrote an article titled "An Overview on Digital Payments" based in India. People use various types of digital payments in their day-to-day transactions. The Digital revolution happened, and people prefer cashless transactions more. Digital payments are easy and convenient to handle and provide suitable suggestions (Sahayaselvi, 2017). Anni Dasho Sharko and her associates wrote an article titled "Digital Banking the Wave of the Future" about the change in people's financial behavior due to digital banking. It is changing the business world by changing consumers' behavior and expectations. It changed the competition structure, and people agreed that digital banking is the future of transactions (Anni Dasho Sharko, 2017).

Mahmoud Abdel Hamid Saleh (2012) wrote "An investigation of the Relationship between Unplanned Buying and Post-Purchase Regret" to show the relationship between unplanned buying and post-purchase regret. The survey was conducted with convenience sampling in Saudi Arabia and showed positive relations between those variables. Card payment and sale promotions have a significant role in unplanned buying. Both customers and markets have to face the consequences of unplanned buying. Self-awareness can make people more rational in their future purchasing decisions (Saleh, 2012). Consumer spending increases because of bank-card (Feinburg, 1986). Regular card users Consumers spend more on purchasing than those who use cash (Ritzer, 1997). Cards are an easy tool for many consumers to use in purchasing.

Consumers still don't have a great deal of expertise about MFS. MFS was first implemented by Bangladesh Bank in 2011, and very few studies have been done on the topic since then. As a result, there has been no prior investigation of the connection between MFS and customer behavior. Other researchers had carried out similar kinds of studies, but their findings are not related to what the researchers sought to prove in this research. Most researchers work on showing consumer behavior

toward mobile financial services and the motives and attitudes behind using digital banking. Researchers talked about consumer satisfaction levels. They showed that some biases created by digital banking are the reason behind the change in consumer behavior. The study showed that bank-card induces consumers' expenditure. Mobile banking is relatively new to people and the latest branch of digital banking. It gives the consumers the same facility as the bank and is sometimes preferable to the bank. However, no study was found where the researchers talked about how the MFS leads to unplanned buying, how preference, cost-effectiveness, brand awareness, and subjective norms create satisfaction and bias while using MFS, and how the satisfaction and bias influenced consumers for unplanned buying. No research was conducted on consumers' opinions to see whether the factors apply to them. If people make unplanned buying because of mobile financial services, that can indicate that MFS impacts consumers' behaviors. The study will show how satisfaction and bias influenced unplanned buying and the validity of whether it is applicable to the people of Bangladesh or not.

3. Methodology

3.1 Data & Sample Collection

This research targeted Bangladeshi people aged over 18 as for registering to MFS, need a NID card (in Bangladesh, to get a NID card age should be at least 18) because the MFS application has age restriction. For the primary data collection survey, the study used a cross-sectional survey approach (both online and offline). The online questionnaire was shared with people through social media to collect data because recent statistics have proven that netizens spend their most time on social networking sites. The researchers used a non-probability purposive sampling technique in which they relied on their own observations and participants had to meet certain criteria. First, ask respondents if they are registered with at least one MFS platform. Only those respondents who answered affirmatively were asked to complete the survey. A sample size calculator was used to calculate the sample size when the population size was 180 million. 384 replies made up the study's final sample, which was used by the researchers. This means 384 or more measurements or surveys are needed to have a confidence level of 95% that the real value is within 5% of the measured value.

3.2 Analysis Methods

All constructed assessments were modified slightly from existing literature in order to maintain contextual consistency. A Structural Equation Modeling (SEM) is conducted because it can effectively describe how well a set of constructs predicts a dependent variable (Hair et al, 2011). SEM is very effective for investigations of human psychology and behavior. SEM is used to estimate latent variables, which are derived from other variables and may reveal the cause or effect of a model (Hair et al. J.J., 2014). As long as the assumptions are satisfied, an ANOVA can be regarded as valid; however, human psychology cannot be assumed. The fundamental premise of ANCOVA is that there are no differences across groups, which is its biggest drawback. Most other tests concentrate more on the explained variance, R^2 , which has less concentration. Most other test concentrate more on explained variance, R^2 where SEM has less concentration on R^2 . Frequency analysis (part of described analysis) is essential for interpreting any data at a glance and is very useful when the researcher wants to know people's positioning toward specific characteristics or opinions is used. Simple multiple regression analysis is conducted using R (a tool used for data analysis) to see how effectively a group of independent variables estimates a dependent variable. The purpose of this study is to look at how customers behave when using MFS and how different factors influence their unplanned buying decisions. Thus, SEM was deemed more appropriate for this study compared to ANOVA and ANCOVA.

4. S-O-R model

The social sciences help individuals analyze their own behavior and the reasons and motives underlying their decisions (Liberto, 2022). The stimulus organism response (SOR) model is used to see the connection between external factors that will affect people's emotions and the behavior people have

toward the external factors. ⁴The SOR is a standard process to know consumers' behavior toward MFS. Here the stimulus is a spur that pushes consumers' unplanned buying. The organism refers to the consumers' psychological states comprising thinking processes. Lastly, the third component of the model is the reaction refers to the urge to leave or enter a particular condition.

Preferences, cost-effectiveness, subjective standards, and brand awareness are all stimuli (inputs) in this study. Both satisfaction and bias are organisms that respond to stimuli. Unplanned purchasing is the response (reaction to the organism) here. S-O-R is one of the most appropriate models to examine consumers' unplanned buying behavior in any buying context (Hai-Ninh Do et al., 2020). It allows researchers to interpret different predictors and examine the influences of predictors on the users' emotional states and responses (Guihua Zhang et al., 2021). This study presents that preference & cost-effectiveness can arouse satisfaction, and subjective norm & brand awareness can arouse bias. Later, this satisfaction and bias will influence consumers' unplanned buying behavior. This study uses satisfaction, which uses experience to assess how satisfied consumers are with the MFS. All the summarized definitions of each factor are given in table-2 and the framework in the figure-2.

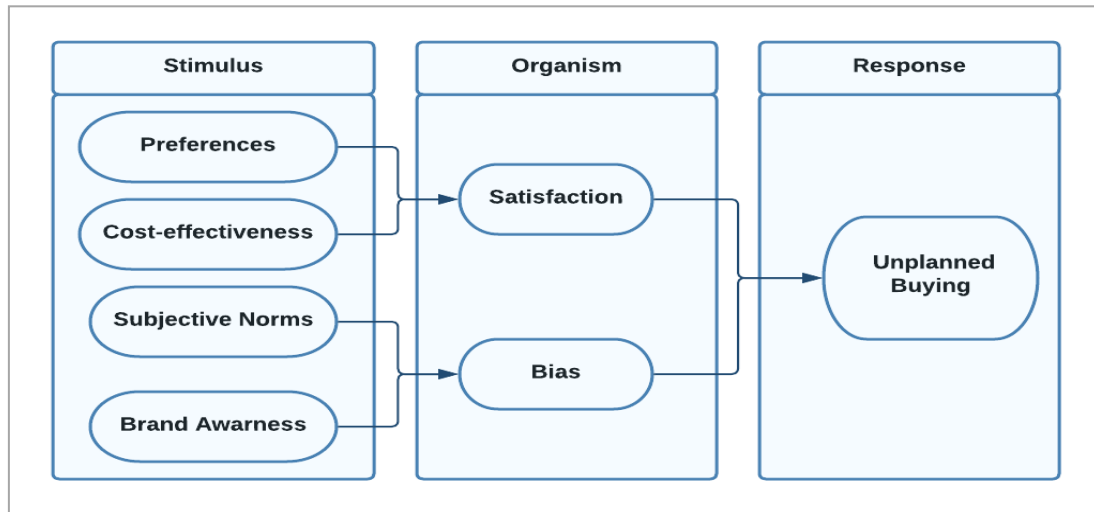


Figure 2
Framework of this Study.

Table 2
Definition Table

Indicator	Definition	References
Preference	Preference is consumers' criteria that they desire to have in a particular service.	(Times, 2022)
Cost-effectiveness	Cost-effectiveness is gaining more by diverting aids from ineffective to effective & less costly interventions.	(Dean T Jamison, 2006)
Subjective Norm	Subjective norm is social pressure (interpersonal influence and media influence) from the individual's surroundings regarding whether to perform certain behavior or not.	(Qian Liu, 2019)

⁴ Effects of mobile augmented reality apps on impulse buying behavior: An investigation in the tourism field. DOI:10.1016/j.heliyon.2020.e04667.

Brand Awareness	Brand awareness is the closeness of consumers to a particular service, which creates positive perceptions of that from its challenger.	(Kopp, 2022)
Satisfaction	Satisfaction is the psychological feeling that comes from the gap between the expectations and actual achievement.	(Natarajan, 2018)
Bias	Bias is the limitation in our thinking and is understood to be aberrations from expected criteria.	(Kumar, 2019)
Unplanned Buying	Unplanned buying is a purchasing activity without any recognized problem and previously formed buying intention.	(Monash, 2018)

Source: Authors Compilation

Preference positively influences consumers' perspective toward mobile financial service. It is the primary concern in MFS adoption. Different factors (like improved quality, usefulness, ease & convenience, low cost & free service, time-saving, security & confidentiality, reliability & user-friendliness, feedback, organizing programs to honor loyal customers, and others) influence consumers' preferences and attract them towards MFS (figure-3) (Hai-Ninh Do et al., 2020). The volume of transactions raised by this as they find MFS more preferred than others. As preference is consumers' desired criteria about any service (Times, 2022), it gives them satisfaction and enjoyment. In shopping, preference and satisfaction can play a significant role in determining consumers' behavior (Srinivasan et al., 2019). Earlier studies have established a significant relationship between preference and satisfaction.

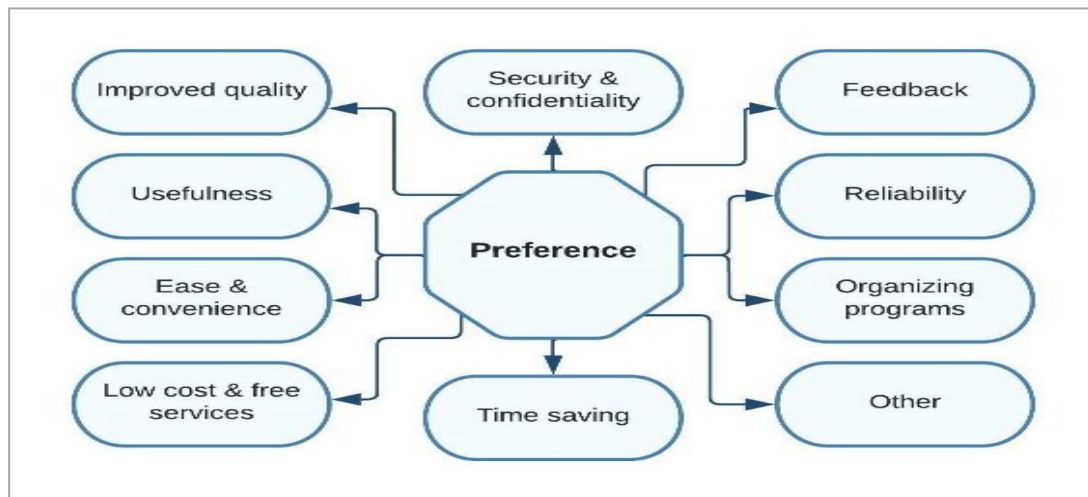


Figure 3
Preference.

Consumers find MFS cost-effective because it is a more effective & less costly intervention than others due to some reasons (figure-4), including discounts & offers, less transaction cost, less Labor intensive, competitive pricing strategy, and others (Srinivasan et al., 2019). Though users find it cost-effective, the discount & offers are developed in such a way that they get influenced to do unplanned buying. This gives some satisfaction as human nature always wants to be rational. The MFS platforms have internal competition and always try to give the service at a lower cost than others. That is how people find it very cost-effective, giving them satisfaction with the services (Dean T Jamison, 2006).

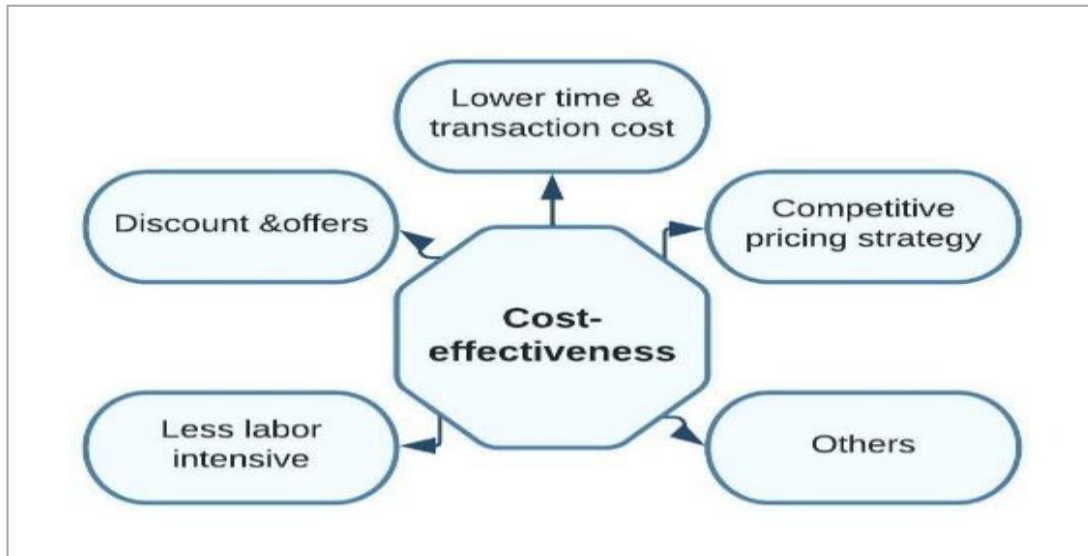


Figure 4

Cost Effectiveness

Subjective norms mainly come from users' surroundings and work as a robust stimulation of individuals' buying behavior (Kumar, 2019). The influence can be interpersonal (family, friends, peers) or media influence. Young consumers get more influenced by mobile payment compared to older consumers. Social pressures & media's positive recommendations influence consumers' minds (figure-5). The consumer can act against future investment to favor their present demand, which leads to bias and further unplanned buying. These actions do not give consumer satisfaction; instead, they lead to bias which influences to do unnecessary purchasing.

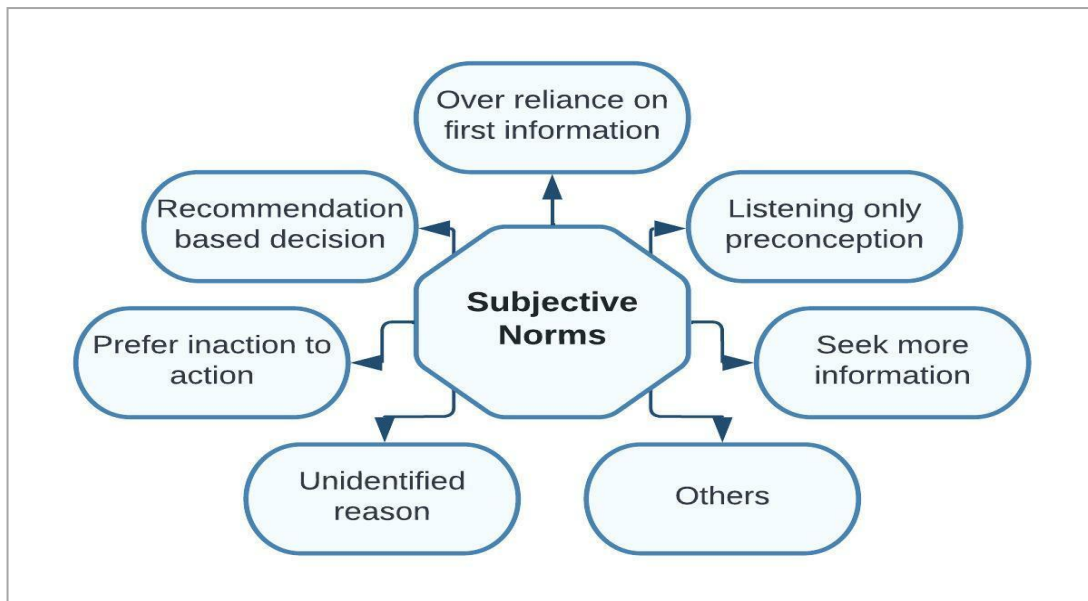


Figure 5

Subjective Norms.

Digital banking system tries to match up with consumer behavior and create bias. To influence the user' behavior need to get closer to users, brand awareness is the path to reach customers. As Brand awareness is the closeness of consumers to a particular service (figure-6), the MFS platforms try to reach consumers through advertisement & campaigns, social media, social programs, mobile marketing, the addition of more features, and others (non-traditional way) (Srinivasan et al., 2019). These factors create bias in choosing among different platforms as well as people become aware of particular service, they did not want to purchase previously but want to avail of now (Kopp, 2022).



Figure 6
Brand Awareness.

Satisfaction is a psychological feeling where bias is the limitation of our thinking. Unplanned buying is a purchasing action without formed buying intentions. Users continuously use mobile financial services if they find a satisfactory experience get influenced to use it willingly and unwillingly for bias. Satisfaction is the cognitive reaction, bias is the affected reaction, and both reactions go under the organism part of the S-O-R model, which are the reactions of the different triggers. Beliefs and perceptions are required for satisfaction to initiate unplanned buying, whereas bias focuses on the user's mental motivation to trigger unplanned buying by influencing that.

Very few studies have shown the relationship between satisfaction, bias, and unplanned buying. The study adopts both satisfaction and bias of using MFS compared with the previous study. When consumers get influenced by bias and enjoy purchasing due to satisfaction, they tend to buy higher volume than usual, which refers to unplanned buying. Because of emotional interests, the cognitive reaction is less effective than affected reactions in forming unplanned buying, according to Beatty and Ferrell (1998). The feelings just before transactions are more important than what consumers always feel. Mobile augmented services generally give people satisfaction, and the availability of that service also makes people biased. The study proposes that satisfaction and bias force consumers to unplanned buying.

5. Results & Discussion

5.1 Demographic Profile

Among the total respondents (384), 65.62% (252) are male and females were 34.38% (132) are female (Appendix-1). Most participants were from age 18 to 24 years (88.28%) and students. Age group from 25 to 30 years and above 30 years also respond in the survey though their number of participants is very low. Similarly, people from different professions also participated in the survey like job-holder, business and others. Others included all the informal job sectors like framers, housewife, rickshaw-puller etc. As most are students, so 88.24% of the respondents had a monthly salary below 20,000tk. At age 25 to 30 people try to get a job most of the time and also some want to study more. People get on average 20,000tk to 40,000tk salary on their first job in the current

perspective. Also, people with more than 40,000tk income also available in the survey. Most respondents used bKash as their MFS platform, which is 97.92%. People also use Nagad, Upay, T-cash and other platforms but along with bKash most of the time.

5.2 Data Examination

Kobo Toolbox is used in this study to collect primary data from the participants. Participants were not permitted to skip any questions because of the programming in the survey, but they could hide their identity if they were cautious about their personal information (name, phone number, mail). On a four-point Likert scale, participants in the study rated their approval and disapproval of each survey question. This study's methodology uses more than one independent variable (multivariate model).

The respondents were asked what their preferences towards MFS are, and most of them, 316 (82.29%), voted for time-saving as their reason for choosing MFS. While 106 (27.6%) respondents said, the improved quality of MFS is one of the priorities for their preference. Also, 81 (21.09%) respondents choose usefulness, 80 (20.83%) choose low-cost & free services, 77 (20.05%) choose ease & convenience, 69 (17.97%) prefer security & confidentiality, 65 (16.93%) choose reliability & user-friendliness. 37 (9.64%) respondents want the program to be loyal customers, and 26 (6.77%) choose regular feedback from MFS. Others were voted by 12 (3.12%) respondents, which can be on-time service, easy availability, and many more for their preferences toward MFS.

327 (85.16%) respondents voted that MFS is cost-effective because of discounts & offers. 101 (26.3%) respondents voted for lower time & transaction cost, 97 (25.26%) for less labor intensive, and 62 (16.15%) voted for the adoption of a competitive pricing strategy. 22 (5.73%) respondents voted for others as their reason behind cost-effectiveness.

Respondents were asked what factors influenced them to use MFS. Most respondents make a recommendation-based decision, which is 292 (76.04%). 92(23.96%) respondents voted for over-reliance on the first information, listening only preconception was 64 (16.67%), seeking more information was 63 (16.41%), referring inaction to action was 57 (14.84%), the unidentified reason was 49 (12.76%). 17 (4.43%) respondents voted for others.

In the answer of how MFS created brand awareness among respondents, advertisement & campaign were voted by 337 (87.76%), through social media by 99 (25.78%), mobile marketing by 97 (25.26%), the addition of more features by 63 (16.41%), through social programs by 50 (13.02%) respondents. 25 (6.51%) respondents voted for others.

Table 3

Summary of the Likert Scale Data

Indicators	Value	Frequency	Percentage
I am satisfied with MFS services.	Strongly Agree	164	42.71
	Agree	176	45.83
	Disagree	37	9.64
	Strongly Disagree	7	1.82
I can use MFS in many places.	Strongly Agree	129	33.59
	Agree	190	49.48
	Disagree	54	14.06
	Strongly Disagree	11	2.86
Different factors influence my MFS using.	Strongly Agree	112	29.17
	Agree	177	46.09
	Disagree	87	22.66
	Strongly Disagree	8	2.08

MFS provider companies try to attract me in many ways.	Strongly Agree	141	36.72
	Agree	162	42.19
	Disagree	63	16.41
	Strongly Disagree	18	4.69
Cashless payment systems influence my on-spot decision.	Strongly Agree	146	38.02
	Agree	152	39.58
	Disagree	62	16.15
	Strongly Disagree	24	6.25
MFS positively affect my unplanned buying.	Strongly Agree	133	34.64
	Agree	144	37.5
	Disagree	83	21.61
	Strongly Disagree	24	6.25
Satisfaction with MFS influenced my unplanned buying.	Strongly Agree	114	29.69
	Agree	160	41.67
	Disagree	80	20.83
	Strongly Disagree	30	7.81
Biases created by MFS influence my unplanned buying.	Strongly Agree	114	29.69
	Agree	174	45.31
	Disagree	71	18.49
	Strongly Disagree	25	6.51
Amount of savings decreased after I started using MFS.	Strongly Agree	128	33.33
	Agree	135	35.16
	Disagree	96	25
	Strongly Disagree	25	6.51
MFS changed my consumption pattern and influenced my behavior.	Strongly Agree	146	38.02
	Agree	143	37.24
	Disagree	64	16.67
	Strongly Disagree	31	8.07

Source: Authors Compilation

In table 3, there is a summary of the Likert scale, which shows how much respondents strongly agree, agree, disagree, and strongly disagree with the statements questioned in the survey. The value of strongly disagree=1, disagree= 2, agree=3, and strongly agree=4 is assumed. Multiple variable regression analysis is conducted with that value, where unplanned buying is the main dependent variable, and satisfaction & bias are the independent variables. Again, Satisfaction depends on preference and cost-effectiveness. Furthermore, Bias depends on brand awareness and subjective norms. For 1% significance level ($\alpha=1\%$), all the independent variables are significant, which means independent variables have an impact on the dependent variable. The regression equations will be,

$$\text{Satisfaction} = 0.681 + 0.369 \text{ preference} + 0.353 \text{ cost-effectiveness. (Appendix-2)}$$

If the preference increases by 1 unit, on average, the satisfaction will increase by 0.369 units holding the effect of cost-effectiveness constant. Similarly, if the cost-effectiveness increases by 1 unit, on average, the satisfaction will increase by 0.353 units keeping the impact of preferences constant. R^2 shows the goodness of fit. Approximately, 30.7% (0.307) of variation in satisfaction can be explained by the variation in preference and cost-effectiveness.

$$\text{Bias} = 1.022 + 0.303 \text{ subjective norm} + 0.336 \text{ brand awareness. (Appendix-3)}$$

If the subjective norm increases by 1 unit, on average, the bias will increase by 0.303 units keeping the effect of brand awareness constant. Similarly, if the brand awareness increases by 1 unit, on average, the bias will increase by 0.336 units keeping the impact of subjective norm constant. Approximately, 26.1% (0.261) of variation in bias can be explained by the variation in subjective norm and brand awareness.

Unplanned Buying = 1.118 + 0.184 satisfaction + 0.470 bias. (Appendix-4)

If the satisfaction increases by 1 unit, on average, the unplanned buying will increase by 0.184 units holding the effect of bias constant. Similarly, if the bias increase by 1 unit, on average, the unplanned buying will increase by 0.47 units keeping the impact of satisfaction constant. Approximately 28.6% (0.286) of variation in unplanned buying can be explained by the variation in satisfaction & bias.

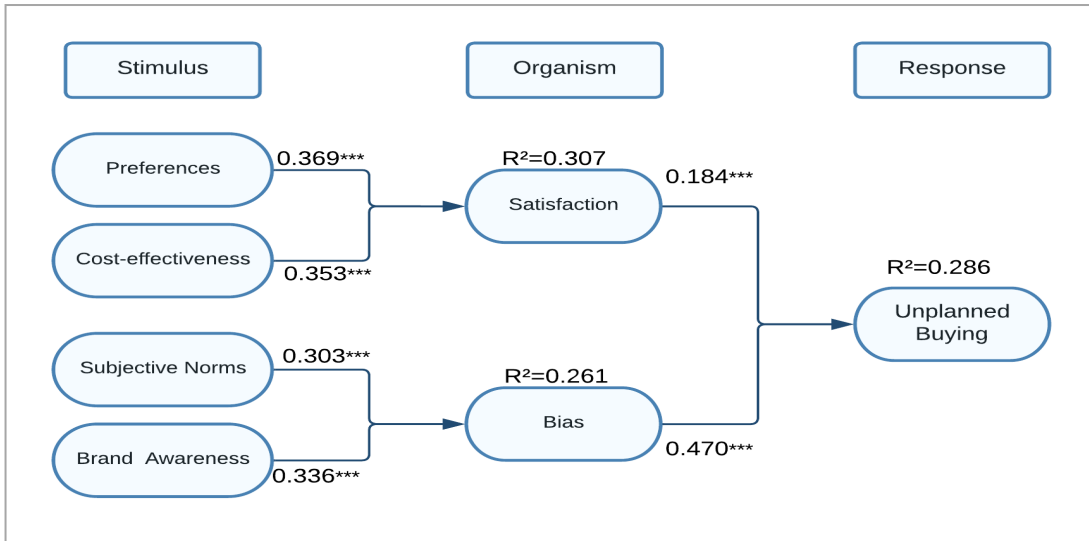


Figure 7
Structural results.

5.3 Discussion

The result showed that preference influenced consumers’ MFS satisfaction and had the most substantial effect in influencing consumers' satisfaction than cost-effectiveness. Though Cost-effectiveness also positively influenced the satisfaction of consumers but was lower than the preference. This observation indicates that preference enhanced satisfaction. Prospective consumers may be more concerned with ease& convenience, improved quality, reliability, and lower cost while using MFS, which subsequently enhances their preference and lead to satisfaction. The influence of cost-effectiveness on satisfaction was also significant. Users may be concerned about the discount and offers, less labor intensiveness, lower time cost, and competitive pricing strategy, which may give them satisfaction as human nature wants to be rational by being cost-effective. However, people consider it less effective than the preference, but it is the most challenging task to overcome. The visually pleasing advertisement, campaign, and new feature create bias among people to use the MFS. This variable arouses users' positive feelings and gratification when using MFS. This study found that brand awareness significantly influenced creation bias in consumers' minds, which satisfied other research work.

The study revealed that subjective norm impacts the MFS bias and have positive relationship. It indicates the role of a user's surroundings (family, friends, colleagues), characteristics, and decision-making capability in influencing MFS usage and creating bias, supporting some research. The

researcher observed that people did not strongly agree with the influential matter, as nobody wanted to see himself influenced. The data showed that satisfaction with MFS and Bias significantly influenced unplanned buying. Satisfaction and bias are types of cognitive reaction (refers to how individuals analyze different information). Satisfaction is a judgment of whether a particular thing can give a consumer a pleasurable level of service or not. Rational consumers allocate much energy to the targeted things and less to the unnecessary things, which means they are more likely to make planned purchases than unplanned. Satisfaction (a type of rational reaction) may not influence consumers' unplanned buying behavior but it raises the volume of transactions that may create unplanned buying further.

The current study found that preference, cost-effectiveness, brand awareness, and subjective norms are the antecedent in predicting MFS users' unplanned buying. In other words, MFS users feel the process is enjoyable and get influenced by different factors that induce unplanned purchase desire. Other research found that positive emotion and cognitive bias encourage individuals to reward themselves and feel more freedom to act. The empirical studies concord that both satisfaction & bias significantly influenced unplanned buying intention.

6. Practical Implication

According to NASDAQ⁵ and Tellimer, Bangladesh is one of the world's largest MFS markets, with 45 million active users and a \$100 billion market value over the past few years (Dhakatribune, 2022). Consumer behavior research offers more profound insights into customers' requirements, expectations, and behaviors. Proper studies allow for the improvement of consumer attraction methods and the ability for firms to profit from understanding what customers desire. To fully comprehend customer perceptions of brands and products, it is critical to understand their purchasing behavior. This type of research is also helpful in identifying consumer demand patterns for different interests. By incorporating the demands and preferences of its customers, a company can adapt to new business and develop a comprehensive marketing strategy.

This study offers some implications for MFS service provider companies. It recommends that the MFS system designer ensure consumers' requirements and compatibility with features and develop interaction-based mechanisms that can raise satisfaction. The data demonstrated that preference positively influences satisfaction with using MFS. Brand awareness is also a reason behind unplanned buying, so the researcher recommends using marketing to highlight the feature and promote MFS. Companies can promote MFS's benefits and usefulness among individuals, families, and friends through advertisements and social media. Also, word-of-mouth has a strong effect in this case. Social influence can boost preferences and induce unplanned purchases. The designers should hit the emotional responses of consumers to induce unplanned buying. Cost-effectiveness also plays a vital role, so the companies can incorporate instant cashback to give pleasure and attract users to buy more.

From the consumer perspective, we must study unplanned buying and post-purchasing regret. In unplanned buying, in most cases, consumers buy unnecessary things and regret it as there is no need for that product. Consumers' savings declined because of unplanned buying, which may negatively affect them. Consumers should only focus on their needs and have the self-control not to be influenced by any bias.

7. Limitations and Recommendations

This study was not limited to any age group; most respondents were between 18 and 24. So, further study can be conducted with other age groups because MFS perception varies across diverse age groups. The influential factors affecting consumers' satisfaction and bias as well as factors inhibiting consumer behavior (unplanned purchases) are identified. So future studies can be conducted on unplanned buying intentions. A particular area can only represent part of the population, like non-

⁵ NASDAQ - National Association of Securities Dealers Automated Quotations. An American stock market that handles electronic securities trading.

random sampling does. The probability sampling technique may cause results to deviate in future research, which will include people from all over the country for diversity.

8. Conclusion

Bangladesh has widely adopted mobile payment systems (MFS). Since the number of users has boosted in the past few years, very little research has been conducted regarding the usage and adoption of MFS. Bangladesh now has more than 180 million MFS users (Dhakatribune, 2022), which indicates the wide acceptance of the mobile payment system. More than ninety thousand crore taka worth of transactions were conducted by MFS through different services (cash in, cash out, payment, disbursement, etc.). There are more than 1.5 million MFS agents working across the country, which creates a large amount of employment. MFS is easing our remittance flow as it is more convenient and secure for migrant workers and ex-pats. Again, the illegal channel of money laundering will decrease as a result. More and more people (from both rural and urban areas) are coming under the MFS umbrella. The transaction system will become cashless in the near future, which will reduce the cost of printing and circulating money. Again, the transparency and usefulness of MFS are higher than the tangible form of currency. So, more research on user experience, behavior, and bias with MFS should be conducted. The consumer should be more rational in their purchasing decisions and savings by avoiding unnecessary and unplanned purchases. Thus, it is essential to know the factors determining satisfaction and bias to develop a strategy to discover the MFS experience. These studies uncover the determining factors of satisfaction and bias, both of which are determining factors of unplanned buying. However, previous research indicates that there is no impact of satisfaction on unplanned buying directly; it is only a rational reaction. Also, bias was categorized as a cognitive reaction that has little impact. This study examines how both satisfaction and bias lead to unplanned buying by changing consumer behavior.

References

- AFI. (2012). Guideline Note Mobile Financial Services: Basic Terminology. Alliance for Financial Inclusion (<https://www.afiglobal.org/sites/default/files/publications/MFSWG%20Guideline%20Note%20on%20Terminology.pdf>).
- Alam, S. N. (2019). Analyzing consumer behavior and perception regarding Mobile Financial Service (MFS) in Bangladesh. Brac University. <http://hdl.handle.net/10361/13826>.
- Anni Dasho Sharko, E. M. (2017). Digital Banking the Wave of the Future. . The New Paradigm for a Smarter Economy At: Tirana, Albania, Volume:1. <https://www.researchgate.net/publication/315706647>.
- BB. (2015). Regulatory Guidelines for Mobile Financial Services (MFS) in Bangladesh. https://www.bb.org.bd/aboutus/draftguinotification/guideline/mfs_final_v9.pdf.
- Dean T Jamison, J. G. (2006). Priorities in Health. <https://www.ncbi.nlm.nih.gov/books/NBK10257/>. Washington DC: The International Bank for Reconstruction and Development / The World Bank; 2006. ISBN-10: 0-8213-6262-7 ISBN-13: 978-0-8213-6262-0.
- Dhakatribune. (2022). Over 180m MFS users in Bangladesh. Dhaka: <https://www.dhakatribune.com/business/2022/10/02/over-180m-mfs-users-in-bangladesh>.
- Digibank. (2021, 12 20). Digibank by dbs. Retrieved from <https://www.dbs.com/digibank/in>: <https://www.dbs.com/digibank/in/articles/save/digital-banking-vs-mobile-banking>
- Feinburg, R. A. (1986). Credit Cards as Spending Facilitating Stimuli: A Conditioning Interpretation. . *Journal of Consumer Research*, 13(3), 348–356. <https://doi.org/10.1086/209074>.
- Guihua Zhang et al., X. Y.-P. (2021). *Understanding the Impact of the Psychological Cognitive Process on Student Learning Satisfaction: Combination of the Social Cognitive Career Theory and SOR Model*. <https://doi.org/10.3389/fpsyg.2021.712323>.
- Hai-Ninh Do et al., W. S.-A. (2020). Effects of mobile augmented reality apps on impulse buying behavior: An investigation in the tourism field. DOI:10.1016/j.heliyon.2020.e04667.

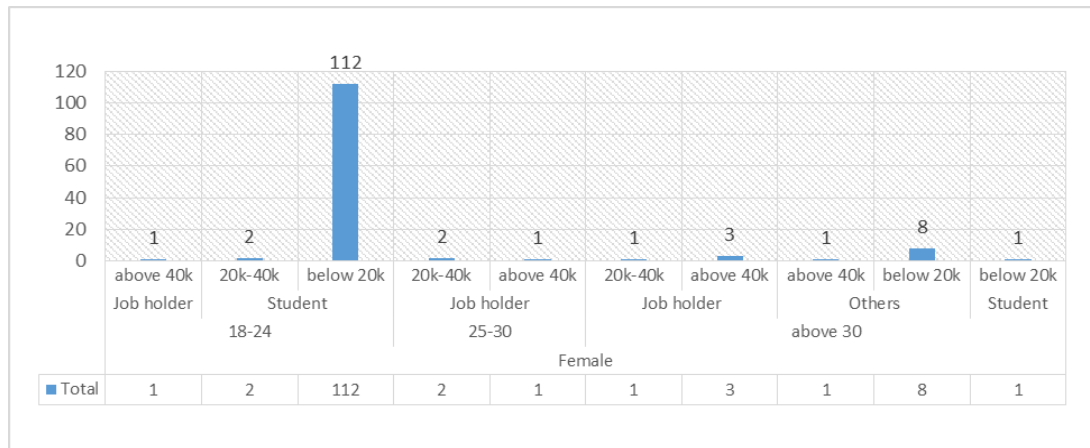
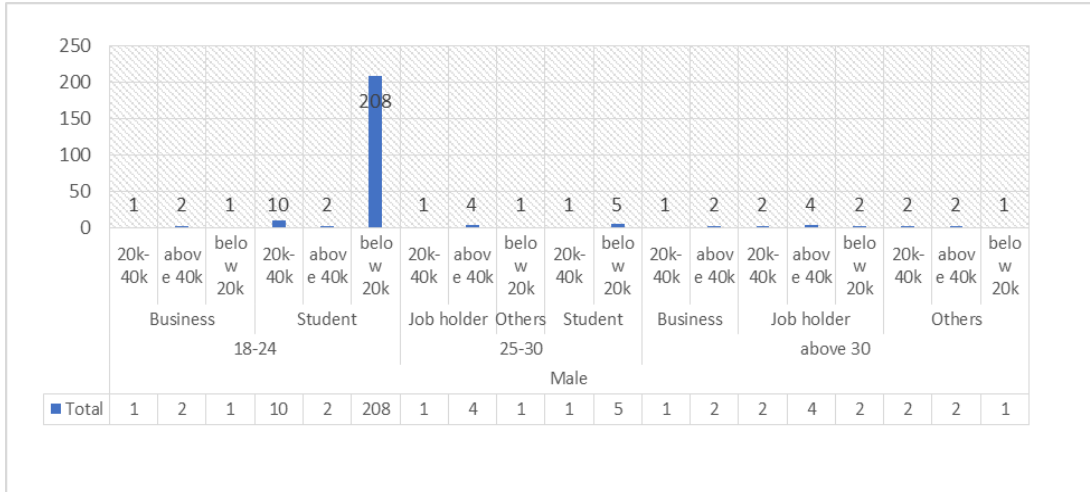
- Hair et al, J. C. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19, 139-151. <https://doi.org/10.2753/MTP1069-6679190202>.
- Hair et al. J.J., G. H. (2014). *A primer on partial least squares structural equation modelling*. London: SAGE Publications Inc.
- Hannan Mia, A. R. (2007). Consumer Behavior of Online Banking in Bangladesh . *DHAKA UNIVERSITY JOURNAL OF BUSINESS STUDIES*. <https://www.researchgate.net/publication/257351594>.
- Kopp, C. M. (2022). *What Is Brand Awareness? Definition, How It Works, and Strategies*. Investopedia. <https://www.investopedia.com/terms/b/brandawareness.asp>.
- Kumar, S. (2019). What's Consumer Behavior Got to Do with Digital Banking?. <https://www.itcinfotech.com/blog/whats-consumer-behavior-got-to-do-with-digital-banking>.
- Liao, Z. (2002). Internet-based e-banking and consumer attitudes: An empirical study. *Information & Management*, 39 (4), 283-295. <https://www.researchgate.net/publication/223264908>.
- Liberto, D. (2022). *Social Science: What It Is and the Major Branches*. Investopedia. <https://www.investopedia.com/terms/s/social-science.asp>.
- Maria, A. (2022). List of the Top 7 Mobile Banking in Bangladesh. Dhaka: Mybangla24.com. <https://mybangla24.com/mobile-banking-bangladesh>.
- Md. Shahidur Rahman Khan, M. M. (2015). Measuring Customers' Preference toward Online Banking in Bangladesh: A Study on Private Commercial Banks (PCBs). <https://www.researchgate.net/publication/350731428>.
- Melissa Teoh, T. C. (2020). Melissa Teoh, T.T., C.Y. Hoo, and T.H. Lee. 2020. E-wallet adoption: A case in Malaysia. *International Journal of Research in Commerce and Management Studies*, 2 (2): 216–223. http://scholar.google.com/scholar_lookup?&title=E-wallet%20adoption%3A%20A%20case%20in%20Malaysia&journal=International%20Journal%20of%20Research%20in%20Commerce%20and%20M.
- Minjin Kim, H. Z. (2018). Mobile financial services, financial inclusion, and development: A systematic review of academic literature. *Electronic Journal on Information Systems in Developing Countries*. <https://doi.org/10.1002/isd2.12044>.
- Monash. (2018). Planned Buying vs. Unplanned Buying. Monash business school. <https://www.monash.edu/business/marketing/marketing-dictionary/p/planned-buying-vs.-unplanned-buying#:~:text=Unplanned%20buying%20is%20buying%20activity,may%20begin%20as%20unplanned%20buying>.
- Natarajan, T. &. (2018). The moderating role of device type and age of users on the intention to use mobile shopping applications. *Technology in Society*, 53(C), pages 79-90. DOI: 10.1016/j.techsoc.2018.01.003.
- Officials, B. B. (2012). Mobile Financial Services in Bangladesh: An Overview of Market Development. https://www.researchgate.net/publication/307932475_Mobile_Financial_Services_in_Bangladesh_An_Overview_of_Market_Development.
- Piron, F. (1991). Defining Impulse Purchasing. *Advances in Consumer Research*, 18, eds. Rebecca H. Holman and Michael R. Solomon, Provo, UT : Association for Consumer Research, Pages: 509-514.
- Priyo, U. H. (2021). Mobile financial services in Bangladesh: Understanding the affordances. *Electronic Journal of Information Systems in Developing Countries*, 87(3). DOI:10.1002/isd2.12166.
- Qian Liu, Z. S. (2019). Examining the influential factors for continued social media use: A comparison of social networking and microblogging. *Industrial Management and Data Systems*, 119, 1104-1127. <https://doi.org/10.1108/IMDS-05-2018-0221>.
- Ritzer, G. (1997). Expressing America: A critique of the global credit. Resource Economics Department Faculty Publication Series. https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1001&context=resec_faculty_pubs.

- Sahayselvi, S. (2017). An Overview on Digital Payments. *International Journal of Research*. <https://www.researchgate.net/publication/336835369>.
- Saleh, M. A. (2012). An Investigation of the Relationship between Unplanned Buying and Post-purchase Regret. *International Journal of Marketing Studies*, 4(4). <http://dx.doi.org/10.5539/ijms.v4n4p106>.
- Servon, L. J. (2008). Consumer Financial Literacy and the Impact of Online Banking on the Financial Behavior of Lower-Income Bank Customers. *Journal of Consumer Affairs*. <https://www.researchgate.net/publication/227610496>.
- Srinivasan et al., T. A. (2019). Impact of e-banking on consumer behaviour: investigative study into the users of e-banking services among new generation banks in Chennai city. *A Journal of Composition Theory*. <https://www.researchgate.net/publication/355532480>.
- Statista. (2022). Statista. Retrieved from <https://www.statista.com>: <https://www.statista.com/statistics/1228757/online-banking-users-worldwide/>
- Tabassam, R. (2020). *Fintech MFS: Best Mobile Financial Services in Bangladesh*. Dhaka: UNB Press.
- Tereshchenko, O. S. (2018). The Bank Card Market: a Comparative Analysis of Ukraine and its Neighboring Countries . *Comparative Economic Research. Central and Eastern Europe*, 21(4), 25-44. <https://www.researchgate.net/publication/330125126>.
- Times, T. E. (2022). What is Preferences. The Economic Times. <https://economictimes.indiatimes.com/definition/preferences>. Retrieved from What is 'Preferences' - The Economic Times. <https://economictimes.indiatimes.com/definition/preferences>
- Yi Yong Lee et al, C. L. (2022). Do E-wallets trigger impulse purchases? An analysis of Malaysian Gen-Y and Gen-Z consumers. *Journal of Marketing Analytics*. <https://link.springer.com/article/10.1057/s41270-022-00164-9>.

Appendix

Appendix 1

Demographic profile



Appendix 2

Satisfaction

	<i>Dependent variable:</i>
	Satisfaction
Preference	0.369*** (0.056)
Cost-effectiveness	0.353*** (0.048)
Constant	0.681*** (0.180)
Observations	384
R ²	0.307
Adjusted R ²	0.303
Residual Std. Error	0.754 (df = 381)
F Statistic	84.400*** (df = 2; 381)
Note:	*p<0.1; **p<0.05; ***p<0.01

Appendix 3

Bias

	<i>Dependent variable:</i>
	Bias
Subjective Norms	0.303*** (0.055)
Brand Awareness	0.336*** (0.050)
Constant	1.022*** (0.174)
Observations	384
R ²	0.261
Adjusted R ²	0.257
Residual Std. Error	0.743 (df = 381)
F Statistic	67.279*** (df = 2; 381)
Note:	*p<0.1; **p<0.05; ***p<0.01

Appendix 4

Unplanned Buying

	<i>Dependent variable:</i>
	Unplanned Buying
Satisfaction	0.184 ^{***} (0.049)
Bias	0.470 ^{***} (0.050)
Constant	1.118 ^{***} (0.166)
Observations	384
R ²	0.286
Adjusted R ²	0.283
Residual Std. Error	0.786 (df = 381)
F Statistic	76.469 ^{***} (df = 2; 381)
Note:	*p<0.1; **p<0.05; ***p<0.01