

## Factors affecting Jordanian entrepreneurs' intentions to use smartphone applications in business

Hamza Salim Khraim<sup>a\*</sup>

<sup>a</sup>Business Administration Department, Faculty of Business, Amman Arab University, Jordan

### CHRONICLE

#### Article history:

Received June 18, 2020  
Received in revised format  
October 8, 2021  
Accepted December 28 2021  
Available online  
December 28 2021

#### Keywords:

Entrepreneurs  
Responsiveness  
Ease of Use  
Perceived Security  
Trust  
Intention to Use  
Smartphone  
Jordan

### ABSTRACT

Nowadays, smartphones are the leading dominant mobile communication devices, attributed to their multifunctional facilities and the mounting benefits provided by online platforms. From a business perspective, smartphones can be a practical substitute for conducting many business transactions online. Companies have transferred their traditional business models to e-business models employing new technologies. This paper aims to examine the entrepreneurs' intentions to use smartphone applications in conducting business transactions as well as explore entrepreneurial opportunities in the Jordanian market. The study will use the quantitative method to examine the factors affecting Jordanian entrepreneurs' intention to use Smartphone applications. A questionnaire was used to collect the required data from the study population. The respondents were selected using a random sampling method to obtain the needed data from entrepreneurs in Amman, Jordan. A total of 500 questionnaires were distributed, and 440 valid questionnaires were returned and included in the analysis. The revealed results show that ease of use, perceived security, and trust significantly influence entrepreneurs' intentions to use Smartphone applications, while responsiveness shows no significant influence. The current study provides valuable information on the factors that nurture entrepreneurs' intentions to adopt smartphone applications in Jordan. Finally, the smartphone possesses high potential support for entrepreneurs in the business world. Entrepreneurs are advised to integrate smartphones more into business transactions to increase work efficiency benchmarks and boost their businesses.

© 2021 Growing Science Ltd. All rights reserved.

## 1. Introduction

Amid the COVID-19 pandemic, businesses worked persistently to maintain stability and a continuous flow of goods and services. The challenge was to provide services remotely by decreasing face-to-face interaction and using contactless transactions to prevent direct contact with other people. To conquer these health concerns, companies constantly struggle to improve and enhance their e-services to follow the development in information technology and Internet services, which includes using Smartphone applications. Given the conditions that arise from the COVID-19 pandemic, the tendency towards using online services has increased, which creates the need to use smart solutions, as most of the transactions have become electronic, aiming to minimize paperwork, especially during the pandemic outbreak, since paperwork can transmit the virus (Raw Wash et al., 2020). For example, commercial banks have attempted to use smartphones to provide their services electronically to maintain customer satisfaction and benefit from their services. These new circumstances and technology pave the way for more research to comprehend the nature and elements that influence entrepreneurs' intention to use Smartphones in a new market context like Jordan. As affirmed by Abdullah et al. (2019), the current changes in the business environment explain why smartphone applications are still a worthy subject of research and study. Accordingly, the existing study aims to explore the factors affecting Jordanian entrepreneurs' intention to use Smartphone applications that contribute to a better understanding of entrepreneurs' needs in raising their image among other competitors in intensely competitive markets. The COVID-19 pandemic created many challenges and obstacles for businesspeople in general and entrepreneurs in particular. Many countries ban individuals' movements to reduce direct contact and control the virus' escalation. This situation

\* Corresponding author  
E-mail address: [hkhraim@hotmail.com](mailto:hkhraim@hotmail.com) (H. S. Khraim)

creates a new challenge for companies to offer their services indirectly to customers electronically or via smartphones (Ahmed, 2021; Park & Chen, 2007). In Jordan, there is 150%, 85%, and 89% mobile, smartphone, and internet penetration, respectively (Hootsuite, 2018). Shaikh and Karjaluotou (2015) state that “entrepreneurs can experience different attitudes and intentions concerning smartphone service use and thus highly recommend investigating factors concerning continued intentions to use such applications among this particular subset of individuals.”

## 2. Literature Review

Hossain et al. (2019) mentioned, “People are surrounded by, and involved with, technology.” The technology scope is expanding at a remarkably rapid pace. With each day, modern inventions, applications, and improvements in communication devices are created that are considered very influential and unavoidable for our daily lives. No one can deny that smartphones now play an essential role in our lives. They have become a means of social communication, entertainment, and knowledge (Zainelabdin, 2020). The smartphone concept is utilized to describe a mobile (portable) multimedia tool that holds the duties of both a mobile phone and a wholly portable computer. The smartphone possesses several functionalities of other devices, such as GPS navigation, notebooks, digital cameras, voice recorders, computer game consoles, biometry, and mobile payment support (Chmielarz, 2020; Suh & Han, 2002). Santus and Kamal Uddin (2018) described Smartphone services as “a mobile telephone set that secures exclusive computer-enabled peculiarities, such as Web browsing, wireless email, entertainment, direct access to the internet, managing personal information, and several other applications.” Apple arrived in 2007 and became a dominant market competitor as it launched its first smartphone. Another player entered the market in 2007. Google released its Android operating system to the public to penetrate the smartphone market with cutting-edge technology. Recently, the mobile smartphone market has become one of the most valuable industries in the world and is expected to reach 6.378 billion users at the end of 2021 (STATISTA, 2021).

Among many popular models employed to study the stages of smartphone adoption, the Technology Acceptance Model (TAM), drafted by Davis et al. (1989), is perceived as the most accepted model among researchers to use as their theoretical framework. This model concludes that perceived usefulness and ease of use are primary factors in m-banking usage. The Diffusion of Innovation (DOI) theory is the second preferred model by researchers, which was proposed by Rogers (1995), and includes five important innovative characteristics that will enhance the adoption level of innovative technology. The Unified Theory of Acceptance and Use of Technology (UTAUT) created by Venkatesh et al. (2003) ranked third in consumer adoption among researchers. The focal point of this model is perceived usefulness, or relative advantages that motivate customers to use new technology.

### 2.1 *Entrepreneurs and Smartphones*

Technology adoption promotes business as it enhances economic and social development by altering how we work and handle business. According to Soomro et al. (2019), “smartphone apps are valuable tools for enhancing and updating people in business regarding new trends and innovations in the industry”. Bhagat and Sambargi (2019) stated, “Most entrepreneurs have adopted technology and have moved away from traditional entrepreneurial structures”. According to Lee and Raghu (2011), “Smartphone apps have become a critical and innovative tool for business communication”. It grants entrepreneurs a broad diversity of the services of mobile networks and a fluent way to invade the market via the internet without actually touching the market. Achieving different tasks is not bound to desktop computers anymore. According to Soomro et al. (2019), “New technology enables users to utilize many online services, such as checking e-mails, updating office activities and information, connecting with other parties, and checking bank accounts, which entitles the entrepreneur to run the business better and efficiently by applying the different apps on the iPhone or Android phone”. The adoption of mobile smartphones allowed entrepreneurs to reach more markets with information and encouraged them to change their methods of communication due to the accelerated evolution of mobile apps. Kapinga et al. (2019) assert, “Smartphones have become beneficial in finding market information, such as locating possible customers and determining the best distribution channel for different products”. Entrepreneurial companies are usually small, newly funded start-ups, and commonly suffer from inadequate resources to succeed in the aggressive business environment. Admitting that entrepreneurs possess restrained resources, an effective system becomes a priority to implement an innovative scheme that covers all aspects of the customer development process, from obtaining, holding, and growing the customers. Chun et al. (2012) assert, “Smartphone technology offers the potential as a means to improve efficiency, productivity, reduce cost, improve users’ satisfaction, and enhance their experience in many related industries, including healthcare, financial, e-commerce, education, entertainment, tourism, and more.”

### 2.2 *Entrepreneurship in Jordan*

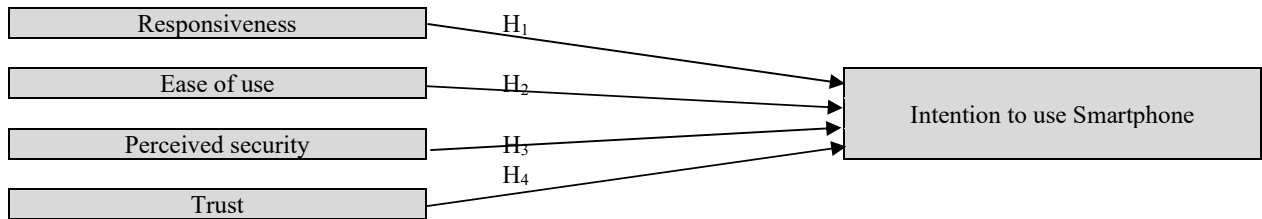
The Arab Economy Index Report (2020) measured strategic digital economic performance in Arab countries using many dimensions, including the digital business environment. Jordan scored 67% in terms of “easiness of doing business” and 54% concerning “business entrepreneur culture”. Overall, the result shows that Jordan scored seventh place among the twenty-two Arab countries. The Global Entrepreneurship Monitor (GEM, 2016) report shows that Jordan occupies the 46th position among 65 countries. About 4.1% of the adult population was affiliated with burgeoning entrepreneurship (startups), 4.6% were new business owners, and 2.7% were active in established businesses. According to GEM (2016, p12), three provinces

(Karak, Ajloun, and Irbid) received the highest rate of entrepreneurial activity (12%). In Amman, the influential capital of Jordan's business activity, the rate was only 9%. Results show that 35.3% of early-stage entrepreneurs in Jordan are planning on market expansion employing modern technologies. The development of the technology sector in Jordan is attributed to the government's support in terms of the advanced telecommunication infrastructure and legal environment. Physical infrastructure and access to services such as communication is a strength of Jordan's entrepreneurial environment (GEM, 2016, p65). Jordan's commitment continues to develop its IT infrastructure and improve the legislation on digital services. The high penetration of smartphones in Jordan presents a promising setting for various digital services. The predicted number of smartphone users in Jordan is estimated to reach 8.28 million by 2025 (Statista, 2021). Many Jordanian entrepreneurs recognized the exceptional opportunity presented by the smartphone technology breakthrough to provide high-quality services to their customers at lower human and financial costs (Wirtz & Zeithaml, 2018; Nuangjamnong, 2021). Smartphone penetration in Jordan touches 85% of total users at the client level, which is considered a high percentage compared with other countries. Despite this, customer's lacks information and knowledge about service types, features, and how to use them to increase transaction efficiency (Hootsuite, 2018). This prejudice and distrust towards digital services causes adoption resistance, and people are more reluctant to use them. Unfortunately, customers' awareness of the benefits, types, available services, and usage processes of smartphone applications is relatively inadequate.

### 3. Research Model and Hypotheses

The meta-analysis research conducted by Shaikh and Karjaluoto (2015) found that about 90% of the studies used intention as a dependent variable. Concerning the independent variables, the most commonly used factors were perceived ease of use (EOU), perceived usefulness (PU), and responsiveness, followed by trust, social influence, perceived risk, and compatibility at the next level. Therefore, this study will give more attention and focus on well-established variables in previous literature. Alwan et al. (2016b) adopted the TAM integrated model, including perceived risk, to explore and predict Jordanian customers' intentions concerning mobile services. Their results widely validate the influence of perceived ease of use, perceived usefulness, and perceived risk in anticipating customers' intentions to embrace mobile banking. Hassan et al. (2014) and Soomro et al. (2019) found a positive and significant relationship between perceived usefulness, ease of use, perceived enjoyment, satisfaction, and the entrepreneurs' intention to adopt smartphone apps in developing contexts. Therefore, we will focus on the most vital factors. Responsiveness is the first factor where mobile technology practices a great extent of interactivity (Alwan et al., 2019). Therefore, to be able to manifest this interactivity, responsiveness was proposed to have a direct effect on entrepreneurs' intentions. Alwan et al. (2019) described responsiveness as "the degree to which an organization can provide entrepreneurs with consistent and appropriate information and answers to inquiries and demands". Responsiveness is concerned with the willingness to support entrepreneurs and offer timely service to solve any difficulty instantly. Sohn and Tadisina (2008) elucidate responsiveness as "the ability to understand customer requests and complaints and to communicate with the customer in a style that they can easily understand." Respondents have a significant and positive impact on service quality and customer satisfaction (Hayani and Al Sukri, 2021; Alhosani and Tariq, 2020; and Alwan et al., 2019). Another factor predicted by the TAM model that affects consumer intentions to use mobile applications is ease of use, and it turns out to be a dominant factor that has a positive impact on technology use (Davis et al., 1989). Davis (1989) defined ease of use (EOU) as "the degree to which using a system will be effortless". Thus, customers will appreciate using technology more if it is easy to use. The research found that customers' behavioral intentions to use new technology are significantly and positively predicted by perceived EOU (Chow and Leitch, 1997; Venkatesh et al., 2003; Barry and Jan 2018, and Karim et al., 2020). Al-Marouf and Al-Emran's (2018) study shows that the EOU of technology is critical for consumers.

When entrepreneurs consider using electronic service channels, a tremendous concern arises about the security issues of that transaction. They are hesitant to disclose their personal account details or use them in forged practices because of the anxiety caused by hackers. Kalakota and Whinston (1997) asserted that security is "a threat that involves an event related to data theft, destruction, and modification of data, fraud cases, breaching, and abuse". Gitau & Nzuki (2014) argued that "if customers do not trust the information system, they will deny any transaction until they ensure the availability of privacy and security features". Karim et al. (2020) contend that security is an influential factor in simulating young adults' behavioral intentions to use tech-related services. Singh & Srivastava (2018) asserted, "Protection of customers' accounts and transactions will increase customers' trust and willingness to use e-services." Another critical factor is trust. According to Alshamrani (2018), "Trust is identified as the primary catalyst of many types of transactions, especially online transactions where the lack of physical contact leads to uncertainty". Kim et al. (2008) stress that "trust plays an essential role in online transactions because they are borderless and blind". One of the competitive advantages that companies can achieve by using smartphone applications is to add value to their customers' services. We can achieve it by fostering trust between the company and the customer (Noh and Lee, 2016). Rousseau et al. (1998) defined trust as "a psychological state comprising the intention to accept vulnerability based upon a positive expectation of the intentions or behavior of another". While Kim et al. (2008) defined it as "an online consumer's trust is defined as a consumer's subjective belief that the selling party or entity will fulfill its transactional obligations as the consumer understands them". Gao and Waechter (2017) reported that the process of formulating trust is correlated positively with the perceived quality of the system and service and the perceived quality of information. Sun et al. (2017) found that structural assurance was the most influential factor in maintaining excellent levels of initial trust in mobile banking. Alwan et al. (2017) found that "trust has a significant influence on the behavioral intention of mobile service adoption in Jordan". Based on the above-mentioned literature, the model of this study is depicted in Fig. 1.



**Fig. 1.** Research model

Accordingly, based on the research model, the following hypotheses is formulated:

**H<sub>1</sub>:** *Responsiveness has significant impact on entrepreneurs' intentions to use smartphone applications in business.*

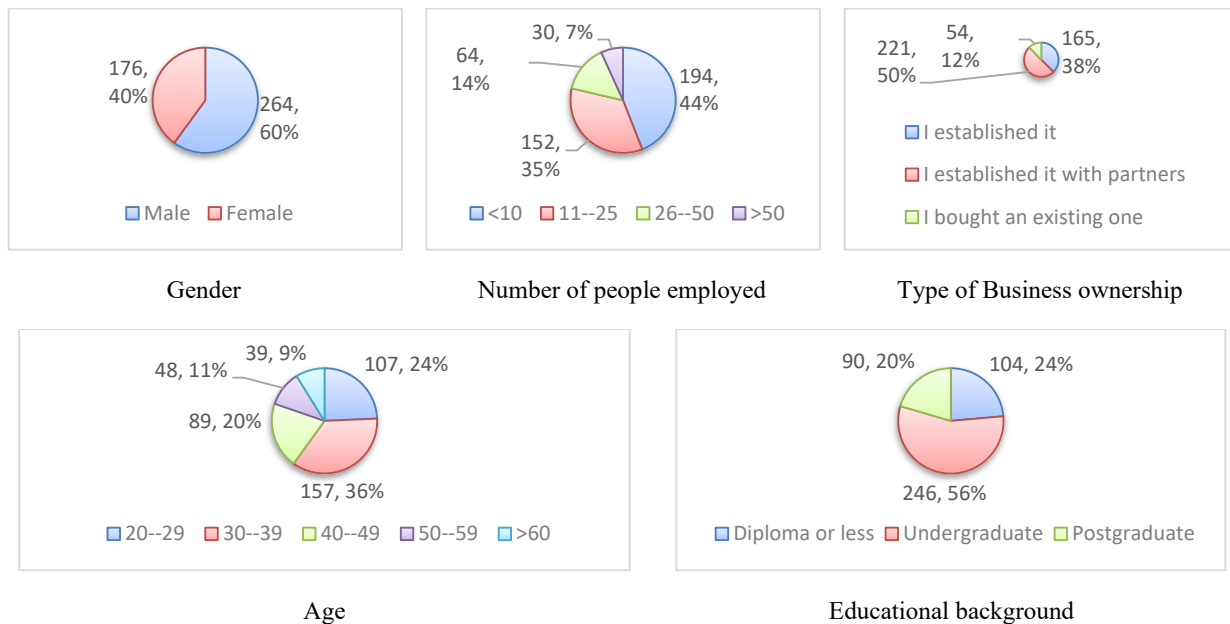
**H<sub>2</sub>:** *Ease of use has a significant impact on entrepreneurs' intentions to use smartphone applications in business.*

**H<sub>3</sub>:** *Perceived security has a significant impact on entrepreneurs' intentions to use smartphone applications in business.*

**H<sub>4</sub>:** Trust significantly impacts entrepreneurs' intentions to use smartphone applications in business.

#### 4. Research Methodology

In this study, the researchers used a descriptive and analytical approach to test the study hypotheses about factors affecting entrepreneurs' intentions to use Smartphone applications. In consonance with earlier performed research, we developed a pilot proof of the survey, checking the precision and coherence of the questionnaire, supported by the entrepreneurs' appraisals who volunteered to complete this assignment. After that, we revised and improved the final copy of the survey. The questionnaire is prepared to measure entrepreneurs' intention to use smartphone apps and consists of 29 questions. The questionnaire is divided into three sections. The first section is related to the personal data of the study sample. The second section concerning smartphone dimensions includes responsiveness, ease of use, trust, and perceived security. The third section is related to the entrepreneurs' intentions to use Smartphone applications. Five-point Likert scales ranging from (Strongly Disagree = 1 to Strongly Agree = 5) were used to answer the questions in the second and third parts of the questionnaire. We collected the data from the study sample by distributing 500 questionnaires randomly to entrepreneurs in Amman city. After the screening process, we exclude 60 invalid questionnaires reducing the number of questionnaires to 440. Fig. 2 shows the demographic profile of the study sample.



**Fig. 2.** Demographic Profile of the study sample

Fig. 2 shows that the majority of respondents are male with 60%. The highest percentage of age group was for those between 30-39 years with 35.7% and the lowest for more than 60 years old with only 8.8%, and this indicates the trend of young respondents to take more initiative and risk than older respondents. More than half (55.9%) hold an undergraduate degree,

and about (20%) hold postgraduate degrees. The company size tends to be small with 44.1% having less than ten employees and 34.5% between 11-25 employees. The result shows that half (50.25) of respondents established their business with partners.

#### 4.1 Multi-collinearity Test

The purpose of the multiple linear correlation test is to prove that independent variables are autonomous from any influence by confirming that they are free from Multiple linear correlations. Multiple linear correlations indicate the presence of a high linear correlation between the dimensions of the independent variable, which negatively affects the accuracy and validity of the measurements, which inflates the value of the determination coefficient  $R^2$  so that its value exceeds the actual value. Multiple linear correlation coefficient (correlation matrix) was calculated, which indicates that the data is free from the Multiple linear correlations, only when the correlation coefficient values are less than (0.80). We calculated the Variance Inflation Factor (VIF) and Tolerance, which indicates that the data is free from the problem of Multiple linear correlations if the values of the variance inflation factor ranged between (1 - 10), and the permissible variance values ranged between (0.1 - 1.0) (Gujarati, 2004). The results appeared as follows:

**Table 2**

Correlation matrix test for the dimensions of factors impact on entrepreneurs' intentions to use smartphone applications

Variable	Responsiveness	Ease of use	Perceived security	Trust
Responsiveness	1.000			
Ease of use	0.324**	1.000		
Perceived security	0.371**	0.458**	1.000	
Trust	0.482**	0.259**	0.344**	1.000

\*\*statistically significant at the level of significance of 0.01.

Table 2 reveals that the values of the correlation coefficient for the independent variables were all less than (0.80) and ranged between (0.259 - 0.482), and this implies that the multiple linear correlations problem does not exist in the data. To verify the previous result, we calculate the variance inflation factor (VIF) and the (Tolerance), and the results are exhibited in Table 4. It is evident from Table 3 that the values of the variance inflation factor (VIF) ranged between (1.295 - 1.527), which is limited to (1 - 10). The values of the permissible variance (VIF) ranged between (0.655 - 0.734), which is limited to (0.1 - 1.0), which confirms that the data is free from multiple linear correlations problems between the independent variables.

**Table 3**

Test for variance inflation coefficient and allowable variance for independent variables

Variable	VIF	Tolerance
Responsiveness	0.1495	0.655
Ease of use	0.1401	0.772
Perceived security	0.1292	0.734
Trust	0.1395	0.711

## 5. Data Analysis

According to Hair and Sarstedt (2019), the best reliable means for data analysis in social science research is structural equation modelling (SEM). SEM is a systematic technique that qualifies to check the validity of a hypothesis by testing the relations between many variables in one model. To test the measurement model, we used the confirmatory factor analysis (CFA) and a maximum likelihood (ML) assessment technique in the AMOS software (Hair and Sarstedt, 2019).

### 5.1 Measurement Model

The measurement model was estimated applying maximum likelihood (ML) to analyze the model fit concerning the confirmatory factor analysis provided by AMOS. Table 4 displays the fit indices of the suggested measurement model. The results are an appropriate measure. According to Hair and Sarstedt (2019), the model fits inside the range of the suitable measures. The examined item loadings were above the range of 0.50. The critical ratios for all the examined items exceeded 1.96 (Hair & Sarstedt, 2019). Accordingly, item loadings were statistically significant and within the expected path as shown in Table 5. The validity of the internal consistency of the questionnaire was verified by checking the validity of the tool used. A Cronbach's alpha coefficient test for internal consistency was done to test the reliability of the dimensions. Dimensions reliability and the questionnaire as a whole are depicted in Table 5. It is evident that the values of the reliability coefficients using Cronbach's alpha method were suitable for the application of the study tool. The values ranged between 0.70 and 0.85. The Initial Eigenvalues for dimensions were 5.160, 1.980, 1.402, 1.230, and 0.973 respectively.

**Table 4**

Chi-square results and GOF indices for the measurement models.

Criterion	$\chi^2$	df	$\chi^2/df$	GFI	AGFI	CFI	NFI	RMSEA
Model GOF	95.225	61	1.631	0.925	0.908	0.9536	0.913	0.044

**Table 5**  
The results of factor loading (FL), CR and AVE

		FL	CR	AVE
<b>Responsiveness</b>				
1	Smartphone Apps provides me prompt and efficient services.	0.745		
2	Smartphone Apps makes it easier for me to call Worldwide.	0.841		
3	Smartphone Apps provides me prompt and efficient services	0.874	0.782	0.592
4	Smartphone Apps provides means to Keep in touch with others.	0.771		
5	Smartphone Apps gives the joy of controlling my contact list.	0.802		
<b>Ease of use</b>				
6	The Smartphone applications are easy to browse	0.779		
7	I have the knowledge necessary to use Smartphone applications.	0.748		
8	I would find Smartphone applications easy to use.	0.826		
9	It would be easy for me to become skilful at using Smartphone applications.	0.812	0.827	0.602
10	Learning how to use mobile applications is easy for me.	0.883		
11	I can get help from others when I have difficulties using Smartphone applications.	0.794		
<b>Perceived security</b>				
12	Using Smartphone's services subjects my business to potential fraud.	0.847		
13	Using Smartphone's services subjects my business to financial risk	0.702		
14	I think using Smartphone's in business puts my privacy at risk.	0.827		
15	Hackers might take control of my transactions if I use Smartphone's in business	0.746	0.830	0.624
16	I am concerned about data leak outside my Smartphone.	0.811		
17	I use security software in Smartphone to protect my data.	0.742		
<b>Trust</b>				
18	I trust Smartphone service.	0.847		
19	Smartphone provides services in my best interest.	0.769		
20	Smartphone offers access to sincere and genuine financial services.	0.728		
21	Smartphone performs its role of providing services well	0.771	0.859%	0.633
22	Smartphone provides accurate and convenient financial transaction services	0.808		
23	Overall, smartphone transactions are trustworthy.	0.795		
<b>Intention</b>				
24	I intend to use Smartphone's in my financial transaction	0.832		
25	I would continue using Smartphone's services to save money.	0.726	0.851	
26	I will always use Smartphone's services in my business.	0.783		0.614
27	I plan to use mobile applications in business frequently.	0.814		
28	I will recommend others to use Smartphone's services	0.804		
29	My intentions are to continue using Smartphone in business rather than any alternative means	0.785		

FL: Factor Loading; CR: composite reliability; AVE: average variance extracted.

## 5.2 Structural Model and Hypothesis Testing

The measurement model was transformed into the structural model to examine the relationships among the constructs according to the proposed hypothesis (Hair & Sarstedt, 2019). The results show a satisfactory level of fit. The chi-square ( $\chi^2 = 93.442$ ) with degrees of freedom ( $df = 60$ ) presented an appropriate normed chi-square ( $\chi^2/df = 1.552$ ), (GFI = 0.909), (AGFI = 0.857), (CFI = 0.913), (NFI = 0.903), and (RMSEA = 0.052). Accordingly, the results of all of the goodness-of-fit indices are within a suitable range of measures (Table 6).

**Table 6**  
Structural model

	$\chi^2$	df	$\chi^2/df$	GFI	AGFI	CFI	NFI	RMSEA
Criterion			3:1	$\geq 0.9$	$\geq 0.8$	$\geq 0.95$	$\geq 0.9$	$< 0.07$
Model GOF	93.442	60	1.552	0.909	0.857	0.913	0.903	0.052

Table 7 presents the result of hypothesis testing. H1 examined the impact of responsiveness on the Jordanian entrepreneurs' intentions to use smartphone applications in business. The result shows that responsiveness has no impact on entrepreneurs' intentions, and hence, we reject the hypothesis ( $\beta = -0.40$ ,  $P = 0.127$ ), and this result contradicts Chun et al. (2012) and Arpaci et al. (2015). H2 examined the impact of ease of use on the Jordanian entrepreneurs' intentions to use smartphone applications in business. The hypothesis was accepted ( $\beta = 0.27$ ,  $P = 0.000$ ). The hypothesis results are similar to previous research such as Varma (2018), Wasiul et al. (2020), Soomro et al. (2019), and Gavino et al. (2019), and are contrary to Venkatesh et al. (2003). H3 examined the impact of perceived security on the Jordanian entrepreneurs' intentions to use smartphone applications in business. The hypothesis was accepted ( $\beta = 0.14$ ,  $P = 0.000$ ). This result confirms with Olanrewaju et al. (2020), Wasiul et al. (2020), and Barry and Jan (2018). H4 tested the impact of trust on the Jordanian entrepreneurs' intentions to use smartphone applications in business. The hypothesis was accepted ( $\beta = 0.38$ ,  $P = 0.000$ ). The result is in line with previous studies such as Wasiul et al. (2020), Soomro et al. (2019), and Alwan et al. (2017). Fig. 3 exhibits the impact of each independent variable on the dependent variable. The overall impact ( $R^2$ ) was 0.529, which means that independent variables explain 52.9% of variation in entrepreneurs' intentions to use smartphone applications in business.

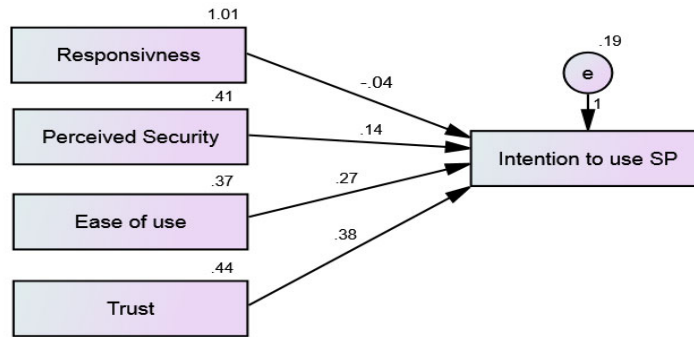


Fig. 3. Structural model with the standardized path estimate

Table 7  
Hypothesis Testing

	IV	DV	$\beta$	S.E.	C.R.	P	Result
H1	Responsiveness	IUSP	-0.40	.024	-1.542	.127	Rejected
H2	Perceived security	IUSP	0.14	.037	3.847	.024	Accepted
H3	Ease of use	IUSP	0.27	.039	6.940	.000	Accepted
H4	Trust	IUSP	0.38	.039	10.463	.000	Accepted

## 6. Conclusion

Entrepreneurs in Jordan realize the importance and benefits of integrating and using new technology to capture opportunities in the aggressive business environment. This research investigates the most critical factors that affect entrepreneurs' intentions to adopt and use smartphone applications for business. Jordan has a high penetration of internet and smartphone services, opening up a plethora of opportunities for conducting business and other activities. The literature review indicated many critical factors in the case of smartphone adoption. This study will drop more light on those critical factors, including responsiveness, ease of use, perceived security, and trust, which can accelerate the adoption of smartphone applications. Based on the revealed results, we reject H1. Despite the importance of the responsiveness factor, trust emerged as the most influential factor in affecting entrepreneurs' intentions to use smartphone applications in business. Entrepreneurs assume that responsiveness is not enough by itself. It should be associated with security and the conduct of such paramount transactions. Concerning hypothesis 2, the result shows that EOU still plays a crucial role in affecting entrepreneurs' intentions to use smartphone applications in business. Hypothesis 3 proves that perceived security has a strong effect on entrepreneurs' intentions to use smartphone applications. This result should inspire telecommunications companies to offer security-oriented smartphones primarily for business staff and managers. Telecommunications companies and smartphone manufacturers should strengthen both network-level and smartphone security to protect the company's sensitive information and employees' privacy. The results also support hypothesis 4 and emphasize trust as an essential factor in entrepreneurs' intentions to use smartphone applications in business. With trust presence, it will be easier to convince managers to adopt smartphones in order to improve their decision-making capabilities and enhance the performance of their organizations. The results of this study validate the technology acceptance model by supporting the impact of perceived security and trust on entrepreneurs' intentions to use smartphone applications in business. The study results also validate the TAM framework by supporting the impact of perceived ease of use, perceived trust, and perceived security on entrepreneurs' intentions to use smartphone applications in business.

## References

- Alhosani, A., & Tariq U. (2020). Improving service quality of smart banking using quality management methods UAE. *International Journal of Mechanical and Production Engineering Research and Development*, 10(3), 2127–2140.
- Abdullah, A. M., Rana, N. P., Alalwan, A. A., Islam, R., Patil, P., & Dwivedi, Y. K. (2019). Consumer adoption of self-service technologies in the context of the Jordanian banking industry: Examining the moderating role of channel types. *Information Systems Management*, 36(4), 286-305.
- Alshamrani, S. (2018). Trust as an influencer of the intention to use mobile banking smartphone application in Saudi Arabia. Unpublished PhD thesis at Manchester Metropolitan University.
- Alwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016b). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118–139. doi:10.1108/JEIM-04-2015-0035.



- Alwan, A., Abdullah, M., Nripendra P., Yogesh, K., and Hatice, K. (2019). Examining the Influence of Mobile Store Features on User E-Satisfaction: Extending UTAUT2 with Personalization, Responsiveness, and Perceived Security and Privacy. *Digital Transformation for a Sustainable Society in the 21st Century*. Published by Springer Nature, pp. 50–61, [https://doi.org/10.1007/978-3-030-29374-1\\_5](https://doi.org/10.1007/978-3-030-29374-1_5)
- Ahmed, E. (2021). A Survey of the Role of Smartphone in Satisfaction Jordanian Commercial Banks Clients: The Influence of Electronic Applications. *Saudi Journal of Business and Management Studies*, 6(7), 205-209.
- Abdullah, Al Nahar. (2016). The Impact of Smartphone Applications on Customer Satisfaction in Jordanian Commercial Banks. Unpublished Master Thesis, Amman Arab University, Amman, Jordan.
- Arpaci, I., Yasemin, Y., & Ozgur, T. (2015) A Cross-Cultural Analysis of Smartphone Adoption by Canadian and Turkish Organizations. *Journal of Global Information Technology Management*, 18(3), 214-238, DOI:10.1080/1097198X.2015.1080052.
- Barry, M., & Jan, M. (2018). Factors influencing the use of M-commerce: An extended technology acceptance model perspective. *International Journal of Economics, Management and Accounting*, 26(1), 157-183.
- Bryła, B. (2019). How we created mobile banking for 8 different countries – Arab Bank Case Study, FINANTEQ, 09.04.2019. <https://finanteq.com/how-we-created-mobile-banking-for-8-different-countries-arab-bank-case-study/>
- Bhagat, R., & Sambargi, S. (2019). Evaluation of personal innovativeness and perceived expertise on digital marketing adoption by women entrepreneurs of micro and small enterprises. *International Journal of Research and Analytical Reviews (IJRAR)*, 6(1), 338-351.
- Chmielarz, W. (2020). The Usage of Smartphone and Mobile Applications from the Point of View of Customers in Poland. *Information*, 11, 1-13 doi:10.3390/info11040220.
- Chun, H., Lee, H., & Kim, D. (2012). The integrated model of smartphone adoption: Hedonic and utilitarian value perceptions of smartphones among Korean college students. *Cyberpsychology, Behavior, and Social Networking*, 15, 473-479.
- DFCR (2018). Digital Finance Country Report – Jordan. USAID.GOV
- Global Entrepreneurship Monitor (GEM). Jordan National Report 2016/2017
- Gujarati, N. (2004). *Basic Econometrics*, 4th Edition, The McGraw-Hill Companies.
- Gavino, M.C., Williams, D.E., Jacobson, D. & Smith, I. (2019). Latino entrepreneurs and social media adoption: personal and business social network platforms. *Management Research Review*, 42(4), 469-494, doi: 10.1108/MRR-02-2018-0095.
- Hootsuite. (2018). Jordan presentation/hootsuite.com/resources/digital-in-2018-emea
- Hayani, N., & Alsukri, S. (2021). Dimensi E-Servqual dan Dampaknya Terhadap E-Satisfaction Layanan Mobile Banking. *Jurnal Ilmiah Ekonomi Islam*, 7(2), 679-686.
- Hossain, A., Nurunnabi, M., Hussain, K. & Shan, X. (2020). Smartphone-based m-shopping behavior and innovative entrepreneurial tendency among women in emerging Asia. *International Journal of Gender and Entrepreneurship*, 12(2), pp. 173-189. <https://doi.org/10.1108/IJGE-03-2019-0054>
- Hassan, M., Kouser, R., Abbas, S.S., & Azeem, M. (2014). Consumer attitudes and intentions to adopt smartphone apps: case of business students. *Pakistan Journal of Commerce and Social Sciences*, 8(3), 763-779.
- Hair, J., Sarstedt, M. (2019). Factors versus composites: Guidelines for choosing the right structural equation modeling method. *Project Management Journal*, 50(6), 619–624. <https://doi.org/10.1177/2F8756972819882132>
- Kapinga, A.F., Suero Montero, C., & Mbise, E.R. (2019). Mobile marketing application for entrepreneurship development: Codesign with women entrepreneurs in Iringa, Tanzania. *Electronic Journal of Information System Countries*. 1-15, <https://doi.org/10.1002/isd2.12073>
- Lee, G. & Raghu, T.S. (2011). Product portfolio and mobile apps success: evidence from app store market. *17th Americas Conference on Information Systems*, 5, 3912-3921.
- Malaquias, F., Malaquias, R., & Hwang, Y. (2018). Understanding the determinants of mobile banking adoption: A longitudinal study in Brazil. *Electronic Commerce Research and Applications*, 30, 1-7.
- Nabil, Al-Rahim (2011) The impact of electronic marketing for mobile banking services in achieving customer satisfaction
- Noh, M. J., & Lee, K. T. (2016). An analysis of the relationship between quality and user acceptance in smartphone apps. *Information Systems and e-Business Management*. Springer, 14(2), 273–291.
- Nuangjammong, C. (2021). Investigation of Factors Influencing Students' Intention to Use Banking Services through Smartphone Devices during COVID-19 Pandemic. *International Journal of Economics and Business Administration*, 9(1), 331-346.
- Olanrewaju, A.S.T., Hossain, M.A., Whiteside, N., & Mercieca, P. (2020). Social media and entrepreneurship research: a literature review. *International Journal of Information Management*, 50, 90-110, doi: 10.1016/j.ijinfomgt.2019.05.011.
- Park, Y., & Chen, J.V. (2007). Acceptance and adoption of the innovative use of smartphone. *Industrial Management and Data Systems*, 107(9), 1349-1365, doi: 10.1108/02635570710834009.
- Rogers, E. (1995). *Diffusion of innovations*. 4<sup>th</sup> ed., New York: Free Press
- Rousseau, M., Sitkin, B., Burt, S. & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3), 393-404.
- Soomro, B. A., Naimatullah, S., & Maqsood, M. (2019) Investigating the intention to adopt smartphone apps among the entrepreneurs of a developing country. *World Journal of Entrepreneurship, Management and Sustainable Development*, 15(4), 341-353.
- Santus, D., & Kamal, U. (2018). Empirical Analysis of Factors Affecting the Adoption of Smartphone on Young Generation. *International Journal of Management Science and Business Administration*, 4(2), 17-24.



- STATISTA, (2019). Number-of-mobile-cellular-subscriptions-in-Jordan, [www.statista.com/statistics/498383/](http://www.statista.com/statistics/498383/)
- STATISTA (2019). Statista dossier about Smartphone. Accessed: 2021-07-30.
- STATISTA, (2021). Smartphone users in Jordan 2010-2025, <https://www.statista.com/Forecasts/1146839/smartphone-users-in-jordan#statisticContainer>.
- STATISTA, (2021). Smartphone users worldwide 2016-2021. <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>
- Suh, B. & Han, I. (2002). Effect of trust on customer acceptance of internet banking. *Electronic Commerce Research and Applications*, 1(3-4), 247-263.
- Shaikh, A., & Karjaluo, H., (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129-42. doi: <http://dx.doi.org/10.1016/j.tele.2014.05.003>
- Sun, B., Sun, C., Liu, C. & Gui, C. (2017). Research on initial trust model of mobile banking users. *Journal of Risk Analysis and Crisis Response*, 7(1), 13 - 20
- The Arab Economy Index Report (2020). Published by the Arab Federation for the Digital Economy and the Unity Council Arab Economics in the League of Arab States. P51.
- Varma, A. (2018). Mobile Banking Choices of Entrepreneurs: A Unified Theory of Acceptance and Use of Technology (UTAUT) Perspective. *Theoretical Economics Letters*, 8, 2921-2937. <https://doi.org/10.4236/tel.2018.814183>
- Venkatesh, V., Thong, J.Y., Chan, F.K., Hu, P.J.H., & Brown, S.A. (2003). Extending the two-stage information systems continuance model: incorporating UTAUT predictors and the role of context. *Information Systems Journal*, 21(6), 527-555.
- Wasiul, K., Mohammad, A., & Mohammad, A. (2020). Determining intention to use smartphone banking application among millennial cohort in Malaysia. *International Journal of Management and Sustainability*, 9(1), 43-53. DOI: [10.18488/journal.11.2020.91.43.53](https://doi.org/10.18488/journal.11.2020.91.43.53)
- Wirtz, J., & Zeithaml, V. (2018). Cost-effective service excellence. *Journal of the Academy of Marketing Science*, 46(1), 59–80. doi:[10.1007/s11747-017-0560-7](https://doi.org/10.1007/s11747-017-0560-7)
- Zainelabdin, F. A. (2020). The Negative Effects of Smart Phones on the Jordanian Children from the Perspective of Parents. *Journal of Educational and Social Research*, 10(5), 139-152.



© 2021 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).