Trust and Security In Financial Technology: How Much Does It Matter?
OMKAR POUDELI PRADEEP ACHARYA

*Author affiliations can be found in the back matter of this article

CORRESPONDING AUTHOR:
Omkar Poudel
Birendra Multiple Campus, Chitwan
omkar60475@gmail.com

KEYWORDS
Financial technology
Security
Trust
Usage intention
PLS-SEM
Mediation

ABSTRACT
With the increase use of Fin-tech and increasing number of cashless transaction, the world is moving towards the digital revolution where people are using lesser amount of physical cash with every passage of time. With the increase of Fin-tech various issues related to security, risk, trusts are also in the increasing trend. Keeping this in mind, the purpose of the study is to examine the security factor and its impact on usage intention. At the same time the study examines the mediating role of trust between security of Fin-tech and usage intention. Data from 223 Fin-tech users have been collected via an online survey. The partial least square structural equation modeling (PLS-SEM) approach is then used to assess this data. The data and analysis showed that there is a substantial positive relationship between usage intention and security concerns with regard to Fin-tech, and that trust partially mediates this relationship.

1. INTRODUCTION
Sometimes referred to as “e-payments,” electronic payments, are a type of financial transaction that is facilitated by electronic communications between the buyer and supplier. Financial technology, or Fin-Tech, is a young field that can be defined as cutting-edge financial products and services made possible by information and communication technologies (ICT) (Puschmann, 2017). Financial literacy and education innovations are now included in Fin-Tech applications. Fin-Tech, which restructures and coordinates the flow of financial information, offers new models of value creation even though the function of ICT in financial institutions is not new (Dhar & Stein, 2017). Through methods of disintermediation, access expansion, hybridization, financialization, and personalization, Fin-Tech firms are changing traditional online financial models. The evolving importance of ICT has allowed the financial services sector to offer completely new, cutting-edge financial solutions (Karagiannaki et al., 2017). The most crucial step once a client decides to pay for a goods and services is, to conveyance payments from clients to retailers in the most effective, efficient, and hassle-free manner possible. This is accomplished by using electronic payment systems (EPSs). The initial step in addressing the requirement for online payments was to use already-existing payment systems from the offline world (Abrazhevich, 2004).

As internet usage grew, the idea of e-commerce changed, and the
emergence of financial technology initially happened on e-commerce platforms. Fin-tech, or financial technology, has grown in popularity recently. Today, a wide range of applications employ financial technology, with online payment systems being the most well-known. Technology developments have accelerated the transition from cash to cards, then from cards to online payments. These include prepaid cards, virtual cards, money orders/electronic fund transfers (EFT), mobile wallets, online wallets, debit cards, credit cards and many more (Khan et al., 2017).

Effective EPSs differ from conventional payment systems in a variety of ways, but they must also be secure (Kim et al., 2010). Consumers are growing more worried about security concerns as the quantity of goods and services available online quickly increases (Agarwal, Reeti, 2009). Security, in general, is a collection of protocols, techniques, and computer programs that authenticate the information’s source and ensure the process. Recently, a lot of EPSs have appeared on the Internet; nevertheless, despite the fact that these EPSs have different security processes and safeguards in place, numerous security issues still exist. As a result, it’s becoming more important to reduce the risks involved with e-payment transaction procedures. Because most EPS users are not very knowledgeable with the technical aspects of the systems, they frequently gauge the security of the EPS primarily on their user interface usage.

Therefore, it is essential to improve consumer perceptions of security and uphold customers’ trust during e-payment transactions in order to draw in and keep e-payment users (Kim et al., 2010). When each step of the e-payment process meets participants’ demands and their security expectations, it is deemed secret. All participants must have complete faith in the system in which they engage as a fundamental requirement. Data, identities, and role behavior must all be taken into account when determining how much trust to place in an e-payment system. Trust and risk must be occupied into description when determining embracing behavior for e-commerce (Tsioskis, 2005).

2. REVIEW OF THE LITERATURE
2.1 SECURITY

According to Kim et al. (2008), perceived security mentions to the consumer's confidence that the facility provider would uphold security standards including authentication, integrity, and encryption. The number of security precautions used by the vendor determines how secure the buyer feels while making an online purchase (Friedman & Kahn Jr., 2000). When security features and protection mechanisms (encryption, protection, SSL authentication, etc.) are present on the bank’s website, and more particularly in the m-banking application, one may tell that the seller intends to ensure the security standards needed during online transactions (Chellappa & Pavlou, 2002).

2.2 TRUST

According to Mayer et al. (1995), trust may be seen as one party’s desire to be exposed to another party’s actions based on expectations of how the second party, to whom the trust is directed, will behave in a certain situation. The authors claim that the aforementioned susceptibility is connected to a propensity to take chances while keeping in mind the possibility of losing something significant.

Mobile transactions have many of the same hazards that internet transactions do. Mobile trust research, however, is still in its infancy compared to the plethora of internet trust studies (Zhou, 2011). Siau and Shen (2003) found that factors related to the provider and mobile phone technology had an impact on mobile trust. According to Li and Yeh (2010), application design has an impact on confidence in mobile technology through usability, perceived utility, and customization.
2.3 USE OF INTENTION

Afshan and Sharif (2016) assert that with high level of doubt and related perils stuck between the parties participating in e-commerce and mobile commerce, trust theatres a preeminent part in these environments. As a result, trust is now a factor in m-banking purpose and use. The conduct of customers who are devoted to a business and would be prepared to promote it to others since the business has provided them with outstanding service is referred to as behavioral intention by Namkung and Jang (2007). According to Shiau (2014), a person's subjective likelihood of engaging in a certain activity that shows their readiness to adopt another person's conduct defines their behavioral intention.

2.4 HYPOTHESIS DEVELOPMENT AND RESEARCH FRAMEWORK

2.4.1 RESEARCH FRAMEWORK

![Conceptual Framework](image)

Figure 1: Conceptual Framework

2.4.2 HYPOTHESIS DEVELOPMENT

PS influence behavioral intentions in a favorable way (Flavián & Guinaliu, 2006). Mobile wallets fashion more security questions than outmoded payment means since they entail the storing and transfer of financial and personal information. Several research studies have publicized that security has a favorable sway on people’s intentions to make purchases online (Yousafzai et al., 2003). Security has been explored as a vital determinant of online buying intent. Security and privacy concerns were identified by Thakur and Srivastava (2013) as major blocks to the adoption of mobile business in their study conducted in the Indian environment. When Patel and Patel (2018) looked at how online banking was used in India, they bare that perceived security has a favorable impact on users’ intentions to utilize the service.

Hypothesis-1

H$_1$: There is significant positive relation between security and usage intention.

H$_2$: There is no relation between security and usage intention.

There is a dearth of research on trust in e-banking, much of which focuses on e-commerce in general (Bitkina et al., 2022). Honesty, goodness, and competence were the three primary components of trustworthiness that Mayer et al. (1995) discovered and verified (Bitkina et al., 2022). According to the research, e-consumers' views of trust may directly or indirectly affect their intentions to make a purchase. Trust beliefs will subsequently have a favorable effect on customers' intention to engage in online banking transactions because they give customers confidence that the bank is able (competence) and willing (benevolence and honesty) to deliver the services in accordance with their expectations (Bitkina et al., 2022).

Hypothesis -2

H$_3$: There is no relation between trust and usage intention.
H₄: There is the significant positive relation between trust and usage intention.

According to studies that make available some intuition into the linking between perceived security and consumers' attitudes toward using mobile payments, perceived security has a favorable influence on such attitudes (Shah et al., 2014). A previous learning by Gupta & Dhani, 2015) and (Kim et al., 2010) both found a substantial and undeviating association between perceived security and trust. In order to foster trust over the internet, Chellappa and Pavlou (2002) also emphasized the significance of perceived security. Finally, (Widyastuti et al., 2017) note that one of the hitches in developing an e-payment structure is security, which may or may not influence users' decision to use the system.

Hypothesis-3
H₅: There is no relation between security and trust.

H₆: There is the significant positive relation between security and trust.

Hypothesis-4

H₇: The relation between security and usage intention is not mediated by the trust.

H₈: The relation between security and usage intention is mediated by the trust.

3. RESEARCH METHODOLOGY
3.1 INSTRUMENT DEVELOPMENT

All constructs were graded on a five-point Likert scale that ranged from "strongly disagree" to "strongly agree." The items were all taken from erstwhile research. Items were changed to meet the research topic of e-payment uptake. The items for usage intention are from prior study Davis, (1989), the items for security are from Yousaafzai et al., (2010), and the item for trust is from (Lee & Chung, 2009).

3.2 DATA COLLECTION

With the use of Google Forms, a survey was performed online for the study purposes. The research questionnaire was alienated into two segments, the first of which queried about the respondents' age, gender, education, and age group as well as their demographics, and the second of which asked about the study constructs (trust, security and usage Intention). According to Cochran’s formula, the required sample size would be approximately 228 respondents in order to achieve a 95% confidence level, a 6.5% margin of error, and assuming a 50% response distribution, where 400 questionnaire were distributed through Google form and only 235 responses were received where the 12 responses were excluded for analysis process and remaining 223 responses were used for analysis process.

3.3 DATA ANALYSIS METHOD

The four hypotheses were investigated by means of PLS-SEM, and the data from the respondent surveys was analyzed descriptively using SPSS version 24. For the investigation of theory generation and prediction causal models, PLSSEM is based on a complex factor model (Hair et al., 2011). The measurement model and the structural model are the two components of the PLS-SEM model. The former examines the reliability and validity of latent variables (Ringle et al., 2020). The latter examines how latent factors interact and impact one another and calls for latent variable path analysis (Hair et al., 2016).

4. DATA ANALYSIS
4.1 DEMOGRAPHIC CHARACTERISTICS
Table 1: Demographic profile of the respondents

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Category</th>
<th>Frequency (n = 223)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>115</td>
<td>51.6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>108</td>
<td>48.4</td>
</tr>
<tr>
<td>Age Group</td>
<td>18-25</td>
<td>77</td>
<td>34.5</td>
</tr>
<tr>
<td></td>
<td>26-35</td>
<td>96</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>36-45</td>
<td>38</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>46-55</td>
<td>12</td>
<td>5.4</td>
</tr>
<tr>
<td>Education</td>
<td>High School</td>
<td>50</td>
<td>22.4</td>
</tr>
<tr>
<td></td>
<td>Bachelors</td>
<td>98</td>
<td>43.9</td>
</tr>
<tr>
<td></td>
<td>Masters</td>
<td>67</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Above Masters Level Education</td>
<td>8</td>
<td>3.6</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Student</td>
<td>58</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Employed</td>
<td>79</td>
<td>35.4</td>
</tr>
<tr>
<td></td>
<td>Self Employed</td>
<td>44</td>
<td>19.7</td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td>42</td>
<td>18.8</td>
</tr>
</tbody>
</table>

4.2 MEASUREMENT MODEL

Using SmartPLS 4.0, structural and measurement models were both tested. The measuring model's convergent and discriminant validity was examined. Factor loadings, Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE) were used to assess convergent validity (Tenenhaus et al., 2005). A composite reliability of higher than 0.7, an outer loading of all items greater than 0.7, and an average variance extracted (AVE) bigger than 0.5 (Hair et al., 2016). As a consequence, Table 2 demonstrates that all conditions for convergent validity have been satisfied. The heterotrait-monotrait (HTMT) criteria is used to assess discriminant validity, which assesses measurements that are not meant to be associated and are unrelated (Hair et al., 2016). The conventional level of discriminant validity, according to (Henseler et al., 2015), is less than 0.90, and Table 3 shows that discriminant validity is established.

Table 2: Convergent validity test results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Outer Loading</th>
<th>Cronbach's alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU1</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITU2</td>
<td>0.782</td>
<td>0.827</td>
<td>0.839</td>
<td>0.745</td>
</tr>
<tr>
<td>ITU3</td>
<td>0.912</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC1</td>
<td>0.807</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC2</td>
<td>0.776</td>
<td>0.856</td>
<td>0.859</td>
<td>0.634</td>
</tr>
<tr>
<td>SEC3</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC4</td>
<td>0.764</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC5</td>
<td>0.812</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRU1</td>
<td>0.856</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRU2</td>
<td>0.834</td>
<td>0.818</td>
<td>0.822</td>
<td>0.733</td>
</tr>
<tr>
<td>TRU3</td>
<td>0.878</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ITU= Usage Intention, SEC= Security, TRU= Trust
Table 3: Discriminant validity heterotrait-monotrait (HTMT) criterion

<table>
<thead>
<tr>
<th>Variables</th>
<th>ITU</th>
<th>SEC</th>
<th>TRU</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC</td>
<td>0.811</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRU</td>
<td>0.772</td>
<td>0.78</td>
<td></td>
</tr>
</tbody>
</table>

ITU= Usage Intention, SEC= Security, TRU= Trust

4.3 STRUCTURAL MODEL

We initially explored the problem of collinearity in the research regression to guarantee that it was free of bias and that the independent variables in the regression model were not associated before evaluating the study’s hypotheses. As a result, beforehand appraising the structural model, it is critical to check the variance inflation factor (VIF) scores. Table 4 demonstrates that the VIF scores of all variables are smaller amount than 3.3, indicating that multi-collinearity is not a possibility (Hair et al., 2016).

Table 4: Variance inflation factor (VIF) results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ITU</th>
<th>SEC</th>
<th>TRU</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEC</td>
<td>1.752</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRU</td>
<td>1.752</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ITU= Usage Intention, SEC= Security, TRU= Trust

Table 5: Structural model and hypothesis testing

Direct Effect

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Beta</th>
<th>STDEV</th>
<th>T-Stat</th>
<th>P values</th>
<th>Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC -&gt; ITU</td>
<td>0.465</td>
<td>0.073</td>
<td>6.332</td>
<td>0.000</td>
<td>Supported HA</td>
</tr>
<tr>
<td>SEC -&gt; TRU</td>
<td>0.655</td>
<td>0.049</td>
<td>13.394</td>
<td>0.000</td>
<td>Supported HA</td>
</tr>
<tr>
<td>TRU -&gt; ITU</td>
<td>0.337</td>
<td>0.074</td>
<td>4.538</td>
<td>0.000</td>
<td>Supported HA</td>
</tr>
</tbody>
</table>

Indirect Effect

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Beta</th>
<th>STDEV</th>
<th>T-Stat</th>
<th>P values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC -&gt; TRU -&gt; ITU</td>
<td>0.221</td>
<td>0.055</td>
<td>4.018</td>
<td>0.000</td>
<td>Supported HA</td>
</tr>
</tbody>
</table>

The table 5 represent the hypothesis testing through structural model, the tables concluded that all the alternative hypothesis are supported, it shows hypothesis -1 (HA: SEC -> ITU, : 0.465, T-Stat: 6.332, P-value: 0.000), security of the financial technology has strong and significant positive relation with the usage intention, similarly the hypothesis -2 (HA: TRU -> ITU, : 0.337, T-Stat: 4.538, P-value: 0.000) is also supported which shows trust in the financial technology has significant positive relation with usage intention. Likewise the hypothesis -3 (HA: SEC -> TRU, : 0.655, T-Stat: 13.394, P-value: 0.000) under the study showed the positive relation of security with trust.

And again the alternative hypothesis for the mediation of the trust between the security and usage intention is also supported which is the fourth hypothesis under the study (HA: SEC -> TRU -> ITU, : 0.221, T-stat: 4.018, P-value: 0.000), which indicated the presence of some mediating factor of trust between security and usage intention. But the important point here is that both HA of hypothesis-1 (SEC -> ITU) and hypothesis-4 (SEC -> TRU -> ITU) are supported that indicated the presence of the partial mediation of trust between the security and usage intention.
Figure 2: Structural Model

5. CONCLUSION AND DISCUSSION

The figure of individuals with entree to mobile devices and the internet is growing, which is assisting the world’s transition to a cashless society (Liénabe-Cabanillas et al., 2020). In emerging countries like Nepal, fin-tech is still in its infancy and has a long way to go before it grows fully. Data security is a significant concern in the fin-tech industry since financial data is typically sensitive and confidential. The security component has a positive effect since it solidifies the community’s usage of digital payments as a means of payment in everyday commercial transactions.

Since consumers must disclose all of their private and sensitive financial information online or on web-based platforms while utilizing financial technology, people are especially concerned about security. Security concerns influence a customer's decision to use financial technology, claim Flavián and Guinaliu (2006). Pin Luarn (2005) also emphasized the menaces related to data security trials and worries about data communication as crucial factors that significantly influenced consumers' willingness to adopt electronic message and conveyance channels. Similar to this, our study initiate that security is an important aspect of usage intention.

Trust has always been highly valued in financial technology, and its relationship to security cannot be disregarded. Perceived security and trust have a substantial and linear link, per Gupta and Dhami (2015) and Kim et al.(2010) research. People’s willingness to use financial technologies in a society where cash is not often utilized relies on how much they trust these services. Our research also came to the conclusion that security and trust have a similar link in light of this finding.

A person’s preparedness to be open to the responses of alternative person depends on their expectancy that they would transmit out certain activities connected to their trust, claim McKnight et al.(2011). They could also be careless with their ability to monitor the expectations of others. Nor and Pearson (2008) have shown that attitudes and trust are connected to whether or not people adopt online banking. This study offered proof that trust influences intention to utilize technology in the Nigerian context. Consistency was also found in studies like Lee( 2009) and Paul and Fygenson (2006). These results illustrated the relevance of technological innovation in the financial sector as well as the importance of client trust in new technologies.

The study’s objective was to get a better thoughtful of the connection between security and consumers' use intentions via the trust route. The study’s findings demonstrate the partial mediation of trust between security and
consumers' usage intentions of digital payment technologies, supporting both the direct and indirect impacts. Security risks are expanding along with the use of cashless transactions. Financial technology must thus make sure that security features are effectively deployed and, via this, must seek to gain the trust of customers. Customers are concerned about their security, according to the statistics. As a result, the adoption of financial technology is largely influenced by consumer faith in these systems and their security.

AUTHOR AFFILIATIONS

Omkar Poudel
Assistant Professor of Economics
Birendra Multiple Campus
TU, Bharatpur, Chitwan, Nepal

Pradeep Acharya
Freelance Researcher, MBA
Trihubvan University, Kathmandu, Nepal
pradeep.acharya197@gmail.com

REFERENCES


