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Unlocking Customer Delight: Exploring the Dynamics of Fin-Tech Satisfaction in Bangladesh

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Abstract

In today's ever-evolving Fin-Tech landscape, understanding what influences customer satisfaction is essential for growth and success. Bangladesh's diverse socio-economic and technological landscape makes it a great place to explore how Fin-Tech products and services impact customer satisfaction. In light of this, this study attempted to find out what factors are influencing customer satisfaction in the Bangladesh Fintech industry. For conducting this study, data of 200 respondents have been collected from Fin-Tech users through online. The partial least square (SEM) approach was adopted for verifying the relationship and SmartPLS 4" tool as well as Python was used to analyze the data. This study shows a notable impact of assurance and security, convenience, and perceived usefulness on customer satisfaction, both in SmartPLS and Python-based analysis. By figuring out the main drivers of Fin-Tech satisfaction, Fintech service providers can adjust their strategies to meet customer needs and expectations, resulting in sustainable growth and better user experiences.

Keywords: Customer Satisfaction, Digital Payment, Fin-Tech, User Preferences.

Introduction

Fintech, which stands for "financial technology", has enabled customers to gain access to financial services from anywhere. Fin-Tech in Bangladesh officially began with the emergence of Mobile Financial Services (MFS) in 2011. Fintech has had a significant impact on the financial sector in Bangladesh, with the country's Fin-Tech sector having seen a surge in growth in recent years. This is largely due to the widespread use of smartphones and the emergence of the internet, which has enabled individuals to access digital services more easily. Additionally, MFS Providers and Mobile Operators offer a limited number of services through their wallet, although due to regulatory restrictions, these services are only available for airtime top-ups, train tickets, and utility bill payments. The degree of appreciation of customers in the banking sector is increased with the implementation of Fin-Tech solutions, which are electronic banking services (1). In Bangladesh, digital payment solutions have become an integral part of Fin-Tech. Platforms such as bKash, Rocket, and others enable users to carry out transactions, pay invoices, and even complete online purchases with ease. By streamlining traditionally laborious procedures of fund transfer and bill payment, these services enhance customer satisfaction through reduced time and effort. Mobile banking apps make it super easy to keep track of money, balance of accounts, and access all kinds of banking services from the phone. This anytime, anywhere strategy improves client experience and happiness because it allows them to monitor and control their financial transactions without having to go to actual bank branches, as shown by the *Rocket* application from *Nagad* and *Dutch-Bangla Bank*. In Bangladesh, P2P lending is becoming more and more popular. Instead of going through intermediaries, people can use P2P platforms. This means that the person borrowing money can get it at a more favorable interest rate, and the person lending the money can earn a better return on their investment. Furthermore, it contributes to financial inclusion and accelerates people's progress towards their goals.

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For instance, *iFarmer* is such an online platform for investors to invest in agriculture and farming, allowing borrowers to access funds directly from investors. In today's digital world, people don't rely as much on traditional banking services, rather they prefer fast and secure services and this led to the emergence of FinTechs. Since the onset of the pandemic, there has been a surge in the adoption of cashless transactions, resulting in the emergence of fin-tech startups such as bKash, and Nagad. Despite increased demand for Fin-Tech products and services, client happiness remains a concern. As the fin-tech business in Bangladesh is still in its early stages, the customer delight is also a significant determinant of the success of the FinTech industry of the country. As the FinTech products and services are very saturated, all the financial companies provide almost similar services, so their performance depends on exceptional customer experience that goes beyond the basic satisfaction. The motivation of using FinTech services might derive from personalized transactions, real time updates, data protection etc. Therefore, we must prioritize customer happiness along with their satisfaction, who remain loyal and suggest to others, resulting in increased market share. However, the majority of studies are still being conducted in digitally mediated environments such as the United States, India, China, and Taiwan. Fin-techs have lately been studied in Bangladesh as well, however, the focus has been on people's intentions to adopt fin-tech. However, because fin-tech firms already have a large number of consumers, it is logical to examine how satisfied they are with their services. There have been very few studies on this subject, but they have primarily focused on the security and convenience aspects. So, this study attempted to combine three other criteria in addition to those two in order to acquire a better understanding of the aspects influencing customer satisfaction with fin-tech services. This research aims to determine and evaluate the impact of various elements on Bangladeshi Fin-Tech products and services. It seeks to uncover the intriguing interplay between customer satisfaction and the fortification of security in Fin-Tech services. Furthermore, it explores the correlation between customer innovation and consumer happiness, focusing on how innovative features influence overall satisfaction. The study also examines the influence of convenience on client satisfaction, elucidating the connection between ease of use and customer contentment. Additionally, it analyzes the relationship between customer happiness and the perception of risk, investigating how satisfied customers perceive risks differently. Lastly, it assesses the connection between customer happiness and the usability of Fin-Tech services, aiming to understand how usability factors contribute to customer satisfaction.

Literature on Financial Technology and Customer Satisfactions

The influence of technology on the level of customer satisfaction in Jordanian banks has been assessed in prior work (2). As proxies, the availability, accessibility, usability, performance, transaction costs, and service security of financial technology services were evaluated. Based on the research findings, all individual factors are connected in a positive way and have a noteworthy influence on customer satisfaction. Accessibility to Fin-Tech services was found to be the most crucial aspect of the quality of service, followed by availability, service security, transaction pricing, ease of use, and performance. The study recommends that Fin-Tech companies should strive to ensure overall customer satisfaction in every aspect of their services. Similarly, the factors contributing to customer satisfaction with Fin-Tech services have been explored in previous studies (3). Factors such as the quality of customer support when technology functions smoothly, ease of use, customers' confidence in the service, and their willingness to continue using it were taken into account. Advanced computational methods, including AI and principal component analysis, were used to study these aspects. It was found that a crucial factor for customer satisfaction is whether the technology effectively meets their needs. According to this research, it is advised that Fin-Tech companies should closely consider what brings satisfaction to customers and use this knowledge to enhance their services further. To determine customer satisfaction with financial technology products and services, a few different techniques have been utilized in prior research (4). The frequency of certain events was examined, regression and correlation analyses were conducted, and detailed descriptions were

reviewed. A survey was conducted with 200 participants using an online questionnaire, yielding interesting results. It was revealed that a strong correlation exists between consumer satisfaction with financial technology products and services and three independent variables: perceived security, ease of use, and the quality of customer support. Correlation coefficient analysis was used to establish the connection between these three factors and customer satisfaction toward financial technology products. It has been noted in prior research that digital banks have emerged as competitors to traditional banks due to their novel transactional strategies (5). In light of this, the effects of the customer's digital banking experience were investigated. The global banking industry has been significantly impacted by the COVID-19 pandemic. While the pandemic has presented various challenges, it also holds the potential to drive the development of innovative financial technology (FinTech) products and services a recent study investigated how the performance of Chinese commercial banks is influenced by the use of FinTech products (6). To better understand how the quality of E-service in Botswana banks impacts customer satisfaction, the relationship between these factors was assessed (7). The findings revealed a substantial connection between customer satisfaction and E-service attributes. Additionally, a study conducted in 2017 demonstrated that the quality of Internet banking services is closely linked to customer satisfaction. It was evident that Internet banking services significantly influence customer satisfaction (8). To validate the conclusions, both the technology acceptance model and the innovation resistance theory were utilized (9). It was discovered that perceived usefulness (PU), ease of use, and trust positively and significantly influence people's attitudes toward using mobile financial services (MFS). Additionally, adoption barriers were found to have a negative and substantial effect on attitude and intention. Insights into the constructs used in the study were also gained through a focus group discussion. A recent investigation explored the impact of FinTech literacy on long-term intention to use mobile financial services (MFS) in the Bangladeshi context. The findings indicated that FinTech literacy has a significant and positive effect on consumer satisfaction and long-term intention to use MFS. Similarly, customer satisfaction was found to strongly influence the long-term intention to use MFS. Furthermore, the results revealed that customer satisfaction partially mediates the relationship between FinTech literacy and the long-term intention to utilize MFS (10). In light of the burgeoning Fintech industry in Bangladesh, where the emphasis on customer satisfaction is paramount, it becomes apparent that comprehensive research into this domain is a pressing necessity. While Fintech adoption has started to gain attention, the focus thus far has predominantly revolved around the intentions of individuals to adopt Fintech services. However, this perspective does not delve into the existing customers' level of satisfaction. As the industry is still in its early stages in Bangladesh, we must understand how satisfied users are with the services provided by Fintech firms. Surprisingly, very few studies have explored this aspect, and those that exist have primarily concentrated on security and convenience factors. Therefore, this research seeks to address the existing research gap by expanding the scope to encompass a broader range of criteria. This comprehensive approach will provide a deeper understanding of the factors influencing customer satisfaction within the evolving Fintech landscape of Bangladesh.

Conceptual Framework and Development of Hypotheses

The TAM stands for “Technology Acceptance Model”. Originally, it was used to test the adoption of technology (11), but in recent years it has also been used to study different services available on the internet. The TAM focuses on the user’s perception of the usefulness and ease of using a computer system to decide whether or not they will accept and use the technology. According to TAM, users’ perception of the usefulness of a technology is closely related to the benefits they expect to get from it. The degree to which users find a product useful has a significant impact on their attitude towards using that product. Users who perceive technology as beneficial are more likely to experience positive outcomes, be more likely to reach their objectives and be more content with their interactions. A comprehensive analysis of the research literature on FinTech was conducted to identify the key characteristics that influence customer behavior and attitudes

towards FinTech, and five key elements were identified: assurance & security, convenience, perceived risk, usefulness, and consumer innovativeness that may influence consumer behavior and attitudes regarding FinTech. According to the study, the eight elements have an influence on customer satisfaction to some extent and how likely customers are to adopt FinTech solutions based on their needs.

Assurance & Security and Customer Satisfaction

Customers' intention to remain loyal to FinTech is determined by factors such as assurance, customer care, value, and user-friendliness, as assessed in recent studies (12, 13). According to the study's results, customers' FinTech experiences improved in terms of assurance, customer service, and value. This is corroborated by a prior study which revealed that customer satisfaction with financial technology goods and services, such as mobile payments, benefits from security (14). Security measures that are carefully planned can lead to increased customer satisfaction when making online payments, as trust is a major factor in customers' willingness to accept payments online, as well as personal data (15). Data security has long been a top priority for both businesses and customers in e-commerce and related industries (16). Therefore, the following hypothesis can be developed.

H1 "Assurance & Security" factor of the FinTech services positively affects customer satisfaction.

Customer Innovativeness and Customer Satisfaction

Customer innovativeness is the degree to which your customers are willing and able to adopt and leverage new technologies and disruptive solutions, including FinTech services to fulfill their financial requirements. (17) Consumer innovation has been demonstrated to have a favorable impact on trust, which has an indirect effect on the likelihood of utilizing online payment methods. Similarly, Customer innovation has an indirect influence on the possibility of adopting financial technology services since it affects consumer trust in these services (18). Therefore, the following hypothesis can be developed.

H2 "Customer Innovativeness" factor of FinTech services positively affects customer satisfaction.

Convenience and Customer Satisfaction

The ease with which users may log in, navigate, and interact with financial applications has a certain impact on their satisfaction with the FinTech services offered. The convenience of these services significantly reduces the amount of time spent on financial activities, resulting in greater satisfaction due to the more efficient use of the customer's time. It has been stated that convenience plays a crucial role in customer satisfaction (19). Additionally, it has been highlighted as a key factor influencing customer satisfaction (20). Moreover, if customers find a FinTech service easy to use and helpful, they're more likely to keep using it for a long time, which means they'll stay loyal customers. According to a study, convenience turned out to be the most important factor in making customers happy, even more important than anything else (21). Convenience and usefulness are seen as markers of perceived quality when evaluating the customer's attitude (22). The study found that user convenience had the biggest influence on how much people use FinTech services. Therefore, the following hypothesis can be developed.

H3 "Convenience" factor of FinTech services positively affects customer satisfaction.

Perceived Risk and Customer Satisfaction

When FinTech companies take care of financial, security, technology, and rules-related risks, they can earn people's trust and make them feel safe. This not only makes customers happier but also helps the entire region do better with FinTech services. A previous study showed that customer satisfaction for FinTech is largely but indirectly driven by perceived risk through trust (23). However, according to another study, the risk element has no effect on the use of FinTech services, and consequently seems to have no effect on the users' perceptions (24). Therefore, the following hypothesis can be developed.

H4 "Perceived Risk" factor of the FinTech services negatively affects customer satisfaction.

Perceived Usefulness and Customer Satisfaction

The extent to which clients believe that employing a FinTech service would improve their capacity to

fulfill their financial goals or tasks more effectively than traditional means is referred to as perceived usefulness. The elements linked with usefulness influence customers' attitudes of FinTech (25). Conversely, the perceived usefulness and ease of use of mobile payment system have no bearing on the adoption of the system (26). Customers' contentment is positively influenced by how complaints are handled, which leads to banks' credibility (27). Therefore, the following hypothesis can be developed.

H5 “Perceived Usefulness” factor of the FinTech services positively affects customer satisfaction.

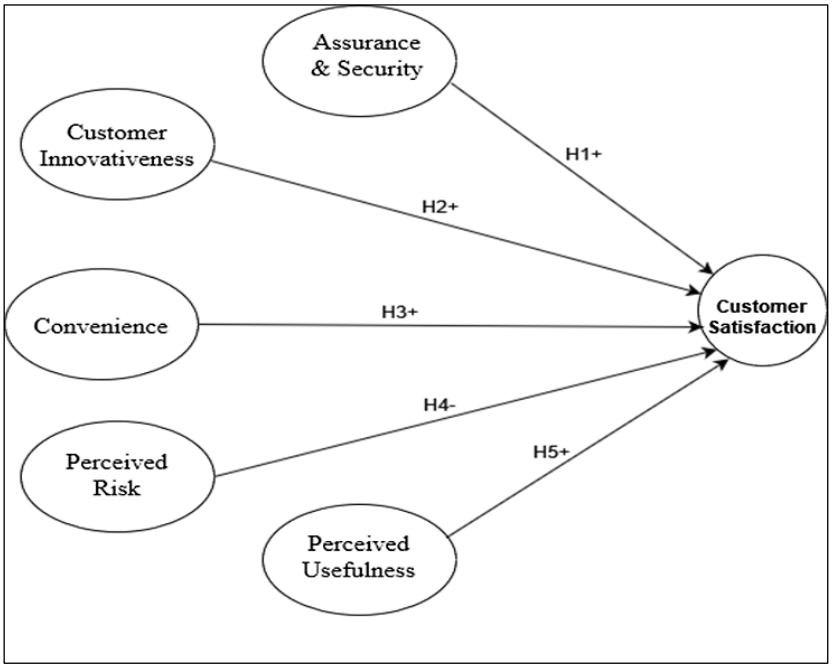

Figure 1: Graphical Representation of the Model

Figure 1 illustrates the conceptual framework for the study, which identifies five key factors—Customer Innovativeness, Assurance & Security, Convenience, Perceived Risk, and Perceived Usefulness—that influence Customer Satisfaction. Each factor is hypothesized to have a direct impact, represented by H1 to H5.

Methodology

Research Design

This report was designed from a quantitative point of view. It looked at how satisfied customers were with the FinTech by looking at five different factors, including convenience, assurance & security, perceived risk, perceived usefulness and customer innovativeness.

Sources and Collections of Data

Data has been collected from primary sources for this study. A systematic questionnaire was used to collect primary data from the citizen of Bangladesh. A structured questionnaire using five-point Likert scale was served to the different segment of the society including both male and female citizens provided they have experience of using FinTech services using a convenient sampling technique. The questionnaire was split into two categories: the first section dealt with the respondent's demographic data (Gender, Employment status, Age, Income level), and the second section related to the variables (Convenience, Assurance & Security, Perceived Risk, Perceived Usefulness and Customer Innovativeness) used for the study. Respondents were asked to rate their level of agreement on a five-point Likert scale ranging from 1 to 5, with 1 indicating "strongly disagree", 5 indicating "strongly agree" and 3 indicating “neutral”. Finally, 200 responses were received from the citizens over the internet as the questionnaire was served using google form. As the customers using FinTech services must require having certain degree of literacy, serving the questionnaire online might not limit the generalizability of our findings. Again, the sample size is 200, which is tenfold of the number of maximum numbers of arrowheads pointing to the latent constructs. So, sample size is sufficient for the current model.

Data Analysis Techniques

To analyze the collected data, the study employed the partial least square structural equation modeling (PLS-SEM) approach, a method widely recognized for its effectiveness in exploring complex relationships between latent variables in quantitative research. The "SmartPLS 4" software was utilized to generate results for both the measurement and structural models, enabling a detailed assessment of the hypothesized relationships between dependent and independent variables. In addition to SmartPLS, the data was further analyzed using Python on the Anaconda platform. This Python-based analysis allowed for additional exploration, including simulations and validations, which complemented the PLS-SEM findings. By integrating these analytical approaches, the study ensured a robust and comprehensive analysis, leveraging the unique strengths of each method to enhance the reliability of the results.

Research Ethics

This study adheres to ethical research practices, emphasizing the importance of exploring factors that impact client satisfaction in Bangladesh's FinTech sector. By improving access to financial services, reducing transaction costs, and enhancing the efficiency of the financial sector, FinTech plays a pivotal role in contributing to the country's GDP growth. It fosters investment, entrepreneurship, and job creation, driving overall economic development. Understanding client satisfaction with these services is essential to ensure that FinTech continues to meet user needs while promoting sustainable economic progress. The research was conducted with a commitment to transparency, integrity, and respect for participant privacy, ensuring that the findings contribute meaningfully to both academic understanding and practical advancements.

Results

Demographic Analysis

Table 1: Respondents' Demographic Characteristics

Demographic Information		Frequency	%
Gender	Female	85	42.5
	Male	115	57.5
	Total	**200**	**100**
Employment Status	Student	75	37.5
	Employed	85	42.5
	Self-employed	32	16
	Unemployed	8	4
	Total	**200**	**100**
Age	below 20	24	12
	20-30	155	77.5
	31-40	16	8
	41+	5	2.5
	Total	**200**	**100**
Income Level (in BDT)	below 10,000	68	34
	10,000-30,000	57	28.5
	30,001-50,000	59	29.5
	50,000+	16	8
	Total	**200**	**100**

Table 1 summarizes the demographic characteristics of respondents in Bangladesh who regularly use financial technology, highlighting key insights into their gender, employment status, age, and income levels. The survey sample of 200 respondents provides valuable insights into the financial technology usage patterns in Bangladesh. While larger samples can offer more

precise data, this size still captures the perspectives of a diverse group, including both genders and various age groups. With 57.5% male and 42.5% female respondents, the survey offers a balanced view of gender engagement with financial technology. The age group of 20-30 years, which comprises 57.5%, is particularly relevant given their high engagement with financial technology. The income range of 30,000-50,000 BDT reflects the financial capacity of middle-income users, which is important for understanding adoption trends. Furthermore, the inclusion of both employed respondents (42.5%) and students (37.5%) ensures that key user groups who frequently use digital financial tools are represented. While this sample is appropriate for the study's scope, future research could further refine sample size and representation.

Measurement Model

Factor Loading

Table 2: Results of Outer Loading

	Loading	T statistics (|O/STDEV|)	P values
AS1 <- AS	0.875	39.921	0.000
AS2 <- AS	0.860	38.224	0.000
AS3 <- AS	0.839	30.303	0.000
AS4 <- AS	0.844	30.945	0.000
CI1 <- CI	0.873	27.684	0.000
CI2 <- CI	0.934	65.567	0.000
CON1 <- CON	0.861	32.312	0.000
CON2 <- CON	0.895	54.613	0.000
CON3 <- CON	0.804	21.946	0.000
CON4 <- CON	0.908	42.527	0.000
CS1 <- CS	0.866	41.902	0.000
CS2 <- CS	0.833	25.306	0.000
CS3 <- CS	0.952	147.251	0.000
CS4 <- CS	0.952	149.346	0.000
PR1 <- PR	0.937	39.929	0.000
PR2 <- PR	0.873	25.186	0.000
PU1 <- PU	0.858	38.173	0.000
PU2 <- PU	0.901	57.931	0.000
PU3 <- PU	0.831	22.630	0.000
PU4 <- PU	0.773	19.986	0.000

Table 2 displays the values of outer loadings, T statistics, and P-value. Factor loading indicates how much of an item a good representation of the underlying construction is. In general, factor loading above .70 is a good rule of thumb (28). Here we can see that all the loading values are uniformly high (over 0.77), indicating that each item observed is strongly associated with the underlying latent variable. For instance, a loading value of .875 indicates a positive association between the item "AS1" and the variable (AS). This suggests that "AS1" is a good indicator of the studied variable. On top of that all entries are statistically significant with $p < 0.05$.

Convergent Validity

Table 3: Composite Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AS	0.877	0.879	0.916	0.731
CI	0.781	0.833	0.899	0.817
CON	0.890	0.894	0.924	0.753

CS	0.923	0.929	0.946	0.814
PR	0.785	0.847	0.901	0.819
PU	0.862	0.865	0.907	0.709

Table 3 shows how convergent the constructs are in terms of Cronbach's alpha, Composite reliability and Average Variance Extracted (AVE). The Cronbach's alpha shows that all the constructs have good internal consistency, and all the values are above the 0.7 threshold. Composite reliability values ranging from 0.833 to 0.946 were revealed, exceeding the required threshold of 0.70 as suggested in previous study (29). Over and above that all the constructs gave AVE values higher than 0.50 (cut-off point), which means the convergent validity is established.

Discriminant Validity

Table 4: Results of Fornell-Larcker Criterion

	AS	CI	CON	CS	PR	PU
AS	**0.855**					
CI	0.564	**0.904**				
CON	0.757	0.521	**0.868**			
CS	0.739	0.467	0.862	**0.902**		
PR	0.558	0.620	0.398	0.364	**0.905**	
PU	0.758	0.721	0.722	0.708	0.579	**0.842**

Table 5: Results of Heterotrait-Monotrait Ratio (HTMT)

	AS	CI	CON	CS	PR	PU
AS						
CI	0.673					
CON	0.857	0.617				
CS	0.821	0.541	0.948			
PR	0.655	0.816	0.469	0.419		
PU	0.872	0.875	0.828	0.795	0.693	

Table 4 presents the results of Fornell-Larcker criterion. The diagonal value is the square root of the AVE for each construct, while the off-diagonal value represents the correlation between constructs. The square root of the AVE of a construct needs to be higher than the correlation coefficient of that construct with any other construct (30). In the above table, it is shown that the values of the diagonal line are higher than of the values beneath the diagonal line. So, the result indicates that the constructs have sufficiently good discriminant validity. Table 5 represents Heterotrait Monotrait (HTMT) Ratio which is another measurement model to evaluate the discriminant value of constructs (31). It is recommended that the values of the constructs generally be less than 0.85, although a cutoff value of 0.90 is also considered acceptable (29). The above table shows that the constructs had values less than 0.90 which indicates that the variables had sufficient discriminant validity (except CS-CON). This may mean that the structures are not distinct enough, and they measure essentially similar dimensions. This indicates that the constructs have reasonable discriminant validity.

Structural Model

Multi-Collinearity Test

Table 6: Results of the VIF test

	VIF
AS -> CS	3.254
CI -> CS	2.399
CON -> CS	2.739
PR -> CS	1.868
PU -> CS	3.734

Table 6 represents the Variance Inflation Factor (VIF) which used to evaluate multicollinearity. It has been stated that a variance inflation factor (VIF) value of 5 or above indicates a potential collinearity problem (29). In the above table, we can clearly see that all the predictors deprecate VIF values under 5.0. Therefore, the study confirms that there is no collinearity problem in our model and that this model is free from common method bias and the model is available to perform structural analysis.

Path Analysis

The bootstrapping technique has been used to determine the magnitude of the path coefficient in our model.

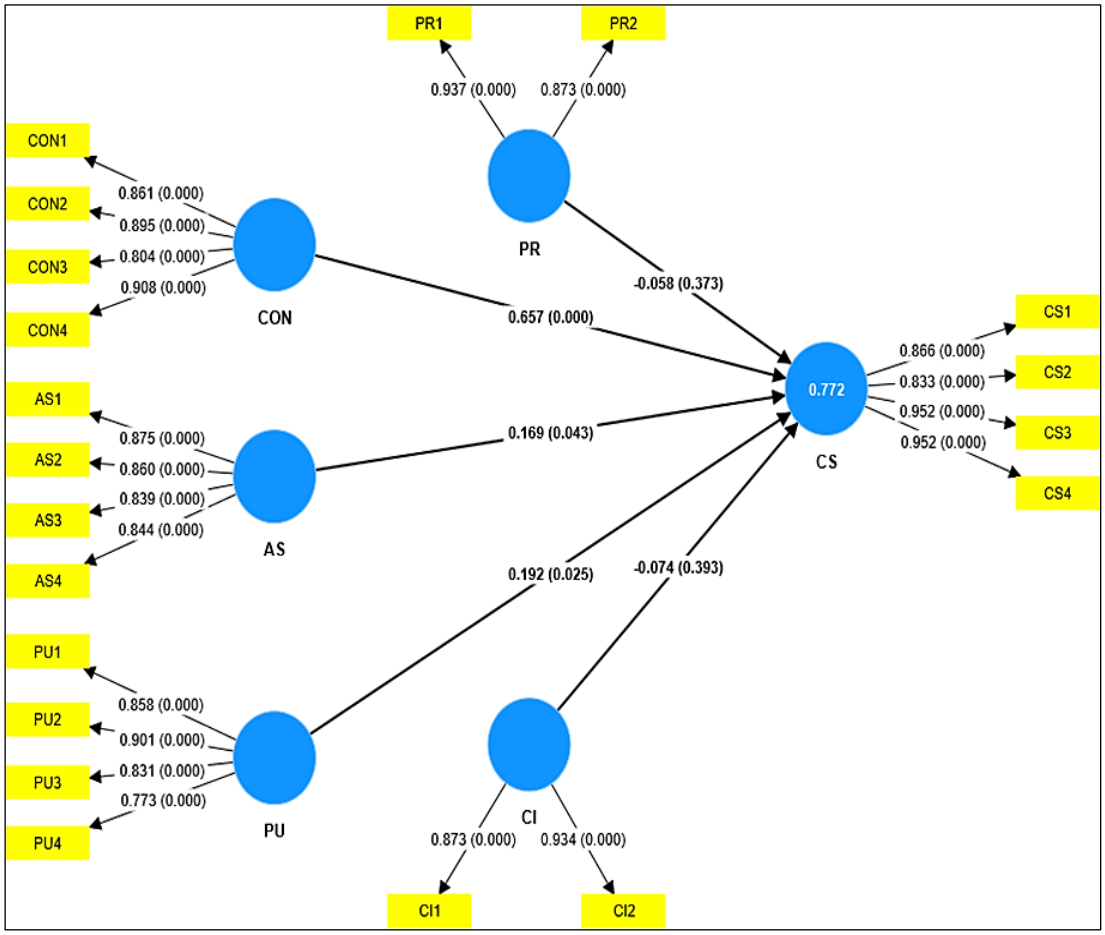

Figure 2: Results PLS Bootstrapping with P-value

Figure 2 presents the structural model results, highlighting the relationships between constructs such as Convenience (CON), Assurance & Security (AS), Perceived Usefulness (PU), Perceived Risk (PR), and Customer Innovativeness (CI) on Customer Satisfaction (CS). The path coefficients and significance values are included to depict the strength and significance of these relationships.

Table 7: Results of the Direct Path

Hypotheses	Path	β	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Results
H1	AS -> CS	0.169	0.083	2.026	0.043	Accepted
H2	CI -> CS	-0.074	0.087	0.855	0.393	Not Accepted
H3	CON -> CS	0.657	0.066	10.012	0.000	Accepted
H4	PR -> CS	-0.058	0.064	0.892	0.373	Not Accepted
H5	PU -> CS	0.192	0.086	2.245	0.025	Accepted

Here, Table 7 represents the hypotheses testing results with path coefficients (β), standard deviations, T-statistics, p-values, and outcomes. AS (H1: AS→CS generated β= 0.169, Standard

Deviation= 0.083, t= 2.026 and p= 0.043) is positively and significantly connected to CS as p< 0.05. CI (H2: CI→CS generated β= -0.074, Standard Deviation= 0.087, t= 0.855 and p= 0.393) is negatively related to CS but not significant. CON (H3: CON→CS generated β= 0.657, Standard Deviation = 0.078, t= 0.066 and p= 0.000) is positively and significantly related to CS. PR (H4: PR→CS generated β= -0.058, Standard Deviation= 0.064, t= 0.892 and p= 0.373) is negatively related to CS but not significant. PU (H5: PU →CS generated β= 0.192, Standard Deviation= 0.086, t= 2.245 and p= 0.025) is positively and significantly related to CS.

Python-based Data Visualization

We had multiple items for each variable, which I merged for the python analysis to gain a holistic insight into how each variable affects customer satisfaction.

Correlation Heat-map

Correlation Heat-map is a visualization technique commonly used to display the correlation coefficients between different variables in a dataset. This heat-map helps to understand how variables are related to each other. Darker shades of cells indicate a high value or a strong positive relationship between the items and lighter ones indicate a low value or a weak positive relationship.

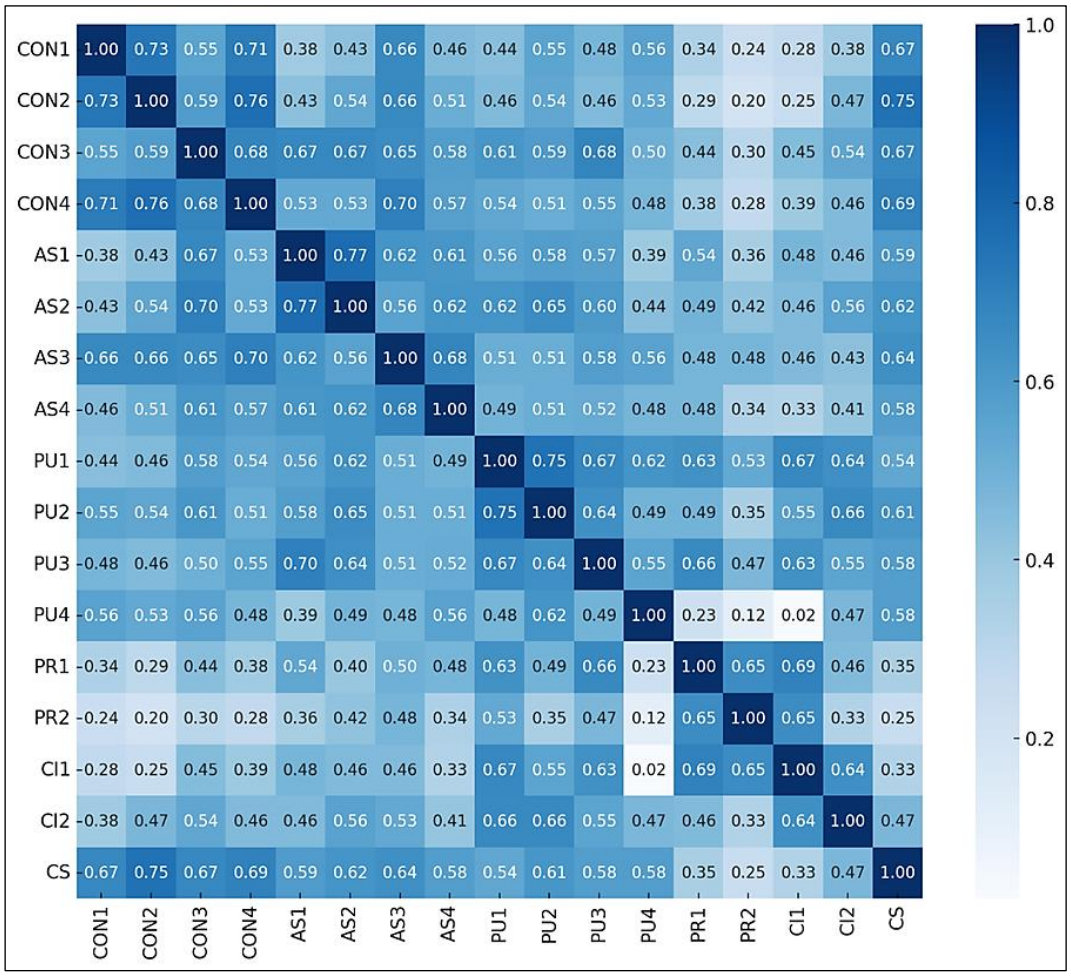

Figure 3: Correlation Heat-map of Items

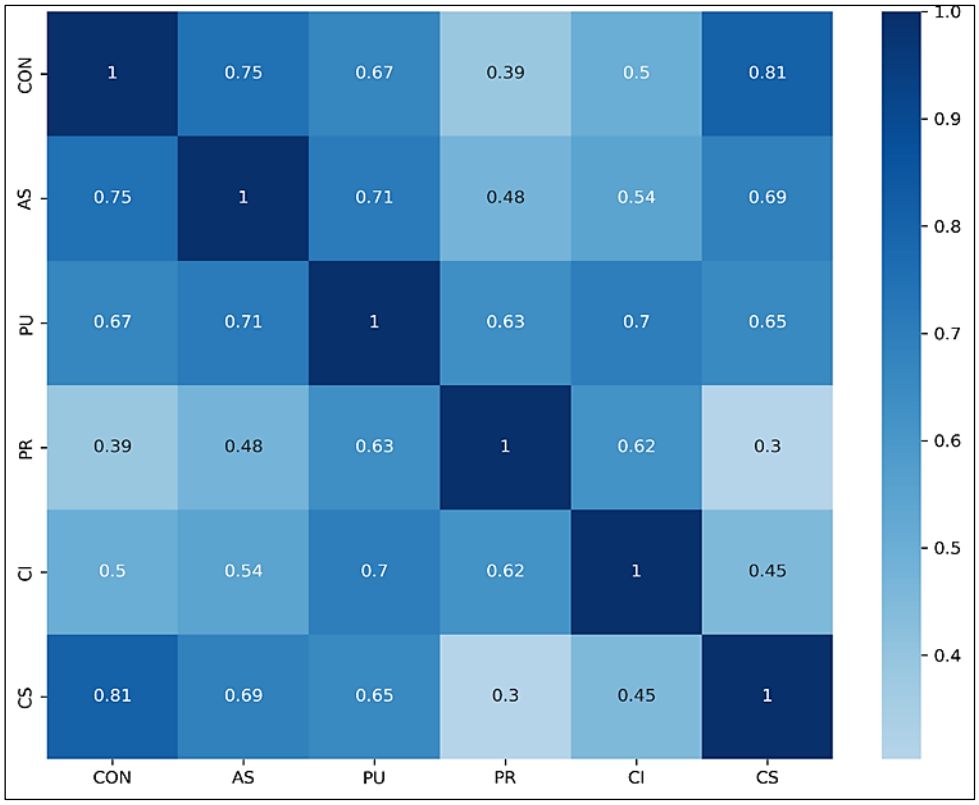

Figure 4: Correlation Heatmap of Variables

Figure 3 displays the correlation matrix for the variables in the model, indicating the relationships between individual items (e.g., CON1, AS1, PU1) and the constructs (e.g., CS, CON, AS). The diagonal values represent the highest correlations (1.00), confirming internal consistency, while off-diagonal values provide insight into the strength and direction of relationships across variables. Here, Figure 4, we have the collective impact of all variables associated with "CS" where they all have shown positive relation that means an increase in one variable is associated with an increase in the other one. CON has the largest correlation coefficient of 0.81 with regards to CS which indicates a strong positive relationship among all.

Regression Analysis

Dep. Variable:	CS	R-squared:	0.690
Model:	OLS	Adj. R-squared:	0.683
Method:	Least Squares	F-statistic:	86.56
Date:	Thu, 07 Sep 2023	Prob (F-statistic):	1.67e-47
Time:	14:11:44	Log-Likelihood:	-115.33
No. Observations:	200	AIC:	242.7
Df Residuals:	194	BIC:	262.4
Df Model:	5		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
const	0.5453	0.163	3.350	0.001	0.224	0.866
CON	0.5845	0.063	9.330	0.000	0.461	0.708
AS	0.1313	0.064	2.043	0.042	0.005	0.258
PU	0.2729	0.076	3.587	0.000	0.123	0.423
PR	-0.1104	0.040	-2.778	0.006	-0.189	-0.032
CI	-0.0064	0.048	-0.132	0.895	-0.101	0.089

Figure 5: Regression Results

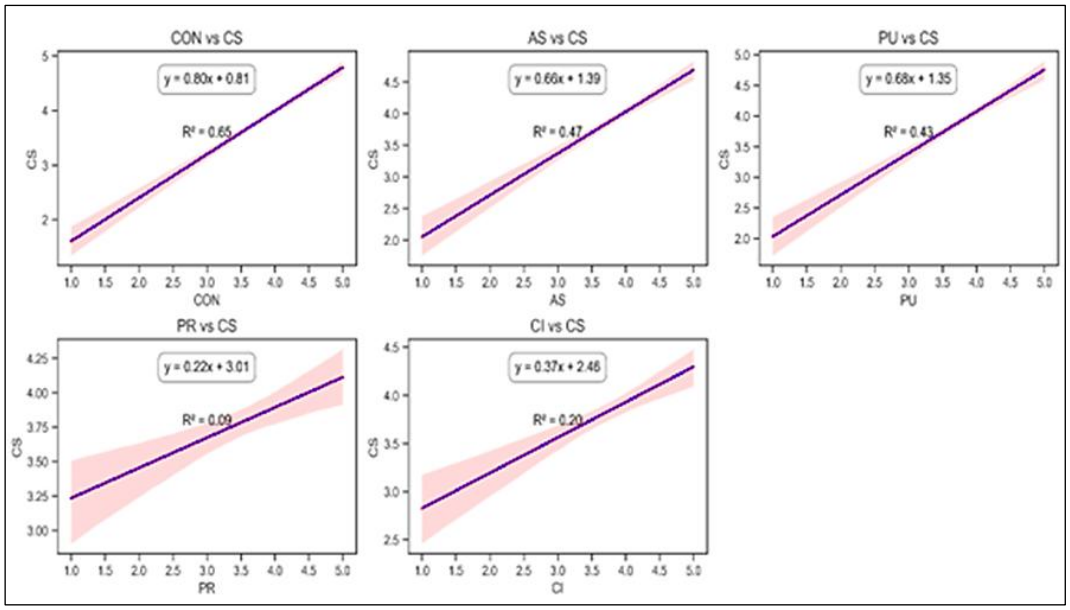

Figure 6: Regression Plots of Independent Variables vs Customer Satisfaction

In the regression analysis, I examined the relationship between Customer Satisfaction (CS) and all independent variables. Figure 5 presents the regression results, showing the linear relationships between independent variables (e.g., convenience, assurance & security, perceived usefulness) and customer satisfaction. If we look at the graph of CON vs. CS, we can see that about 65% of changes in CS can be explained by the change in CON as the value of R square is 0.65. Also, the equation CS = 0.80*CON + 0.81 represents a linear relationship between "Customer Satisfaction" (CS) and "Convenience" (CON). It indicates that for every one-unit increase in the "Convenience" variable, the Customer Satisfaction score is expected to increase by 0.80 units. Figure 6 illustrates the regression plots for independent variables against customer satisfaction. The plots demonstrate the strength of the positive relationship, particularly highlighting the significant impact of convenience on customer satisfaction.

Discussion

The statistical methods used in this study were carefully chosen to align with the research objectives and the nature of the data. SmartPLS was selected for its strength in handling complex relationships and latent constructs, making it suitable for exploring the impact of factors like Assurance & Security, Convenience, and Perceived Usefulness on Customer Satisfaction. Python simulations complemented this by offering a robust platform for iterative analysis, enabling the identification of convenience as the most influential variable. Regression analysis was employed to provide an additional layer of validation and to uncover insights not apparent in the PLS simulation, such as the significance of perceived risk, even though it explained only 9% of the variance. This dual-method approach ensures a comprehensive analysis by leveraging the strengths of both PLS and regression, thereby capturing nuances like the minimal impact of customer innovativeness on satisfaction. The methods used in this study minimize biases and account for confounding variables through careful selection and preprocessing. SmartPLS addresses multicollinearity and is robust with non-normal data, ensuring accurate assessment of relationships. Python simulations provided iterative testing for consistent findings, highlighting key variables like convenience. Regression analysis served as a secondary validation, uncovering additional effects like perceived risk. Results of the study showed that convenience (CON), assurance and security (AS) perceived usefulness (PU) have a significant positive impact on customer satisfaction (CS). As the banking and finance institutions introduce new FinTech products or services, they always try to focus more on customer convenience, data security and privacy of them and ensure customer usefulness in term of money or time. Therefore, the result is quite suited for the economy like Bangladesh. By combining these methods, the

study provides a multidimensional understanding of the factors influencing customer satisfaction, while acknowledging the limitations and unique contributions of each statistical tool.

Practical Implications of the Study

The implications of this study hold significant relevance for both the Fintech industry in Bangladesh and academic research. Understanding the factors influencing customer satisfaction within the context of Fintech services can have several practical and theoretical implications. To begin with, Fintech firms in Bangladesh can utilize the insights from this study to tailor their services to better meet customer expectations, ultimately improving the overall customer experience. Identifying and addressing the specific factors that influence satisfaction can lead to increased customer loyalty and advocacy. Following that understanding customer preferences and addressing their concerns can set these firms apart from competitors. As customer satisfaction tends to drive word-of-mouth recommendations, Fintech companies can use these findings to increase their market share in Bangladesh. The result can guide the regulatory bodies to develop Fintech policies which ensure the data protection and security of deposited money using FinTech products and services. Therefore, overall customer protection and market stability will be ensured. Moreover, the developer of FinTech products or services will get insights from the study to develop products and services which are more convenient, secure and useful rather than focusing more on innovation. Academically, this study highlights the importance of examining customer satisfaction in emerging Fintech markets like Bangladesh. It underscores the need for further research on this topic, as it is underexplored, and such studies can offer valuable insights for both practitioners and policymakers in shaping the industry. In conclusion, this study on the factors affecting customer satisfaction in the Fintech services of Bangladesh not only offers practical insights for industry players but also encourages further academic exploration in this field.

Limitations and Future Research Direction

Limitations

Although the research has achieved its set goals, certain limitations cannot be avoided. The first limitation of the study is its short duration. The study completed the survey within a limited time frame due to time constraints. One significant limitation of this research is the reliance on a small sample size for data collection and analysis. This limitation might have affected the generalizability and statistical power of the findings. As the sample size was small, the results may not accurately represent the broader population of Fintech users in Bangladesh, leading to potential biases and limited applicability. Not all individuals invited to participate in a survey actually do so. Those who choose not to participate may have different perspectives or experiences, introducing non-response bias. It's possible that there are other factors we didn't explore that could also affect how satisfied customers are. As the field of study is continually evolving, and new factors may emerge over time that were not previously recognized or explored. Due to resource and time constraints, this study focused on a very limited number of items

Future Research Direction

Increasing sample size and diversity allows for stronger generalizability of study results. With a larger, more diverse sample, we can better represent the broader population and draw conclusions that are more relevant to diverse groups and contexts. In light of the current study's findings and recognizing the need for a more comprehensive exploration of our research topic, future research should consider the inclusion of additional items. This will give us a more comprehensive understanding of the factors influencing customer satisfaction. Looking ahead, we aim to expand the range of variables (factors) we investigate in our research. This will help us get a better and more complete picture of what makes customers happy. However, there are opportunities to conduct more in-depth studies on this topic by considering environmental variables that can create a better model for FinTech adoption. Our goal is to keep up with the changing needs and preferences of customers, and by doing this, we hope to keep providing useful information in the field of customer satisfaction research.

Conclusion

The principal objective of this research was to explore a range of factors in Fintech services that could potentially impact customer satisfaction.

Our analysis, which utilized both SmartPLS and Python simulation, has unveiled the significant impact of Assurance & Security, Convenience, and Perceived Usefulness on Customer Satisfaction. On top of that, the Python-based simulation has yielded a noteworthy finding: among these factors, and further highlighted convenience as the most influential variable affecting customer satisfaction. From the regression analysis, we came to know the significance of perceived risk over customer satisfaction that we had not encountered in PLS simulation, though only 9% of the variance in the dependent variable is explained by the independent variable. However, in both cases customer innovativeness did not show much significance over the relation with customer satisfaction. Bangladesh's FinTech industry has really taken off in the last few years, and it's totally changing the way it provides financial services to its customers. There are lots of FinTech companies that offer all kinds of different products and services to meet the changing needs of our customers, which mean more and more people, are happy with their financial services. Despite the rising use of FinTech products and services in Bangladesh, consumer satisfaction remains low. This gap demonstrates that certain barriers are keeping people from properly accepting and enjoying these services. In the realm of business and service industries, understanding and enhancing customer satisfaction is a critical endeavor. This study has sought to shed light on many factors that influence a customer's overall satisfaction with products, services, or experiences. Throughout this exploration, we have delved into several key elements that play a pivotal role in shaping customers' perceptions and overall satisfaction. From the quality of products and services to the effectiveness of communication, from the ease of accessibility to the trustworthiness of a brand, all these factors intertwine to create a holistic customer experience.It's clear that a thorough understanding of these factors is vital for businesses wanting to excel in today's competitive marketplace. Businesses that prioritize customer satisfaction by continually monitoring, adjusting, and improving their strategies based on customer feedback are more likely to grow and build lasting relationships with their customers. Additionally, in the age of social media and online reviews, just one negative customer experience can have far-reaching consequences. Therefore, organizations must prioritize customer satisfaction not only as a business strategy but also as a fundamental aspect of their company culture.

Abbreviations

Fin-Tech: Financial Technology, PLS-SEM: Partial Least Squares Structural Equation Modeling, MFS: Mobile Financial Services.

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Author Contributions

Aisha Rahmot Ananna led the research design, manuscript drafting, and data collection. Sadman Kabir conducted data analysis and contributed to manuscript refinement. Md. Solaiman Hossain provided supervision and methodological guidance. Azharul Islam managed project resources and review processes, while S.M. Masudur Rahman supported data management and software use. Together, they ensured a thorough and effective study, demonstrating a strong collaborative effort.

Conflict of Interest

The authors declare no conflict of interest regarding the publication of this paper.

Ethics Approval

Not Applicable.

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