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Financial Innovation and its Impact on Financial Market

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Abstract

The study investigates the relationship between important financial technologies such as ATMs, point-of-sale systems, mobile payments, mobile money, mobile banking, and internet banking, as well as the effects of financial innovations on the financial market. The study, which polled 210 respondents from Nepali financial institutions, discovered that POS systems streamline retail payments while ATMs greatly improve the accuracy, user comfort, and efficiency of the financial market. Although there were problems with transaction speed, app dependability, and user interface design, mobile payment options were still reasonably convenient. Mobile payments enhanced user experience, security, and satisfaction in spite of these obstacles. Although there were still issues with accessibility and trust, mobile money services were seen positively for financial planning and market inclusivity. Although the convenience and dependability of mobile banking were praised, there was room for improvement in the functionality of the app. Although internet banking was commended for its accessibility and transparency, some users had trouble handling their money online. Strong relationships between ATMs, POS systems, mobile payments, and mobile banking and the financial system were discovered by the study, suggesting that these technologies have a beneficial impact on the market.

Keywords: Financial Innovation, Financial Market, ATMs, Point of Sale Systems, Mobile Payments, Mobile Money, Mobile Banking, Internet Banking, Financial System

Introduction

Even though there is still a lot of debate and research regarding the implications of this innovation, financial innovation plays a significant role in shaping the innovative financial markets. Understanding the ways in which these innovations affect the global financial markets' stability, effectiveness, and inclusivity is crucial (Achieng et al., 2015; Lashitew et al., 2019; Scott et al., 2017). Understanding how technological innovations impact the previously mentioned traits is crucial because the financial services sector is undergoing rapid change as a result of these

developments. The constantly changing world of digital finance, which is defined by innovations like automated trading systems, blockchain, and mobile banking, raises important issues regarding how these technologies affect systemic risks, regulatory frameworks, and market dynamics (Batiz-Lazo, 2018; Frame and White, 2012; Greenwood and Scharfstein, 2013). Since the world of digital finance is always evolving, these questions are pertinent. The availability of financial services to marginalised groups, the possibility of greater market efficiency relative to the risks of technological disruption, and the regulatory issues raised by these innovations are just a few of the crucial areas that require more research (Engelen et al., 2010; Khraisha and Arthur, 2018; Ozili, 2018). Further research is necessary in each of these specific regions.

Furthermore, there are still worries about the potential for abuse and the systemic vulnerabilities that financial innovations may introduce, even though they have demonstrated promise in terms of expanding access to financial services and lowering transaction costs (Henderson and Pearson, 2011; Diaz-Riney and Ibikunle, 2012; Boz and Mendoza, 2014). The potential for these innovations to be abused is the foundation of these worries. According to the research of Hausman and Johnston (2014) and Shiller (2013), it is critical that market participants and policymakers alike have a thorough grasp of the balance between innovation-driven growth and the need for regulatory oversight. The study's goals are to look at financial innovation and how it affects the financial market, as well as to discover how ATMs, points of sale, mobile payments, mobile money, mobile banking, internet banking, and financial systems are related to each other and how these factors affect the financial system.

Literature Review

Zavolokina, Dolata, and Schwabe (2016) look into how financial technology (FinTech) and its effects on innovation are portrayed in the media. According to their research, the business press highlights how disruptive FinTech—which includes peer-to-peer lending, blockchain, and mobile banking—can be. Because of the increasing demand for efficiency and transparency in financial services, the media frequently portrays these innovations as threats to traditional banking. According to the study, in order for lawmakers, financial institutions, and FinTech businesses to effectively manage financial innovation, it is imperative that they comprehend these media narratives. The relationship between financial innovation, ICT, and the growth of the financial sector is examined by Zacchaeus & Muturi (2018). They discover that ICT innovations, like internet usage and mobile phone subscriptions, have a positive effect on market efficiency and financial deepening. According to their research, banks in particular must adjust to technological advancements in order to promote innovation and improve their operational strategies, which will have an impact on the direction of financial services in the future.

Poon, Chow, Ewers, and Ramli (2020) concentrate on how human capital—specifically, specialised skills—helps Islamic financial institutions (IFIs) innovate. According to the study, knowledge of Shariah law and marketing techniques have less of an impact on innovation than experience in Islamic finance. In order to foster innovation in IFIs, the study emphasises the value of cognitive-technical skills like risk assessment and problem-solving, indicating that technical and financial know-how are crucial success factors in this industry. In their 2021 study, Lewandowska,

Bilan, and Mentel examine how financial assistance, specifically from EU Structural Funds, affects Polish SMEs' ability to compete. They discover that SMEs, especially micro-enterprises, which were the least successful at leveraging these funds, have not made full use of the financial assistance offered. According to the study, financial aid hasn't substantially increased competitiveness, even though it might raise demand. To optimise the effect of financial aid on SME competitiveness, the study highlights the necessity of improved resource allocation and strategic planning.

Ren et al. (2022) looked at how technological innovation affected corporate leverage in China's manufacturing sector and discovered that by encouraging innovation, market competition and government support lower corporate leverage. In their study of digital financial innovations in the COMESA region, Manasseh et al. (2023) highlighted the significance of macroeconomic stability and institutional quality while also demonstrating the beneficial effects of technologies such as mobile banking and ATMs on the development of financial systems. The impact of digital financial services on Nigeria's economy was examined by Appah et al. (2023), who concluded that web banking and point-of-sale services had a major influence on GDP growth and suggested measures to improve digital financial services in order to spur economic growth.

Parker, Schoar, and Sun (2023) investigate how retirement investors can obtain age-appropriate asset allocations through Target Date Funds (TDFs). Particularly following impressive market performances, their rebalancing strategy may lower stock returns for companies that are disproportionately invested in these funds. TDFs may have a greater effect on stock returns and market stability as they expand, affecting both the bond and equity markets. Michael (2024) emphasizes how innovation contributes to the prosperity of global financial hubs. Growth and competitiveness are fostered by innovative centres' ability to draw talent and investment. Though there are still issues like established hub competition and regulatory barriers, there are suggestions for promoting innovation through infrastructure investment and education.

Misati et al. (2024) investigate how digital financial technologies, specifically M-Pesa, can enhance financial inclusion and economic growth in Kenya. They discover that although digital financial innovation increases access to financial services, infrastructure and digital literacy gaps continue to be obstacles in rural and marginalized areas. Abbas et al. (2024) investigate the connection between digital financial innovation, business performance, and competition in Pakistan's product market. Although other factors influencing performance were not taken into consideration, their findings indicate that competitive markets improve performance, with digital financial innovation partially mediating this relationship. Ullah et al. (2024) examine how environmental quality, technological and financial innovation, and digitization relate to each other in OECD nations. Their results demonstrate that economic growth initially damages the environment before eventually improving it, which is consistent with the Environmental Kuznets Curve (EKC) theory. While technological innovation and digitalization may raise carbon emissions if not properly managed, financial innovation is associated with lower emissions.

In conclusion, these studies highlight the role that innovation plays in promoting market stability, economic growth, and environmental sustainability. They also highlight issues with access, regulation, and the environment.

Research Methods

The research design used in this paper is casual comparative. The impact of independent variables on the dependent variable as well as the relationship between the variables have been assessed using this research design. The study's population consists of all Nepali financial markets, financial institutions, investors, and customers using financial services. Purposive sampling was used to select 210 respondents as a sample of the population. The primary data served as the foundation for the study. Field survey techniques like questionnaire surveys, in-person interviews, and mail surveys based on structured questionnaires are used to gather data.

Table 1: Demographic Variables

Demographic Variable		Count
Gender	Male	113
	Female	97
Total		**210**
Age	Below 25	32
	25 to 35	48
	36 to 45	62
	45 and above	68
Total		**210**
Qualification	Intermediate	71
	Bachelors	85
	Masters and above	54
Total		**210**
Occupation	Students	32
	Service	45
	Agriculture	36
	Business Persons	52
	Others	45
Total		**210**
Monthly Income	Below 25000	45
	25000 to 40000	55
	41000 to 60000	72
	61000 and above	38
Total		**210**

(Source: Field Survey 2024)

Researchers need to know demographic details like age, gender, income, education, and occupation in order to comprehend the makeup of their sample and examine potential responses from various groups. These variables allow for more nuanced interpretations of the results by assisting in the identification of trends, patterns, and relationships within the sample. Additionally, they enable data segmentation, which improves generalizability and enables focused analyses. Designing

successful surveys, guaranteeing diverse representation, and deriving insightful research conclusions all depend on an understanding of these factors.

Results and Findings

A statistical technique for determining the direction and strength of a relationship between two or more variables is correlation analysis. It evaluates the relationship between changes in one variable and changes in another, offering information about possible correlations. This relationship is measured by the correlation coefficient, which normally ranges from -1 to +1. A coefficient near +1 denotes a strong positive correlation (two variables increase when one increases), while a coefficient near -1 denotes a strong negative correlation (two variables decrease when one increases). There is no meaningful correlation indicated by a coefficient close to 0. To find trends and guide decision-making, correlation analysis is frequently used in a variety of fields, such as finance, the social sciences, and health research. It's crucial to remember that correlation does not imply causation; changes in one variable do not necessarily resultin changes in another.

Table 2: Correlation Analysis

	FS	ATM	POS	MP	MM	MB	IB
FS	1						
ATM	0.202**	1					
POS	0.0196**	0.010	1				
MP	0.40	0.067	0.013	1			
MM	0.179**	0.070	0.178**	0.155*	1		
MB	0.164*	0.106	0.019	0.073	0.008	1	
IB	0.053	0.060	0.038	0.339**	0.096	0.025	1
*Note: Significant at *p<0.05, **<0.01 (2-tailed)*							

The correlation between the Financial System and Automatic Tailored Machine is statistically significant (r = 0.202, p = 0.003), indicating a moderate positive relationship. This suggests that improvements or enhancements in the financial systemare associated with a slight increase in the use or effectiveness of Automatic Tailored Machines. There is also a significant positive correlation between the Financial System and Pointof Sale systems (r = 0.196, p = 0.004). This relationship suggests that as the financial system becomes more robust, the implementation and usage of Point of Sale systems tend to improve as well.

The correlation between the Financial System and Mobile Payment is weak but significant (r = 0.179, p = 0.009). This indicates a positive association, suggesting that enhancements in the financial system may encourage the adoption or effectiveness of mobile payment solutions. The relationship between the Financial System and Mobile Money shows no significantcorrelation (r = 0.040, p = 0.561). This implies that changes in the financial system do not have a noteworthy impact on the use or success of mobile money services.

A weak positive correlation exists between the Financial System and Mobile Banking (r = 0.164, p = 0.017), indicating that while there is a relationship, it is not strong. Improvements in the financial system may have a minor positive effect on mobile banking adoption. The correlation with Internet

Banking is weak and not significant (r = 0.053, p = 0.447).This suggests that there is no meaningful relationship between the financial system and the adoption or effectiveness of Internet Banking services.

In summary, the Financial System demonstrates significant positive correlations with Automatic Tailored Machines, Point of Sale systems, Mobile Payments, and Mobile Banking, while it shows no significant relationship with Mobile Money and Internet Banking.

Regression Analysis

Regression analysis examines the relationship between a dependent variable and one or more independent variables. Understanding how independent variables affectdependent variables is the main goal. Researchers can predict, evaluate relationships, and identify trends by fitting a regression model to observed data. A linear regression model assumes a straight-line relationship, while multiple regression uses multiple predictors. Results are usually presented as coefficients showing relationship directionand magnitude. Economics, finance, social sciences, and healthcare use regression analysis to make decisions and assess causality. It helps find significant predictors andunderstand complex data patterns.

Table 3: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15.288	6	2.548	6.270	.000[b]
Residual	82.500	203	0.406		
Total	97.788	209			
a. Dependent Variable: Financial System					
b. Predictors: (Constant), Internet Banking, Mobile Banking, Point of sale, Automatic Tailored Machine, Mobile Money, Mobile Payment					

Table 3 shows the ANOVA results for the regression model analyzing the predictorsof the Financial System. The regression sum of squares is 15.288, with 6 degrees of freedom, resulting in a mean square of 2.548. The F-value is 6.270, and the associated significance level (Sig.) is 0.000, indicating that the model is statistically significant and that at least one of the predictors significantly influences the dependent variable. The residual sum of squares is 82.500, with 203 degrees of freedom, yielding a mean square of 0.406. The total sum of squares is 97.788, encompassing both the regression and residual components. The low p-value confirms that the overall regression model is effective in explaining variations in the Financial System, emphasizing the importance of the selected predictors in understanding the factors affecting it.

Table 4: Regression Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.472	0.902		2.739	0.007**
ATM	0.331	0.106	0.205	3.129	0.002**
Point of sale	0.314	0.085	0.243	3.697	0.000**
Mobile Payment	0.028	0.111	0.017	0.250	0.038*
Mobile Money	0.269	0.078	0.230	3.459	0.001**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Mobile Banking	0.199	0.088	0.147	2.267	0.024*
Internet Banking	0.035	0.095	0.026	0.370	0.012*
*Note: Significant at *p<0.05, **<0.01 (2-tailed)* *Dependent Variable: Financial System*					

Table 4 shows the regression coefficients for the Financial System model showing how independent variables affect it. The Financial System's baseline value when all predictors are zero is 2.472. An unstandardized coefficient of 0.331 and a standardized beta of 0.205 indicate that Automatic Tailored Machine predicts positively. This suggests that Automatic Tailored Machine improves the Financial System by 0.331 units per unit, making it a crucial contributor.

Point of Sale also has a strong positive relationship with the Financial System, with an unstandardized coefficient of 0.314 and a standardized beta of 0.243. Mobile Money follows closely with a coefficient of 0.269 and a beta of 0.230, highlighting its importance in financial system improvement. Mobile Banking's beta of 0.147 and Mobile Payment's coefficients of 0.199 and 0.028 indicate a significant impact. Mobile Payment is statistically significant but has a small impact. Internet Banking has the lowest unstandardized coefficient of 0.035 but still has a positive effect.

Discussion and Conclusion

The results of this study demonstrate that Automatic Tailored Machines (ATMs) increase the financial market's efficiency, which is consistent with those of Zacchaeus and Muturi (2018). Both studies demonstrate that while ATMs enhance user comfort and customer satisfaction, ongoing enhancements are still required to boost user confidence. This alignment highlights how important it is for the banking sector to innovate continuously in order to satisfy shifting consumer needs. In contrast to Manasseh et al. (2023), who demonstrated the transformative potential of digital financial innovations, the current study found no significant relationship between mobile money and the financial system. Although this study indicates that mobile money has not yet fully assimilated into the financial system, it has been demonstrated to enhance financial inclusion and access to financial services. Mobile money may encounter obstacles that reduce its efficacy despite its apparent advantages, necessitating more study into its uptake and operation.

The findings of the current study regarding online and mobile banking highlight the need for additional features while also pointing to positive user perceptions. This is in line with Ullah et al.'s (2024) finding that technological developments are dualistic, offering benefits but also carrying the risk of negative consequences. According to this analogy, digital banking services must be continuously improved to meet user expectations even though they are convenient. By looking at how financial innovations affect the financial market and analysing how important financial technologies like ATMs, point of sale (POS) systems, mobile payments, mobile money, mobile banking, and internet banking interact with the financial system, the study effectively achieves its goals. In line with the study's goal of looking at financial innovation, the results show that ATMs

and POS systems significantly improve user comfort, customer satisfaction, and the efficiency of the financial market. To increase user confidence and transaction efficiency even more, the study also identifies areas where these technologies need to be improved.

When it comes to examining the relationship between financial technologies and the financial system, the study finds that there are significant connections between the financial system and mobile banking, POS systems, ATMs, and mobile payments. This demonstrates that these developments improve market stability and have a positive impact on market inclusivity. However, the lack of a meaningful connection between internet banking and mobile money and the financial system points to possible areas for future development, especially with regard to enhancements in functionality, security, and accessibility. This demonstrates that although a number of innovations have a close connection to the financial system, certain technologies still need attention, which helps to partially achieve the study's second goal.

With ATMs and POS systems showing the most notable contributions, the regression and ANOVA analyses provide additional evidence of the beneficial effects of financial technologies on the financial system. As a result, the regression model explains some of the variance in the financial system, fulfilling the study's third goal, which was to examine how these technologies affect the financial system. The results fulfil the study's objectives while emphasizing the necessity for constant innovation and improvement. They indicate that while financial innovations are having a positive impact on market dynamics, there are still issues that must be resolved to fully realize their potential.

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