

Systematic Literature Review: Implementation of Mobile Banking

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ABSTRACT

The main purpose of SLR is to answer the RQ with the results of previous studies as evidence that has been identified, assessed, and interpreted. The RQs on SLR identify the significant journals, the most influential researchers, topics, methods, and theories. Based on inclusion and exclusion criteria, 20 papers indexed by Scopus were obtained that discuss the implementation of mobile banking, with publication years ranging from 2010 to 2021. The implementation of mobile banking focuses on six topics. The most widely used method is survey research with a cross-sectional design. While TAM is the most commonly used theory, the SLR outlines implications that can assist practitioners in surmounting the deceleration issue in implementing mobile banking and preparing for the cashless era in Indonesia.

INTRODUCTION

In recent years, the implementation of mobile banking has received special attention among users of information systems (Zhou, 2018). This is due to the sharp increase in smartphone usage. Nonetheless, the implementation of mobile banking is still behind, especially in developing countries (Bharti, 2016). Indeed, the number of mobile phone users is expected to reach 5.07 billion by the year 2020 (Sharma, 2019).

The term "mobile banking" refers to a type of innovative product from a bank in the form of an application to facilitate customers in conducting various financial and non-financial activities remotely (Motiwalla, Albashrawi, & Kartal, 2019). The implementation of mobile banking is an individual or group action in applying mobile banking services (Chavali & Kumar, 2018). The implementation is a stage when the customer thoroughly practices innovation as an alternative (Al-Jabri & Sohail, 2012).

The utilization of mobile banking will increase dramatically if the services offered are completely compatible with the user's needs (Ghobakhloo & Fathi, 2019). The implementation tends to rise significantly due to the suitability of mobile banking services with trends from social media (Deb & Lomo-David, 2014). Mobile banking implementation will fail if access security is not continuously improved (Bhuiyan & Rahman, 2013).

Previous studies have used adoption as a dependent variable to elaborate the implementation of mobile banking (Chavali & Kumar, 2018; Malaquias, Malaquias, & Hwang, 2018; Riquelme & Rios, 2010; Sharma, Govindaluri, Al-Muharrami, & Tarhini, 2017; Shareef, Baabdullah, Dutta, Kumar, & Dwivedi 2018).

South Korea is one of the countries with the highest mobile banking customers (Lechman & Marszk, 2015). Similar to Japan, numerous customers actively use the bank's innovations (Alalwan, Dwivedi, & Rana, 2017). Mobile banking has been launched for a long time (Malaquias et al., 2018). Nevertheless, its implementation remains extremely slow in several countries (Akturan & Tezcan, 2012; Malaquias et al., 2018; Alalwan, Rana, Dwivedi, Lal, & Williams, 2015; Alalwan et al., 2017). In particular, the introduction and implementation of mobile banking services is a gradual decline in developing countries (Sharma et al., 2017).

Baabdullah, Alalwan, Rana, Kizgin, and Patil (2019) indicate that the use of mobile banking will rise rapidly due to accessibility to financial services remotely and personal security. For instance, the fingerprint method and face recognition in the application of mobile banking (AL-Zubi, 2021). This can encourage continued use of the application (Owusu, Bekoe, Addo-Yobo, & Otioku, 2020). Consequently, the global banking sector has determined that mobile banking will be implemented effectively in the future. Thus, mobile banking has become a crucial strategy for the whole banking sector (Al-Otaibi, Aljohani, Hoque, & Alotaibi, 2018).

Several previous studies have researched the implementation of mobile banking. The research was investigated in various journal publications and types of theories. Therefore, it leads to inconsistent research results. Numerous Systematic Literature Reviews (SLRs) on the implementation of mobile banking

have only focused on one topic. Hence, this study discusses the implementation of mobile banking based on the literature review method. By contributing to reviewing the distinctive countries, theories, and methods from the latest papers. This SLR proposes six topics for future research. The SLR outlines implications that can assist practitioners in surmounting the deceleration issue by implementing mobile banking.

LITERATURE REVIEW

Implementation of mobile banking is the adoption carried out by individuals or groups (Koksal, 2016). The success of implementing mobile banking is interpreted as the smoothness of individuals or groups in adopting mobile banking applications (Sharma et al., 2017). Adoption is defined as an implementation because adoption is a stage when individuals or groups fully practice innovation as the best alternative (Al-Jabri & Sohail, 2012).

Previous studies have used the dependent variable of mobile banking adoption to explain the implementation of mobile banking which is usually based on three theories, namely Diffusion of Innovation Theory (DIT), Technology Acceptance Model (TAM), and Unified Theory of Acceptance and Use of the Technology (UTAUT) (Lin, 2011; Oliveira et al., 2014; Mehrad & Mohammadi, 2016; Alalwan et al., 2017; Chaouali, Souiden, & Ladhari, 2017; Sharma, 2019; Shareef, Baabdullah, Dutta, Kumar, & Dwivedi 2018).

Acceptance of information technology is the main condition for the successful implementation of information technology (Rombe, Zahara, Santi, & Rahadhini, 2021). If the experience of using mobile banking makes users feel high and appropriate benefits, then users tend to be loyal to the implementation of mobile banking (Sampaio, Ladeira, & Santini, 2017).

METHODOLOGY

The method used in this paper is SLR to identify and evaluate the implementation of mobile banking. SLR is a review process to answer research questions (RQs) with the results of previous studies as evidence that has been identified, assessed, and interpreted (Kitchenham & Charters, 2007; Wahono, 2015). This SLR follows the guidelines of Kitchenham and Charters (2007).

The three main stages of this SLR are planning, conducting, and reporting. In the introduction, the identification process (step 1) was explained. Moreover, the RQ and mind map are presented in steps 2 and 3. The conducting stage of the SLR includes search strategy, study selection, data extraction, study quality assessment, and data synthesis. Finally, the research results are discussed in the reporting step. The stages in this SLR are illustrated in Figure 1 below:

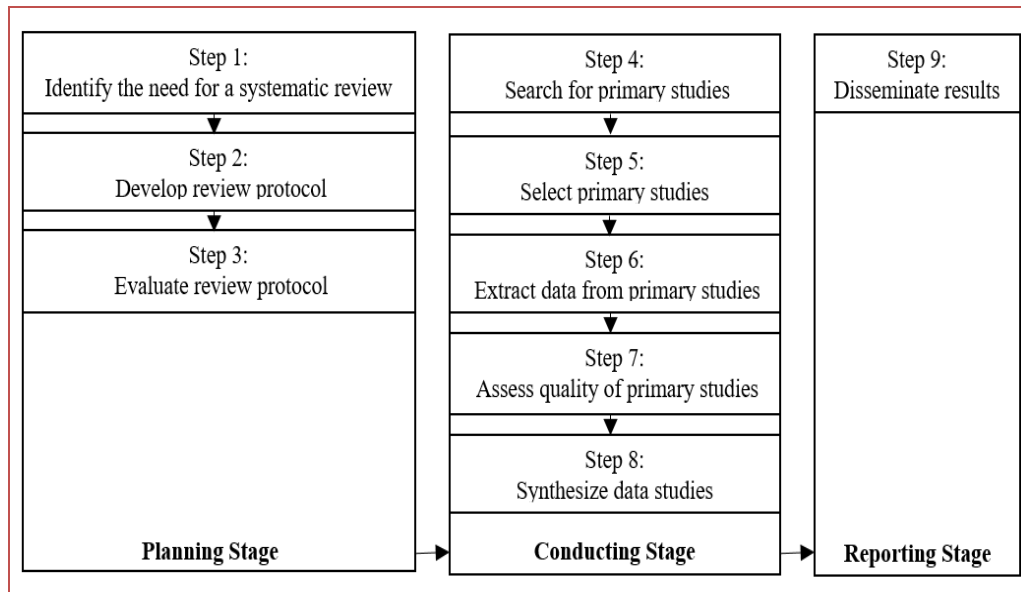


Figure 1. Systematic Literature Review Steps

Research Questions (RQs)

RQs are made to stabilize the focus on the topics being reviewed (Kitchenham & Charters, 2007). Thus, the structure of the RQs is shown in table 1:

Table 1. Research Questions on Research Review

ID	Research Questions	Motivation
RQ1	Which journal is the most significant for the implementation of mobile banking?	Identify the most significant journals in the implementation of mobile banking.
RQ2	Who are the most influential researchers on the implementation of mobile banking?	Identify the most influential researchers who have contributed considerably to the implementation of mobile banking research.
RQ3	What topics are determined by the researchers in the implementation of mobile banking?	Identify topics in the implementation of mobile banking.
RQ4	What types of methods are used for the implementation of mobile banking?	Identify the types of methods used in the implementation of mobile banking.
RQ5	What type of methods is the most used for the implementation of mobile banking?	Identify the type of method that is most used in the implementation of mobile banking.
RQ6	What type of theory is the most used for the implementation of mobile banking?	Identify the type of theory that is most used in the implementation of mobile banking.

Figure 2 presents a mind map of this SLR. This SLR will identify the significance of journals, most influential researchers, and topics (RQ1 to RQ3) from several papers that discuss the implementation of mobile banking. Subsequently, SLR presents and analyzes the types of methods and theories used (RQ4 to RQ6).

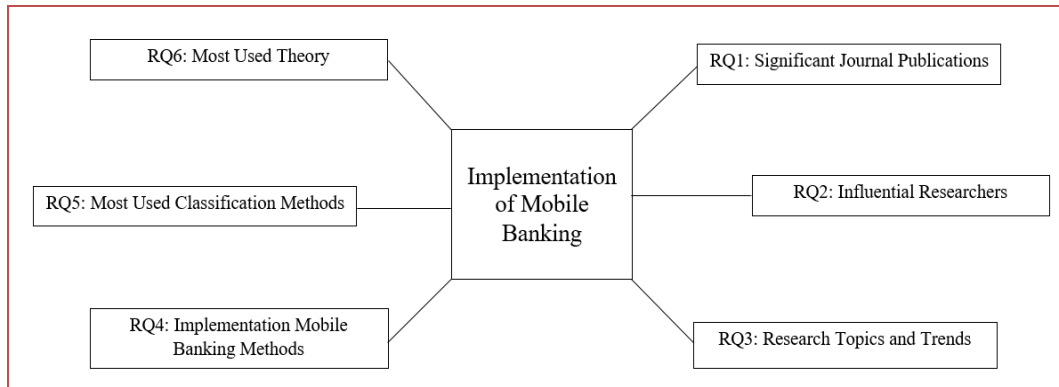


Figure 2. Mind Map SLR on Implementation of Mobile Banking

Search Strategy

Responding to RQs, a research process is needed to discover entire literature sources from sundry digital databases as secondary data (step 4). The selection of a nifty digital database will facilitate the discovery of pertinent and quality papers. Therefore, this SLR uses a digital database as follows: Scopus, Emerald, Springer, Taylor and Francis, and Sciencedirect.

The following are the keywords used in the research process: “Implementation of Mobile Banking”, “Use of Mobile Banking”, “Usage of Mobile Banking”, “Adoption of Mobile Banking”, “Application of Mobile Banking”, and “Mobile Banking Implementation”.

Study Selection

Inclusion and exclusion criteria are needed to facilitate the research process. These criteria are used to select the appropriate papers. Table 2 displays a summary of the criteria used.

Table 2. Inclusion and Exclusion Criteria

Inclusion Criteria	<ol style="list-style-type: none"> 1. Papers published from 2010 – 2021. 2. Papers indexed by Scopus with Scimago Journal and Rank (SJR). 3. Papers related to mobile banking. 4. Paper which is a type of journal version, not a conference version.
Exclusion Criteria	<ol style="list-style-type: none"> 1. Papers that do not have strong validation. 2. Papers that are not written in English. 3. Papers that do not discuss implementation.

Figure 3 presents the process of searching and selecting the paper used (step 5). Papers that include exclusion criteria are determined based on the title and abstract. Subsequently, determined based on the full text. In the final paper selection, 20 papers met the inclusion and exclusion criteria discussed in this SLR.

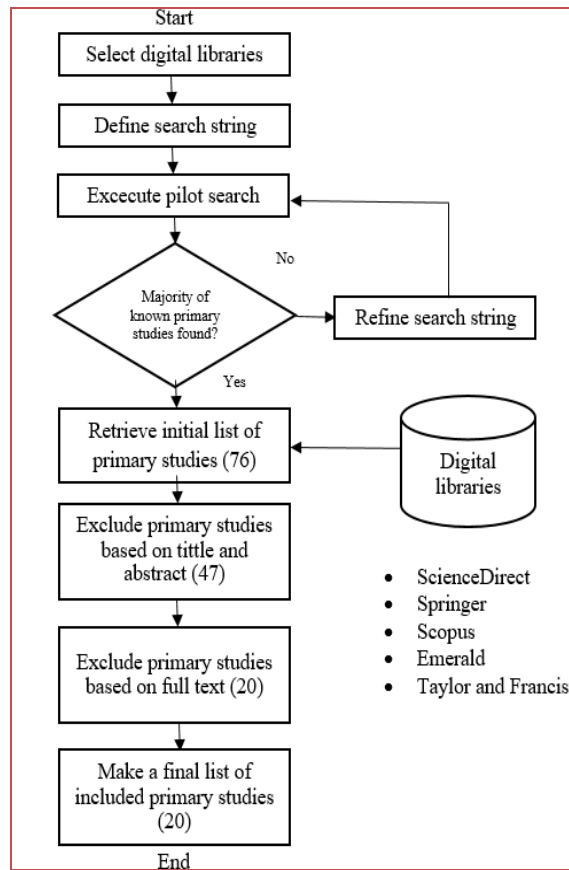


Figure 3. Search and Selection Process

Data Extraction

Based on the selection process with inclusion and exclusion criteria, the total number of papers used in this SLR is 20 papers. As a result, the data extract has been fulfilled (step 6). There are five properties used to respond RQs which are shown in table 3:

Table 3. Data Extraction Properties Mapped to Research Questions

Property	Research Questions
Researchers and publications	RQ1, RQ2
Topics	RQ3
Methods	RQ4, RQ5
Theory	RQ6

Study Quality Assessment and Data Synthesis

A study quality assessment was conducted to interpret the results of data synthesis findings and determine relevant conclusions (step 8). The data synthesis purpose is to collect various evidence from papers that have been selected to respond RQs. Typically, the narrative synthesis method is most frequently used. Entire data are tabulated according to RQs. Furthermore, it is visualized in diagrams and tables.

Threats to validity

This SLR attempts to solve RQs on mobile banking implementation. Nevertheless, this SLR allows for bias in the selection of papers. The search process is manually conducted. As a result, other papers on the implementation of mobile banking will probably be excluded. In the selection process, conference proceedings are not included. According to Jorgensen and Shepperd (2007), reviewing conference proceedings will considerably increase the workload required to construct SLR.

RESEARCH RESULT

The SLR analyzes 20 papers that discuss the implementation of mobile banking from 2010 to 2021. Compared to the previous year, the number of papers obtained in the 2017–2019 publication year has gone up, with 4 papers, respectively. Figure 3 depicts the number of papers based on the year of publication.

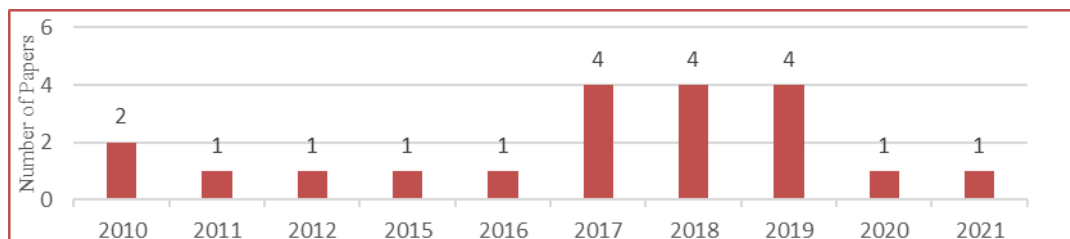


Figure 4. Number of Papers Based on The Year of Publication

Figure 4 offers a list of journal publications containing papers on the implementation of mobile banking. The international journal of bank marketing is a journal that provides most papers on the implementation of mobile banking. It found four papers from the journal.

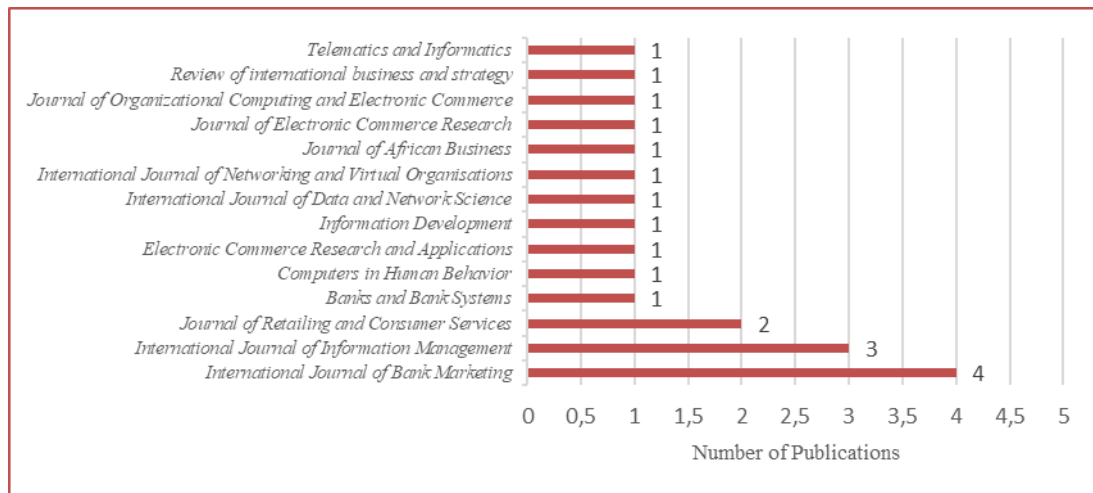


Figure 5. Journal Publications

Table 4 exhibits SJR value and Q category in the mobile banking implementation papers. Q1 is the largest category, with 7 journal publications.

Tabel 4. Scimago Journal Rank

Journal Publications	SJR	Q Category
<i>International Journal of Information Management</i>	2.77	Q1
<i>Computers in Human Behavior</i>	2.11	Q1
<i>Journal of Retailing and Consumer Services</i>	1.57	Q1
<i>Telematics and Informatics</i>	1.57	Q1
<i>Electronic Commerce Research and Applications</i>	1.18	Q1
<i>Journal of African Business</i>	1.18	Q1
<i>International Journal of Bank Marketing</i>	0.79	Q2
<i>Journal of Electronic Commerce Research</i>	0.69	Q1
<i>Journal of Organizational Computing and Electronic Commerce</i>	0.64	Q2
<i>Review of International Business and Strategy</i>	0.56	Q2
<i>Information Development</i>	0.45	Q2
<i>International Journal of Data and Network Science</i>	0.3	Q2
<i>Banks and Bank Systems</i>	0.19	Q3
<i>International Journal of Networking and Virtual Organisations</i>	0.17	Q4

Table 5 presents the most influential researchers. It indicates that the second and third most influential are Riquelme and Rios (2010), and Al-Jabri and Sohail (2012), with 869 and 818 total citations. Interestingly, Lin (2011) as the top three influential researchers.

Table 5. Most Influential Researchers

Journal	Researchers	Citations	
		Total	Average
<i>International Journal of Bank Marketing</i>	Cruz, Neto, Muñoz-Gallego, and Laukkanen (2010)	511	42.6
<i>International Journal of Bank Marketing</i>	Riquelme and Rios (2010)	869	72.4
<i>International Journal of Information Management</i>	Lin (2011)	1.105	100.4
<i>Journal of Electronic Commerce Research</i>	Al-Jabri and Sohail (2012)	818	81.8
<i>Information Development</i>	Bhatiasevi (2015)	242	34.5
<i>Computers in Human Behavior</i>	Tam and Oliveira (2016)	344	57.3
<i>Telematics and Informatics</i>	Mehrad and Mohammadi (2017)	172	34.4
<i>Review of international business and strategy</i>	Sharma et al. (2017)	138	27.6
<i>Journal of Organizational Computing and Electronic Commerce</i>	Changchit, Lonkani, and Sampet (2017)	61	12.2
<i>Journal of Retailing and Consumer Services</i>	Chaouali, Souiden, and Ladhari (2017)	119	23.8
<i>Electronic Commerce Research and Applications</i>	Malaquias et al. (2018)	55	13.7
<i>International Journal of Networking and Virtual Organisations</i>	Zhou (2018)	27	6.7
<i>Banks and Bank Systems</i>	Chavali and Kumar (2018)	23	5.7
<i>Journal of Retailing and Consumer Services</i>	Shareef et al. (2018)	199	49.7
<i>International Journal of Information Management</i>	Baabdullah, Alalwan, Rana, Kizgin, and Patil (2019)	351	117
<i>International Journal of Information Management</i>	Sharma and Sharma (2019)	345	115
<i>International Journal of Bank Marketing</i>	Baabdullah et al. (2019)	93	31
<i>International Journal of Bank Marketing</i>	Elhajjar and Ouaida (2019)	52	17.3
<i>Journal of African Business</i>	Owusu et al. (2020)	26	13
<i>International Journal of Data and Network Science</i>	Rombe, Zahara, Santi and Rahadhini (2021)	4	4

DISCUSSION

Research Topics in Implementation of Mobile Banking

This SLR has assessed distinctive topics on the implementation of mobile banking to answer RQ3. The reviewed papers focus on six topics. First is the intention, such as the intention to adopt mobile banking, switch intention from online banking to mobile banking, and continued intention to use mobile banking. Increasing intention to adopt mobile banking is largely determined by attitude (Chaouali et al., 2017; Elhajjar & Ouaida, 2019; Lin, 2011; Mehrad & Mohammadi, 2017; Owusu et al., 2020). Mobile banking is one of the newest types of online banking. Consequently, it is important to accelerate the intention of online banking users (ATM, internet, and SMS banking) the switch to mobile banking services (Zhou, 2018). Once the intention to adopt mobile banking is achieved, customers can construct a decision to continue using mobile banking or not (Baabdullah et al., 2019).

The second is the adoption of mobile banking. Adoption is the stage of technology acceptance (Riquelme & Rios, 2010). The indicators from the diffusion of innovation and acceptance of technology greatly establish the speed of adoption (Chavali & Kumar, 2018). The adoption of mobile banking is the most discussed topic (Al-Jabri & Sohail, 2012; Chavali & Kumar, 2018; Malaquias et al., 2018; Riquelme & Rios, 2010; Shareef et al., 2018; Sharma et al., 2017).

Furthermore, usage is a topic that consists of usage behaviour and actual usage. The magnitude of user intention toward using mobile banking is the main determinant of usage (Bhatiasevi, 2015). Especially, trust is key to increasing the usage behaviour of mobile banking (Bhatiasevi, 2015; Changchit et al., 2017). After intending to use and being satisfied with mobile banking, the user will become actual usage (Sharma & Sharma, 2019). Though, not all users reach the actual usage stage (Sharma, 2019).

The fourth topic is barriers to the implementation of mobile banking. Only a few papers examine the barriers to using this application. If barriers to using mobile banking are not addressed immediately, its implementation will be sluggish (Cruz et al., 2010; Rombe et al., 2021). Factors that hinder mobile banking implementation are cost, image, and value barriers (Rombe et al., 2021). According to Cruz et al. (2010), the barriers to implementing mobile banking are cost, risk, low relative advantage, and complexity.

The fifth and sixth topics are individual performance and loyalty. Accelerated usage and satisfaction determine the emergence of user loyalty and individual performance towards the implementation of mobile banking (Baabdullah et al., 2019; Tam & Oliveira, 2016). These topics are the stage when customers have satisfied with the application. Figure 6 shows topics in the implementation of mobile banking, with adoption as the most discussed topic.

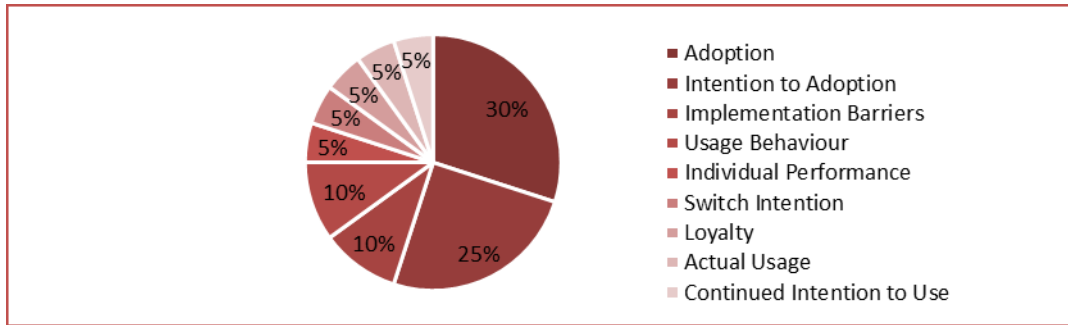


Figure 6. Distribution of Research Topics

Methods Used in Implementation of Mobile Banking

Table 5 provides a summary of methods used in 20 reviewed papers concerning the implementation of mobile banking.

Table 5. Methods Used in Implementation of Mobile Banking

Researchers	Types of Research	Methods	Respondents
Cruz et al. (2010)	Cross-sectional	Survey	3.585
Riquelme and Rios (2010)	Cross-sectional	Survey	600
Lin (2011)	Cross-sectional	Survey	368
Al-Jabri and Sohail (2012)	Cross-sectional	Survey	330
Bhatiasevi (2015)	Cross-sectional	Survey	272
Tam and Oliveira (2016)	Cross-sectional	Survey	233
Mehrad and Mohammadi (2017)	Cross-sectional	Survey	384
Sharma et al. (2017)	Cross-sectional	Survey	208
Changchit et al. (2017)	Cross-sectional	Survey	309
Chaouali et al. (2017)	Cross-sectional	Survey	557
Malaquias et al. (2018)	Longitudinal	Survey	1.033
Zhou (2018)	Cross-sectional	Survey	309
Chavali and Kumar (2018)	Cross-sectional	Survey	90
Shareef et al. (2018)	Cross-sectional	Survey	201
Baabdullah et al. (2019)	Cross-sectional	Survey	429
Sharma and Sharma (2019)	Cross-sectional	Survey	227
Baabdullah et al. (2019)	Cross-sectional	Survey	320
Elhajjar and Ouaida (2019)	Cross-sectional	Survey	320
Owusu et al. (2020)	Cross-sectional	Survey	517
Rombe et al. (2021)	Cross-sectional	Survey	110

Most Used Methods in Implementation of Mobile Banking

Cross-sectional research is the most common type of research. In addition, the most frequently applied research method is a survey. The second and third most respondents are Malaquias et al. (2018), and Riquelme and Rios

(2010), with 1.033 and 600 total respondents. Interestingly, Cruz et al. (2010) have the top most respondents, with 3.585 respondents.

Most Used Theory in Implementation of Mobile Banking

Table 6 gives a list of theories used in 20 reviewed papers on the implementation of mobile banking.

Tabel 6. Theory Used Implementation of Mobile Banking

Researchers	Theory
Cruz et al. (2010)	Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Diffusion of Innovation Theory (DIT)
Riquelme and Rios (2010)	TAM, DIT
Lin (2011)	TPB, DIT
Al-Jabri and Sohail (2012)	DIT
Bhatiasevi (2015)	Unified Theory of Acceptance and Use of Technology (UTAUT)
Tam and Oliveira (2016)	Delone and Mclean (D&M), Task Technology Fit (TTF)
Mehrad and Mohammadi (2017)	TAM
Sharma et al. (2017)	TAM
Changchit et al. (2017)	TAM
Chaouali et al. (2017)	Theory of Trying (TT)
Malaquias et al. (2018)	DIT
Zhou (2018)	DIT, TTF, UTAUT, D&M
Chavali and Kumar (2018)	TAM
Shareef et al. (2018)	e-Government Adoption Model (GAM)
Baabdullah et al. (2019)	UTAUT 2, D&M
Sharma and Sharma (2019)	D&M
Baabdullah et al. (2019)	TAM, TTF
Elhajjar and Ouaida (2019)	TAM
Owusu et al. (2020)	TAM, DIT
Rombe et al. (2021)	Barrier Model

Based on table 6, shows that the most used theory is TAM. Figure 6 displays a pie chart showing that TAM is frequently used for discussing the implementation of mobile banking.

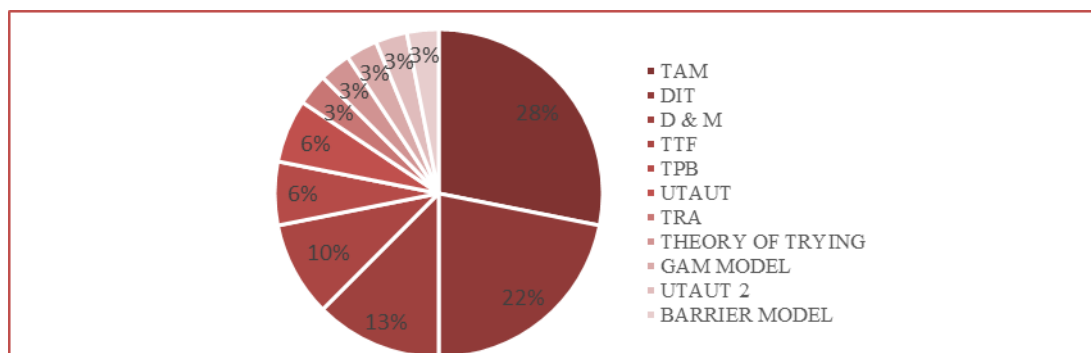


Figure 7. Most Used Theory in Implementation of Mobile Banking

CONCLUSIONS AND RECOMMENDATIONS

This study purposes to answer RQs that are proven from the results of previous research that has been identified, assessed, and interpreted. Based on the search and selection process, 20 Scopus papers discuss the implementation of mobile banking, with publication years from 2010 to 2021. Lin (2011) as the top three influential researchers, with 1.105 total citations. The implementation of mobile banking focuses on 6 topics: intention, adoption, usage, implementation barriers, individual performance, and loyalty. The most widely used method is survey research with a cross-sectional design. Additionally, TAM is frequently used for discussing the implementation of mobile banking.

Only a few SLRs on the implementation of mobile banking explain comprehensively. Accordingly, this SLR attempt to discuss comprehensively, with a review of the latest papers. The SLR outlines implications that can assist practitioners in surmounting the deceleration issue in implementing mobile banking. These results can be used as empirical evidence for future researchers in the field of implementing mobile banking.

The search process is manually conducted. As a result, other papers on the implementation of mobile banking will probably be excluded. Further research is expected to increase the number of papers, with papers that have a longer publication year, and wider publication journals. In addition, further research can review papers with distinctive designs, methods, and theories. Primarily, mobile banking has been implemented for quite a long time. Hence, further research is expected to evaluate the implementation success of mobile banking.

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