Tuijin Jishu/Journal of Propulsion Technology
ISSN:1001-4055
Vol. 44 No. 2 (2023)

Digital Banking Services Adoption and its Determinants in the Middle Eastregion

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Abstract: *The financial services sector in the Middle East area has experienced a significant transformation, characterized by a prominent transition towards digital banking services. The objective of this article is to offer a theoretical analysis of digital banking in the Middle East region through the integration of the TPB Model. Additionally, it aims to identify the factors that influence the acceptance of digital banking services in the Middle East region. This study constructed a conceptual framework by combining the Theory of Planned Behaviour (TPB) with perceived ease of use, security, and complexity. The findingssuggested that there is a need to examine the uptake of digital banking among users of Middle Eastern banks, as it is considered an innovative service.This research provides significant insights for financial institutions, governments, and industry stakeholders who are interested in understanding the intricate dynamics of digital banking adoption in the Middle East, as the region aims to establish itself as a centre for digital innovation in the financial sector. Gaining a comprehensive understanding of the intricacies surrounding the factors that influence adoption can provide valuable insights into devising effective approaches to expedite the acceptance and use of digital banking services. This, in turn, can facilitate the advancement of financial inclusion efforts and contribute to the stimulation of economic growth within the region.*

Keywords:*Middle east*; *digital banking*; *theory planned behaviour*; *perceived ease of use*; *complexity*; *security.*

1. Introduction

Digital technologies are proliferating in various sectors worldwide, including the banking industry (Ganguli & Roy., 2011). Newly developed and deployed technologies in particular are rapidly transforming people's lifestyles and their personal preferences which has a significant and noteworthy influence on the structure of bank-customer relationships. This is owing to the evolution of today's tech-savvy digital customers' expectations, who are looking forward to their banks' supply of digital solutions (Sreejesh, S., Anusree, M. R., & Mitra, A. 2016). Technological advancements have enabled banks to approve new ways to provide greater financial services while simultaneously cutting costs and rapidlyincreasing clients' satisfaction (Sadiq Sohail & Shanmugham, 2003). Furthermore, banking new technologies enables the use of technology to execute banking transactions in an efficient manner (Alkhowaiter, 2020). A report by OECD, (2020) mentioned that digital technology has the potential to significantly increase competition and contestability in financial markets.Digital banking users' requirements and needs are increasing day by day in the Middle East area and this revolution has led to numerous digital banking services adoption. Technological innovations have swiftly changed the banking business to a worldwide scale. It has provided a competitive advantage to numerous start-ups, improved the offerings of many long-established firms, and enabled them to expand and improve (Codeb Tech, n.d.). Ajzen (1986) introduced the Theory of Planned Behaviour (TPB), which is based on the Theory of reasoned action (TRA) but focuses on people's intentionsfor their behaviours, such as the willingness to use or adopt digital banking services (El Sayed. A, & Farid. , 2022). TPB theory is regarded as a critical theory for analyzing

people's decisions about new actions, such as new information technology (Alwahaishi & Václav Snáel, 2013). Similarly, Anouze and Alamro (2019) said that the TPB model is one of the best instruments for comprehending digital or online banking adoption. When applying the TPB model, Sari, (2017) discovered that the satisfaction of user expectations has a significant effect on the decision to continue using a technology. Thus, the success of any information technology system, particularly digital banking, is heavily influenced by the users' behavioral intentions. According to the TPB model, a person's behavioural intention toward technology is determined by attitude, subjective norms, and perceived behavioural control (Ajzen, 2020). However, attitude is also impacted by external elements that fluctuate depending on the circumstances.

Ajzen has stated that further research is needed to determine how other elements influence attitude and eventually behavioural intention to use digital banking services in the Middle East. External variables can be included in the TPB to improve the entire theory (El Sayed. A & Farid , 2022). As a result, a crucial feature of the TPB is to offer a foundation for researching the impact of external influences on internal aspects of behaviour and intentions toward any technology, including digital financial services. The majority of TPB applications in digital banking studies have concentrated on the adoption of different types of digital banking services in different areas of the world (Joo, 2017; Lee, 2009; Nayanajith, 2019; Oluyinka.S, Endozo.A & Calma.R, 2018; and Muas.T, 2020). Whereas there has been less conceptual research on digital banking in Middle Eastern nations (Shbiel & Ahmad, 2016; Alshare et al., 2011).One of the explanations for the lack of conceptual studies in the Middle East is that digital banking is still relatively new in this region compared to other developed regions of the world and most studies in the Middle East have concentrated on the empirical one ((Al-Somali et al., 2009), (Sharma et al., 2017), (Anouze & Alamro, 2020), (Alkhowaiter, 2020), (AlHaliq & AlMuhirat, 2016), (Aladwani, 2001)). As a result, the purpose of this research is to give a deeper understanding and knowledge of the variables of consumers' behaviour toward digital banking services adoption in the context of the TPB in the Middle East.In order to do that, this research established a theory framework (conceptual framework) to demonstrate the variables that might truly influence behavioural intention to accept digital banking services in the Middle East.

Literature Review

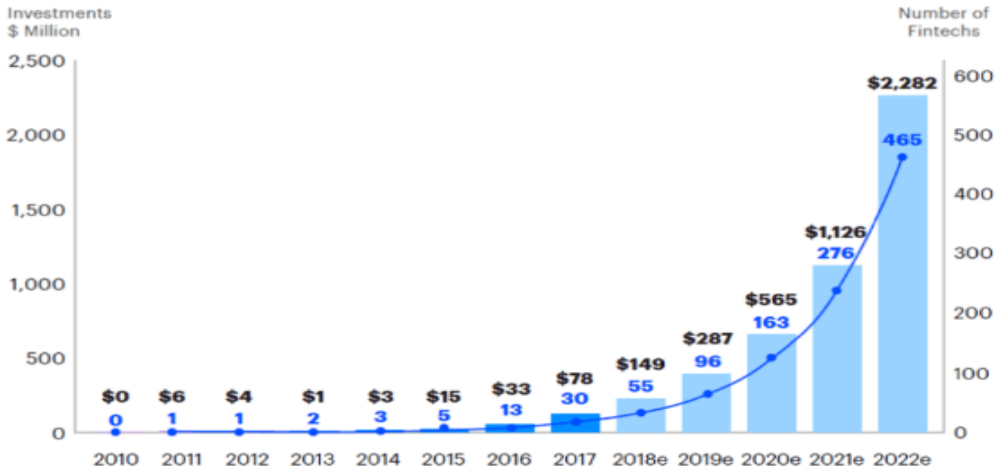
Digital banking services: Digital banking is not limited to utilizing the Internet to access financial services, as is commonly assumed, but it encompasses a wide range of banking services given or consumed through technology (Sardana & Singhania, 2018). Digital banking services involve the use of the internet, mobile phones, and other electronic media as a delivery channel for banking services, which encompass all conventional services such as balance inquiry, statement printing, transfer of funds to other accounts, bill payment, and innovative banking services such as electronic bill presentment and payment without the need to visit a bank (Wadesango, 2020). A research done by Nguyen (2020) stated that digital banking is a type of banking that digitizes all of the bank's regular services and activities. In other words, all traditional banking services, including withdrawals, transfers of money, term deposits, demand deposits, savings, and funding account administration, have been digitized and integrated into a single digital banking application. All of these services may be accessed via websites or mobile devices.

Digital banking services in the middle east region.

Digital banking services in the Middle East area are still regarded as restricted in comparison to Europe, Asian developed nations and the United States. Additionally, few technological innovations in the bank’s domain

have arisen, most notably in Jordan, Oman, Bahrain, Saudi Arabia, Kuwait, Bahrain, Turkey, and the UAE (Hardman, 2017; Ananda et al., 2020; Mashhour & Saleh, 2015; and Anouze & Alamro, 2019). Most Middle Eastern countriesattempt to penetrate the digital banking industry, though they face competition from international banks as well as information security concerns (Mashhour & Saleh, 2015). The National banks in

the Middle East are concerned about losing domestic market share, which has prompted them to issue new ways such as providing digital banking services. However, actual data suggests that digital banking services are not as prevalent in the Middle East as they are in Europe and the United States and that there are several barriers (cultural and infrastructural difficulties) to the general use of these technologies (Mashhour & Saleh, 2015).When assessing the growth of digital banking in the Middle East area, a variety of obstacles connected to cultural and infrastructural difficulties must be considered.First, many banks in the Middle East are technologically unable to supply digital banking services, as well as certain nations' telecommunications infrastructure remains poor in terms of the security concerns (Mashhour & Saleh, 2015), (Anouze & Alamro, 2019). Second, Internet access in the region remains low, which may discourage the investment needed to establish digital banking systems (Alex Malyshev, 2022). According to Alex Malyshev, (2022), the Middle East's digital banking adoption has lagged behind that of Europe and North America due to a slower rate of adoption of current banking standards. Apart from that, religious ideological incompatibility can hinder innovation by preventing investors from entering the Middle Eastern sector. However, with foreign investment in this area, banks began to be more flexible, and four nations, Turkey, the UAE, Arabia Saudi, and Egypt, reported a high rate of utilization of online financial services, according to (KEMP, 2022).In the Middle East, digital banking undoublty has a lot of potential. According to Alex Malyshev, (2022), the number of financial institutions such as banks providing digital banking services in the Middle East has expanded dramatically from



only 30 in 2017 to 465 in 2022. This rapid rise corresponds to looser rules and more investment in banking innovation. The graph below summarizes the change in the number of fintechs.

Figure 2.1Number of Fintechs

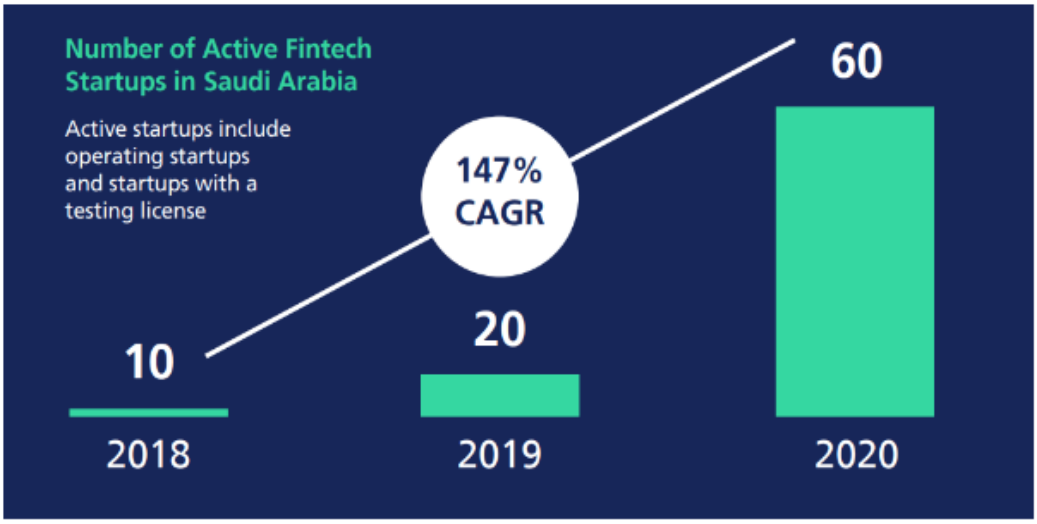
Source: Alex Malyshev, (2022)

The use of digital banking services varies per Middle Eastern country (Alex Malyshev, 2022). As a result, the following discussion will concentrate on a few countries.

Saudi Arabia

Saudi Arabia (KSA), like other countries, has paid close attention to global digital development in the banking sector (Hariri, 2023).The Kingdom of Saudi Arabia's fintech market expanded by 147 per cent from 2018 to 2020 and is predicted to rise another 55 percentby 2033, highlighting the promise of digital banking in Saudi Arabia FintechSaudi, (2020).Researchdone by Alotaibi, (2015)mentioned that eight conventional banks, four important Islamic banks, a few international organisations, and Saudi banks, including the Arab National Bank and the National Commercial Bank, provide electronic banking services

Figure 2.2 Number of Active Fintech Startups in Saudi Arabia.



Source: KPMG, (2020).

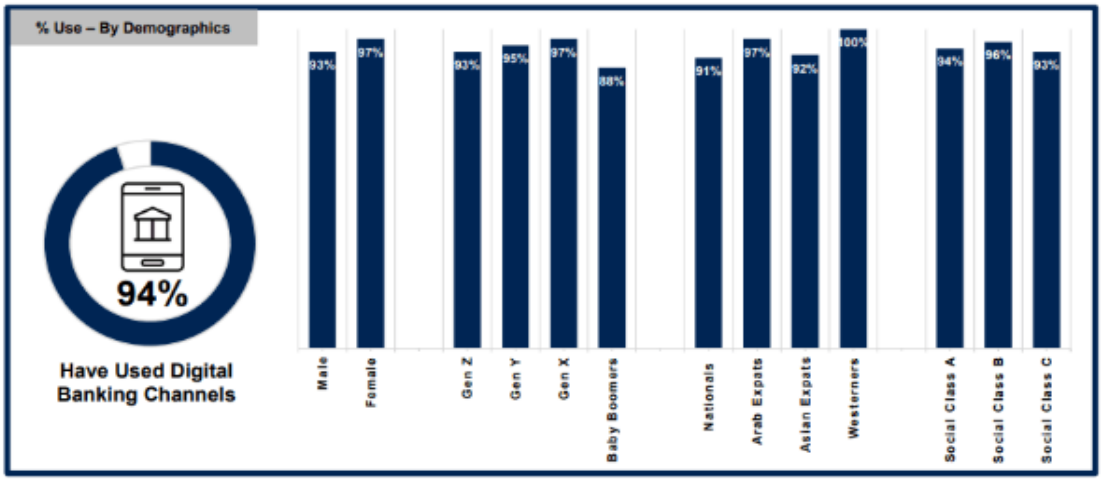
United Arab Emirates.

United Arab Emirates (UAE) government policies and supportive infrastructure have changed the country's digital landscape during the past ten years. According to the UAE Internet and Mobile Stats (January 2020), the UAE has developed into the most digitally friendly nation in the Middle East, with an amazing 99% of the population being active users of the internet(Majumdar & Pujari, 2022).Due to the National Innovation Strategy, the UAE is now one of the fastest-growing economic and technical centers. Most crucially, the introduction of over 40 financial free zones across the seven Emirates has promoted digital banking innovation in the UAE (Alex Malyshev, 2022).

Qatar

The Qatari government has become more reliant on technology, especially during the COVID pandemic (Al-Abdulghani, 2021).According toIpsos, (2022)**,** over 94 percent of Qatari bank clients have utilized at least one type of digital banking channel.

Figure 2.3 Digital Banking Channels in Qatar.



Source: Ipsos, (2022)

Previous studies on digital banking services.

Researchers have been trying to identify the factors that affect an individual's acceptance and adoption of digital banking services. Aduba (2021), stated that there is a low adoption of electronic banking services. The research shows that the security and the infrastructures affect the customer adoption of electronic banking services.A research done by Albort-Morant.G, Sanchıs-Pedregosa & Paredes.J, (2021), mentioned that there is a huge difference between the rural and urban adoption levels of online banking services in Spain. The author stressed the necessity to do awareness campaigns and also develop the infrastructures more especially in the rural area. Similarly, Sadiq Sohail and Shanmugham, (2003) revealed that security concerns, computer and Internet access costs, Internet accessibility, awareness, attitude towards change, trust in one bank, ease of use and convenience are the major factors affecting the adoption of Internet bank service in Malaysia which is part of the digital banking services. The reseach concludes that there is great work from the banks to make the clients aware of this new innovation.Asante and Baafi, (2022), highlighted the impact of trust on the adoption of digital banking services in Ghana. The author found that there is a significant impact of trust in the adoption of digital banking services and he mentioned that his research can be a guide for more use of digital banking platforms by banks. As digital banking has been introduced into the middle east world relatively recently, there are a few conceptual and empirical researches have been conducted to understand customer intent to adopt digital banking services. The empirical researches will be addressed in details below:Anouze and Alamro, (2019) applied the TPB and TAM to research the use of e-banking in Jordan which is a country with low intention to use e-banking which took a big part of the digital banking services. The authors found that the major factors, including perceived ease of use, perceived usefulness, security and reasonable price, stand out as the barriers to the intention to use e-banking services in Jordan. Another research done by Sharma et al., (2017) applied the TAM model to discuss the adoption of mobile banking in Oman, one of the developing countries. The findings revealed that perceived ease of use and demographic characteristics were not statistically significant in this study.AlHaliq & AlMuhirat, (2016) discussed the level of customer satisfaction in the Saudi banking industry using electronic banking (e-banking) services. The results of their research indicate that Saudi banks have achieved substantial customer satisfaction by upgrading their electronic services, easing electronic transactions, boosting processing performance, and improving electronic service requirements. Similarly,Alshare et al., (2011)**,** investigates the influence of cultural aspects on user intention to use mobile payment devices, based on the Unified Theory of Acceptance and Use of Technology model (UTAUT) and Hofstede's cultural dimensions. The researchers found that it is critical to understand the elements that influence customers' intentions to use mobile payment devices, which eventually influence their actual usage, so that firms may take such aspects into account when introducing such technology.

From the very scarce conceptual studies regarding the digital banking services adoption in the middle east area there is a research in Jordan done by Shbiel & Ahmad, (2016)regarding the electronic Banking by integrating Theory of Planned Behaviour and Technology Acceptance Model. The authors mentioned the main factors impacting the acceptance of E-Banking in Jordan.In summary, the foregoing literature review reveals that, in comparison to research performed in Europe and the United States, little empirical research and very few conceptual researches relevant to the adoption of one of the digital banking services have been conducted in the Middle East area.so the table below will briefly show the few previous studies that have conducted in the middle eastern region.

Table 2.1 The previous studies regarding the adoption of digital banking services in the middle east countries.

Country	Studies conducted	Empirical / Conceptual.
1- Jordan	(Anouze & Alamro, 2019)	Empirical

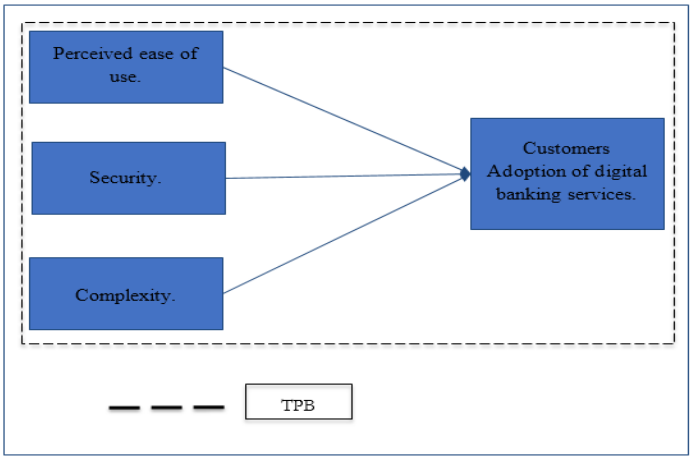
	(Shbiel & Ahmad, 2016)	Conceptuel
	(Anouze & Alamro, 2020)	Empirical
2- KSA	(AlHaliq & AlMuhirat, 2016)	Empirical
3- Kuwait	(Aladwani, 2001)	Empirical
4- Oman	(Sharma et al., 2017)	Empirical
5- UAE	(Mouakket, 2009)	Empirical
6- Qatar	(Alshare et al., 2011)	Conceptual

Thus, although the spread of digital banking in Europe and the United States is greater than in the Middle East, we feel that more conceptual studies are required to better understand the level of usage of this relatively new service in the Middle East region.

Determinants of digital banking services.

The goal of this research is to assist banks better understand consumer behavior and attitudes regarding digital banking by identifying the factors that impact this behavior. The research investigates these links, adding knowledge that may be beneficial to banks in the middle east region and other interested entities.Perceived ease of use, security, and complexity on the TPB model.

Figure (1) shows a proposed digital banking services adoption model showing the suggested factors affecting the customers adoption of digital banking services. The model consists of three factors that this paper posits to



have an influence on the adoption of digital banking services.

Figure 1.The proposed research model.

The primary goal of this research was to give a theoretical discussion of digital banking in the Middle East area by using the TPB Model, as well as to identify the variables influencing the adoption of digital banking services in the Middle East.

Perceived ease of use.

Perceived ease of use is the main factor which influences the intention to adopt digital banking services. Davis, (1989) contends that perceived ease of use is an importantfactor of system utilization in an organization.Safeena et al., (2013) mentioned that perceived ease of use is an important factor when adopting internet banking which is one of the most important digital banking services. Similarly, Chang et al., (2020) conducted a research in Magnolia and they found out that the ease of use has a beneficial impact on the intention to utilize the digital

banking services such as the websites.To ensure client utilization, digital banking services should be simple to use. If people in the Middle East are not embracing digital banking, it might be because digital banking services are difficult to use.

Security

The major issue of the digital banking system is the security of financial transactions. The absence of compelling security in digital banking transfers may result in major damage to the banking system over time (Giannantonio & Hurley-hanson, 2014).According to Sathye, (1999) revealed that the security risk is a significant factor in the adoption of online banking. Similarly, Jack and Kostiwa, (2014) found out that security is one of the major factors affecting the adoption of digital banking. Kumar et al., (2012) stated that the customers' perceived security of digital banking had a strong beneficial impact on internet banking service which is part of the digital banking services. On the other hand, Sardana, V., and Singhania, (2018) mentioned that cybercrime and hacking are common in India. This led to a significant decrease in trust banks' digital activity.

Complexity

The degree to which an invention is thought to be difficult to comprehend, learn, or use is referred to as compatibility (Dearing, 2021). Furthermore, Cheung et al., (2000) mentioned that complexity refers to an innovation that can be considered relatively difficult to understand and use. Nuraisyah et al., (2021) stated that the easier the innovation is for people to understand, the faster the innovation will be accepted. Complexity to comprehend and utilize innovations will necessitate the development of new skills by adopters.To boost its chances of acceptance, an invention with significant complexity needs more technical expertise as well as larger implementation and operational efforts. Due to the internet being relatively user friendly, potential clients may believe that digital banking services are less complicated to use and hence are more inclined to utilize such services (Bansal et al., 2000). Nuraisyah et al., (2021), explained that the main barrier to mobile banking uptake is complexity. Previous studies on digital technology revealed that the complexity of the innovation inhibits consumers' inclination to use mobile banking.It can be concluded that the failure to adopt digital banking in the middle east region is probably related to the complexity of the technologies that used in the banking system, the internet or both.

2. Conclusion

This research advocate that TPB theory can aid in the development of a theoretical foundation for digital banking. The primary goal of this research was to give a theoretical discussion of digital banking in the Middle East area by using the TPB Model, as well as to identify the variables influencing the adoption of digital banking in the Middle East.According to the suggested model perceived ease of use, security, and complexity have a direct influence on digital banking service uptake. The previous investigations indicated that, in comparison to other parts of the world there are just a few conceptual studies on the adoption of digital banking services in the middle east region. The studied literature revealed that the TPB model is effective in attracting intentions to adopt certain technologies in industrialised countries, particularly in the Middle East.

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