



Evaluating the Role of Perceived Usefulness and Ease of Use in the Adoption of "Tax Asaan" Mobile Application: An Application of the Technology Acceptance Model

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Abstract: Digital taxation regimes have emerged worldwide as a standard practice to help improve efficiency, transparency, and convenience. The Federal Board of Revenue (FBR) launched its mobile application named "Tax Asaan" to enhance tax-related services in Pakistan. But aspects of behavior and software technology that shape user uptake are under-researched. Drawing from the TAM theory, this study aims at analyzing what influences the taxpayers will to use the application. A cross-sectional quantitative survey was performed amongst the taxpayers of Pakistan with 369 valid responses that were obtained through a questionnaire with 7-point Likert-scales. The results were analyzed using the software of SPSS 23 and SmartPLS 4 using the method of Partial Least Squares Structural Equation Modeling (PLS-SEM). Measurement model has reached acceptable reliability and validity with Cronbach's alpha ranging from 0.855 to 0.927. In addition, the results of structural models showed that the factor of perceived usefulness showed the largest positive coefficient to perceived ease of use (0.852), followed by the positive coefficients of attitude (0.661) and behavioral intention (0.573). Attitude and ease of use had a significant positive impact on behavioral intention while perceived risk had a significant negative impact on attitude as well as behavioral intention. The model accounted for a total of 47.4% of the variance in behavioral intention. The results have shown that the factors which drive the adoption are primarily usability and utility while the main barrier is found to be perceived risk. Policymakers can work on improving the usability of applications, emphasizing the practical benefits, and improving security protocols to create trust amongst users while promoting digital tax reforms.

Introduction

The delivery of public services has forever changed due to COVID-19. Government is exploring technology to make services more efficient, publish information legibly and easily accessible for its citizens to access [1]. A clear example of this is the tax administration. Electronic tax (e-tax) systems can make the filing of the returns easier, reduce compliance costs, enhance records and boost revenue

collection. Their success, however, will rely on taxpayers' willingness to utilize them. Even though the government of Pakistan has been facing the problem of lengthy procedures, difficult procedures, delays in processing and less documentation in the system for long [2]. Enrolment, filing of returns, payments and tax queries needed to be performed in tax offices by the taxpayers. These are traditional methods which are slow, inefficient and prone to errors [3]. They may also be associated with the underreporting of tax payments, tax evasion and a narrow tax base. To improve the system, Federal Board of Revenue (FBR) has taken a number of steps to transform the systems. The one of the major initiatives undertaken is the Tax Asaan mobile application which has been created to give the tax filing process a more user friendly experience to taxpayers for accessing some tax services [4]. The application aims to harness the power of the mobile to save time, overcome the barriers of the process and improve the delivery of the services. But, there's no guarantee that people will use a digital platform once it is in place. The different rates of adoption indicate that there are both technological and behavioral aspects of adoption that affect uptake. It suggests that there are two factors which are especially important – perceived usefulness (does the users perceive the system as valuable or not?), perceived ease of use (is the system easy and/or convenient to use for the users or not?). Additionally, the perceived risk is crucial in e-taxation. A lack of privacy, security and reliability of systems may deter users from using digital services [5].

The studies on mobile application of tax application in developing countries are still limited and in case of Pakistan the studies on mobile application of tax application adoption is still in its infancy [6]. This study will be conducted using the Tax Asaan mobile application as an application and the TAM model will be used to analyze the intention of taxpayers to use the Tax Asaan mobile application. The findings might help guide policy makers in the design of digital tax policy and more engagement with taxpayers.

Methodology

Descriptive survey research design with quantifiable approach was followed in the current study to identify the factors affecting the intention of taxpayers with reference of 'Tax Asaan mobile application' in Pakistan.

Study Population & Sampling

The population of Pakistan was divided into target population (active tax payers) and non-target population (inactive tax payers) of the population of Punjab. The data were gathered using an online survey, which was conducted using a structured questionnaire, shared via Google forms. Convenience sampling was used since the respondents were spread out geographically and the internet was available. 400 questionnaires were sent out of which 369 were received and usable.

Pilot Testing

The questionnaire was proactively tested to assess the clarity, wording and content appropriateness for a pilot study. Some minor edits have been made to facilitate ease of reading and understanding in light of the feedback given by the participants.

Data Analysis

The analysis of demographic profiles and descriptive statistics was done using SPSS (version 23). The fit assessment of the measurement model and structural model was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) using the computer program SmartPLS 4. The reliability of indicators was tested using Cronbach's alpha and composite reliability (CR) and convergent validity was examined using the average variance extracted (AVE). In addition, according to the Fornell-Larcker criterion, discriminant validity was confirmed.

Ethical Considerations

Survey was anonymous and voluntary. The respondents were told that the information would only be used for academic research.

Results

Variable	Category	Frequency	Percentage (%)
Gender	Male	277	75.1
	Female	92	24.9
Education	Master's	132	35.8
	Graduate	115	31.2
	Intermediate	122	33.1
Profession	Employed	195	52.8
	Self-employed	174	47.2
Monthly Income (PKR)	>60,000	73	19.8
	60,001 to 70,000	65	17.6
	70,001 to 80,000	91	24.7
	80,001 to 90,000	79	21.4
	≥90,001	61	16.5

369 valid responses were analyzed. The majority of the respondents was made up of male students (75.1%). 35.8% of the respondents had Master's level status, 33.1% were of intermediate and 31.2% of Graduate. Just over half were in employment (52.8%) of whom 47.2% were self-employed. The largest income group earned PKR 70,001–80,000 per month (24.7%).

Construct	Items	Mean Range	SD Range	Cronbach's α	CR	AVE
Attitude (ATT)	4	5.02–5.20	1.25–1.45	0.908	0.935	0.784
Behavioral Intention (BI)	3	4.62–4.85	1.30–1.44	0.855	0.911	0.774
Perceived Ease of Use (PEOU)	5	5.13–5.25	1.15–1.25	0.925	0.943	0.769
Perceived Risk (PR)	3	3.45–4.02	1.14–1.23	0.858	0.907	0.766
Perceived Usefulness (PU)	5	5.06–5.27	1.16–1.26	0.927	0.945	0.774

Abbreviations: CR = Composite Reliability, AVE = Average Variance Extracted.

Mean scores for the positive attitudes toward Attitude, Perceived Ease of implication and Perceived Usefulness were superior than 5.0 on the 7-point scale in general. There were moderate agreements in the case of Behavioral Intention and comparatively low scores in Perceived Risk. The internal consistency of all constructs was good with α values ranging from 0.855 to 0.927 in reliability testing. The composite reliability for each item was above 0.9 and all the AVE values were above 0.5, demonstrating good convergent validity.

Table 3. Discriminant Validity (Fornell-Larcker Criterion)

Construct	ATT	BI	PEOU	PR	PU
Attitude (ATT)	0.885				
Behavioral Intention (BI)	0.545	0.880			
Perceived Ease of Use (PEOU)	0.700	0.678	0.877		
Perceived Risk (PR)	-0.250	-0.233	-0.235	0.875	
Perceived Usefulness (PU)	0.679	0.676	0.852	-0.228	0.880

The Fornell-Larcker criterion was used to test the discriminant validity. The results of the correlation matrix showed that between the independent variables, Perceived Ease of Use and Perceived Usefulness had the highest positive correlation ($r = 0.852$). On the other hand, Perceived Risk was negatively correlated with all the other constructs of the conceptual model.

Table 4. Structural Model Results and Hypothesis Testing

Hypothesis	Path	β	t-value	p-value	Decision
H1	ATT $\rightarrow$ BI	0.127	3.357	0.001	Supported
H2	PEOU $\rightarrow$ ATT	0.431	7.995	<0.001	Supported
H3	PEOU $\rightarrow$ BI	0.629	22.323	<0.001	Supported
H4	PR $\rightarrow$ ATT	-0.081	3.629	<0.001	Supported
H5	PR $\rightarrow$ BI	-0.077	2.904	0.004	Supported
H6	PU $\rightarrow$ ATT	0.661	20.373	<0.001	Supported
H7	PU $\rightarrow$ BI	0.573	21.296	<0.001	Supported
H8	PU $\rightarrow$ PEOU	0.852	47.547	<0.001	Supported

Model Fit and Explanatory Power

Indicator	Value
SRMR (Saturated Model)	0.062
SRMR (Estimated Model)	0.063
R ² (ATT)	0.522
R ² (BI)	0.474
R ² (PEOU)	0.727

All hypothesized relationships were significant. Perceived usefulness exerted a positive influence on perceived ease of use ($\beta = 0.852$, $p < 0.001$), attitude ($\beta = 0.661$, $p < 0.001$), and behavioral intention ($\beta = 0.573$, $p < 0.001$). Additionally, perceived ease of use had a high and significant direct positive influence on attitude and behavioural intentions. Perceived risk was negatively associated with attitude and behavioral intention, as contrasted. The overall fit of the model was acceptable as seen by the value of SRMR (SRMR = 0.063). The model explained 52.2%, 47.4% and 72.7% of the variance in attitude, behavioral intention, and perceived ease of use, respectively.

Table 5. Indirect and Total Effects**A. Significant Indirect Effects**

Path	Indirect Effect (β)	t-value	p-value
PEOU $\rightarrow$ BI (via ATT)	0.055	3.334	0.001
PR $\rightarrow$ BI (via ATT)	-0.010	2.528	0.012

PU → ATT (via PEOU)	0.368	7.735	<0.001
PU → BI (overall indirect)	0.573	21.296	<0.001
PU → BI (via PEOU)	0.489	13.833	<0.001
PU → BI (via ATT)	0.037	2.485	0.013
PU → BI (via PEOU → ATT)	0.047	3.332	0.001

B. Total Effects

Path	Total Effect (β)	t-value	p-value
ATT → BI	0.127	3.357	0.001
PEOU → ATT	0.431	7.995	<0.001
PEOU → BI	0.629	22.323	<0.001
PR → ATT	-0.081	3.629	<0.001
PR → BI	-0.077	2.904	0.004
PU → ATT	0.661	20.373	<0.001
PU → BI	0.573	21.296	<0.001
PU → PEOU	0.852	47.547	<0.001

The Indirect effect analysis showed a noteworthy positive mediation effect of Perceived Utility on Attitude, and some positive mediation effects of Perceived Usefulness in Behavioral Intention in a mediated analysis. The strongest indirect pathway was PU → PEOU → BI .

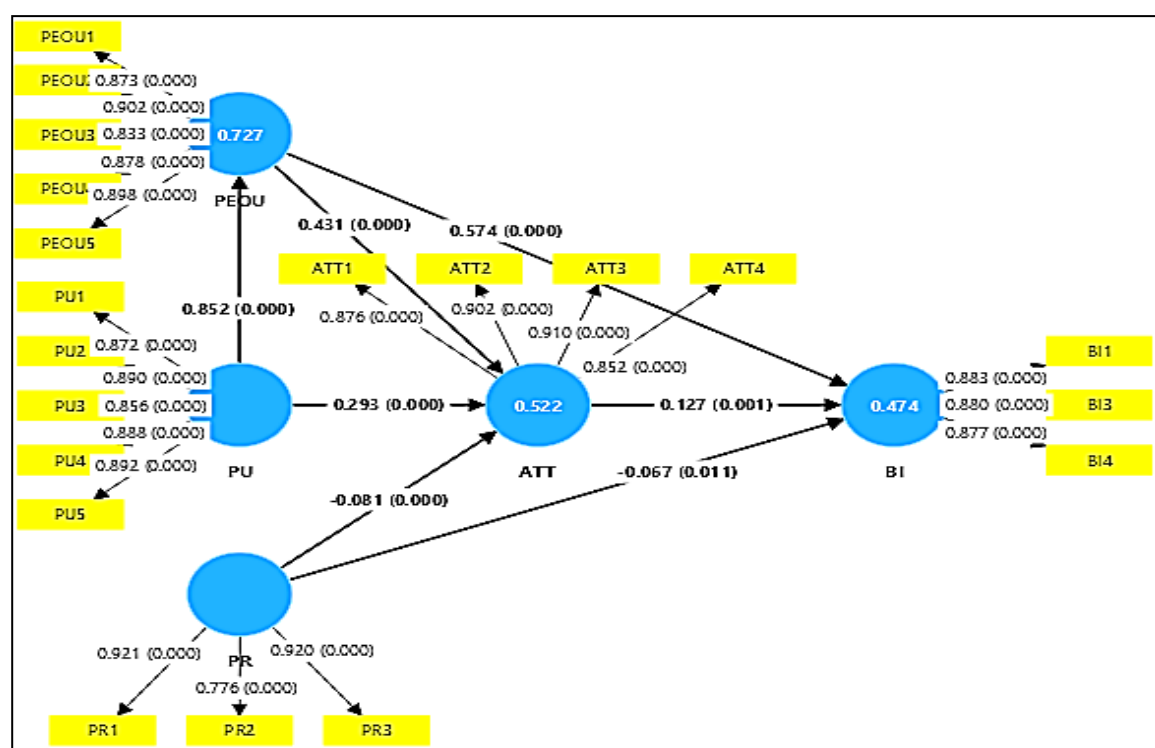


Figure 1. Measurement and structural model results for Tax Asaan mobile application adoption.

The final model for the adoption of this Tax Asaan mobile application using PLS-SEM is visualized in Figure 1. Results show that Perceived Usefulness (PU) showed the most significant positive impact on Perceived Ease of Use (PEOU) ($\beta = 0.852$, $p < 0.001$), and it also had a significant positive impact on

Attitude (ATT) ($\beta = 0.293$, $p < 0.001$). Furthermore, the factor loading of all the measurement indicators has been included in the range of 0.776 - 0.920, which indicates a satisfactory to strong item reliability and evidence of construct reliability and validity.

Discussion

Study was performed to analyze the adoption of the Tax Asaan mobile application of taxpayers with the Technology Acceptance Model (TAM) adding perceived risk. The outcomes reveal that a sense of usefulness, ease of implication, attitude toward use and perceived risk were significant factors to the behavioral intention. Therefore, although positive factors play a role in adopting digital tax services in Pakistan, negative ones also play a role. The greatest factor in the model was perceived usefulness. It had clear positive effects on Prou, att, blntention. On a practical level, taxpayers will be more inclined to utilize the application when they think it will save time, less effort, more efficient, and easier to fill out. When using digital public services, people are more concerned about the actual value of the service, and not so much about the technology. If they respect the actual worth, they might be more likely to change behavior and try a new system [7, 8].

Perceived ease of use also positively impacted attitudes and behavioral intentions, and it had a strong effect. In other words, the easier to learn, easier to navigate and easier to understand the application is, the more willing taxpayers will be to embrace it. Tax procedures may be viewed as complex, and a mobile platform that is user-friendly could help to alleviate stress and increase confidence. This close association of utility and ease of implication also indicates that people tend to consider systems more useful if they are easy to use [9].

The findings indicate that the attitude toward use significantly mediated the behavioral intention in the model, which supports the role of attitude as a mediator in the model. This shows that technical characteristics of the adoption process are not the only ones that affect the adoption process, but that the attitude of the users towards the process of adoption also affects it. Positive experiences, satisfaction and confidence can result in sustained use [10].

However, the perceived risk had a negative attitude, but positive factors also had an impact on attitude and BD. Lack of trust in mobile tax services can be caused by privacy, cyber security, or the use of financial information/reliability of the transactions. This is especially relevant in the context of designing and building digital environments with new trust in online systems. It is essential, therefore, to improve the security and gain the trust of consumers [11].

The respondents of this study were limited to the respondents of the Punjab and the study was a cross sectional. The knowledge of other geographical areas, longitudinal data and other variables like trust, digital literacy, facilitating condition, quality of service etc could be investigated in a future research to obtain further information about tax payers behavior.

Conclusion

Based on the results of the study, it is found that the two factors that are most important determining users to use the Tax Asaan mobile application are Perceived Usefulness and Perceived Ease of Use. The perceived risk is still not that high, but high. The findings show that implementing digital tax reform is a success not only as a technology solution but also because the government is clear about its political commitment to implement this tax. Users should value the system which should be efficient, user friendly and trusted by the users. To make it more user-friendly and to secure the trust of the taxers would improve taxpayer engagement and work towards modernizing the tax administration in Pakistan.

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