Unleashing the Potential of Digital Banking: A Conceptual Model of Variables Influencing the Use of Digital Banking Services in Sri Lanka

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Abstract:- **The growth in the use of digital banking services is not at the level anticipated in most emerging nations, which has drawn intense academic scrutiny. In order to comprehend the issue, this study presents a novel model with a focus on the Sri Lankan environment by taking Sri Lanka as a case study; however, this effort may help other countries confronting similar challenges and potential applications with the best results. Five exogenous variables are assessed collectively under this framework for their effects on behavioral intentions to interact with digital banking channels. The model includes four moderators that further explain their effects on the association between behavioral intention and the factor variables. Insights from four well-known theories are used to establish the new model, which provides banks with useful information for developing promotional tactics for the use of digital banking services and also helps the government and other responsible bodies come up with effective policies to expand their use. In addition, it intends to fill the knowledge gap in the dynamics of the adoption of digital banking services, boosting consumer involvement not only in Sri Lanka but also in larger global contexts.**

KeyWords:- *Digital Banking Services, Digital Banking Channels, Sri Lanka, Emerging Economies*

I. INTRODUCTION

The majority of our lives have undergone tremendous change as a result of technology, and businesses are no exception. Continuous technological development has upended established company paradigms, creating new avenues for growth and innovation (Iansiti & Levien, 2004). With advances in Fintech, the financial sector has experienced fast change. Millar (2017) argued that the banking industry has changed significantly as a result of fintech advancements. The banks are now providing a plethora of digital channels through which customers can access banking services and conduct various transactions.

Global Digital Market Report 2021–2026 presents that the use of DB technology is expanding and becoming more popular around the world (Research & Market, 2021). According to Statista (2021), it predicts that there will be 2,551.8 billion online banking customers worldwide in 2024.

According to the Department of Census and Statistics (2021), 21.34 million people reside in Sri Lanka as of 2021, and 10.90 million people were online as of the same year (Kemp, 2021). As claimed by Lahir (2022), the e-commerce industry is providing some fascinating facts. Over the age of fifteenth, 73.6% of Sri Lankans have an account with a financial institution. 7.7% of people used online banking in 2021. Additionally, it was found that in the same year, at least 2.7% of the population made online purchases, 4.7% of people paid their bills online, and about 47.2% of people made digital payments. Wilson (2019) claims that the use of DBSs in Sri Lanka is still debatable. According to BCG's Center for Consumer Insights, 80% of the population has access to financial services, yet only 12% of people use the Internet to shop (Jit Kaur et al., 123 C.E.), and only 3% of people make purchases online. In comparison to other nations like Indonesia, the Philippines, and India, the number is lower (Sankar et al., 2021); therefore, It is crucial to develop a new model that takes into account factors including "perceived usefulness", "perceived ease of use", and "online security" (Gayan Nayanajith et al., 2019).

Following on these facts, the author developed new models by incorporating "perceived usefulness (PU)", "perceived ease of use (PEU)", "perceived security (PS)", "knowledge (KNW)", and "rewards (RWD)" as exogenous variables that impact the behavioral intention (BI) to use digital banking services (DBSs), Additionally, the author has incorporated "age", "gender", "education", and "experience" as moderators into the model to assess how they jointly affect the association between the exogenous variables and the mediator variable of BI.

II. LITERATURE REVIEW

A. Concept of DBS

According to Nguyen (2020), "It is an operational model that makes use of technological platforms to obtain financial services and carry out transactions." Banks do not force their clients to visit their physical branches. It is a system designed to deliver banking and financial services through electronic channels, enabling consumers to conduct transactions, access account information, and communicate with their financial institution without going to a physical branch (World Bank Group, 2020). The platforms and tools that banks offer as part of their DBSs allow customers to access and manage their money from a distance (Tavaga Invest, 2023).

B. Scope of Digital Banking Channels

RBI (2017) and FSB (2017) present that the scope of digital banking channels comprises a wide array of electronic platforms and interfaces through which clients can access and engage with financial services. They include the following.

➤ *Internet Banking:*

Enabling customers to use the bank's website to access their accounts and conduct financial transactions by taking the necessary actions.

➤ *Mobile or Phone Banking:*

Using tablets or smartphones to log into banking accounts and conduct transactions. Customers can access financial services while on the go.

➤ *Automated Teller Machines (ATMs):*

Machines available for cash withdrawal. Customers can also get other services like checking their account balances and money transfers.

➤ *Cash Deposit Machines (CDM):*

These are devices designed to accept cash deposits at any time of day.

➤ *Debit and Credit Cards:*

Debit cards are plastic cards that banks give to their customers, enabling them to withdraw money and make purchases. However, credit cards give their users credit limits, so they can use them to make purchases, pay bills, etc.

➤ *Internet Payment Gateway (IPG):*

The tools made available online to businesses so they can take credit and debit card payments for the products and services their clients buy.

➤ *POS and MPOS:*

Merchants can accept consumer payments made using credit and debit cards thanks to point-of-sale (POS) technology.

➤ *QR Codes:*

A service that enables users to pay for purchases with their cell phones.

➤ *Virtual Assistants and Chatbots:*

A method used by banks to address inquiries from customers and offer support through text or voice interactions.

C. The review of Variables Used in the Model

➤ *The "Use" of DBSs* (USE)

The use refers to the actual actions taken by people who use banking services through digital channels. As the evidence suggests, a variety of factors affect how we behave. According to Skinner (1938), "Behavior is the result of the organization's interaction with its environment." It is referred to by him as "all observable actions or movements displayed by individuals or groups." According to Bandura (1982) and Pavlov, (1927) behavior is a conditional reaction that results from the interaction between stimuli and responses. The use

refers to how much a person wants to utilize technology or engage with it to accomplish a particular task (Davis et al., 1989; Venkatesh et al., 2003). To understand the connection between user intention and actual technology use, Mathieson (1991) took into account "use" as an outcome variable. Reddy et al. (2017) emphasize that a variety of factors may affect our decision to buy a specific product or brand. The TAM, which Davis (1989) devised, illustrates the relationship between "intention to use" and the acceptance of technology.

➤ *Behavioral Intention* (BI)

According to Ajzen and Fishbein (1975), "BI refers to the measure or degree of intensity of an individual's intention to perform a specific behavior." Their definition places a strong emphasis on the use of BI in understanding and predicting human behavior. By examining an individual's intention, we gain important insights into their motivations and propensity to engage in a particular behavior. Fortes and Rita (2016) claim that several antecedents influence a person's purpose. Venkatesh (2000) underlines that a person's desire to use technology motivates them to learn more about it. According to Davis (1989), BI is a mediator variable that affects how people use technology. Jeyaraj (2021) indicates that several antecedents have an impact on the relationship between BI and use, and they are important factors in models created on TAM and UTAUT to explain technology use.

➤ *Perceived Usefulness* (PU)

According to Davis (1989; p. 320), "the degree to which a person believes that using a particular system would enhance his or her job performance." PU is a significant variable that has been reviewed in both Sri Lankan and international contexts (Mano et al., 2020; Saputra & Rekarti, 2021). In the realm of DB, the influence of PU is a well-acknowledged factor (Madusanka & Kumari, 2021; Mano et al., 2020). Most of them explain how PU is a probabilistic component that is subjective and affects how much change they can make using technology. In other words, it's a perception that technology is helpful and enables people to do jobs swiftly from any location; yet, if it is not regarded as useful, it may also act as a mental barrier.

➤ *Perceived Ease of Use (PEU)*

PEU is "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989; p. 320). According to Venkatesh (2000), before performing a particular action, a person must first acquire the mental intention that he can do it. If not, it is doubtful that the person will carry out the activity even if they have the necessary abilities. PEU is a notion that refers to how easy it is to comprehend and apply technology, according to Zeithaml VA et al. (2002). It is a specific kind of cognitive challenge connected to one's interaction with technology. The variable PEU is connected to the simplicity with which technology can be understood, learned, and applied (Rogers, 1962). However, the majority of customers, particularly those in rural regions, believe that using these services is exceedingly difficult and that only people with high levels of competence can do so. The development of DBSs is slowed down by this cognitive barrier, especially in rural locations. Online banking is the least time-consuming option, according to Mathieson (1991).

PEU, according to Mano et al. (2020), is a major motivator for users to use e-banking services.

> *Perceived Security (PS)*

Security, according to Zhang et al. (2019), is the degree to which a person believes that using DBCs to access banking services is secure. It's a crucial component that DBCs must possess (Phothikitti, 2020). As described by Lee (2009), it is the degree of risk that a person perceives in the event that hackers breach the security of an online bank user. Security is regarded as a crucial component while accessing financial data (Dapp, 2017). Even though using the Internet has many advantages, Aboobucker and Bao (2018) claim that many are still hesitant to do so because they are concerned about its security. Online users throughout the world are at risk from cyberattacks, according to De Kok et al. (2020). The opinion on the security of DBCs in Sri Lanka varies, as per Wijayaratne (2015).

> *Knowledge (KNW)*

According to Nonaka and Takeuchi (1995; p. 87), "justified true belief" is knowledge. Bolisani and Oltramari (2012) describe knowledge as a process of comprehension, awareness, and familiarity achieved as a result of learning something new or having an insight. Lack of knowledge sharing causes gaps in the system, which leads to an output that is less desirable than what was originally intended (Baird and Henderson, 2001). Knowledge refers to a person's capacity to recall and apply patterns, structures, or contextual knowledge relevant to the situation at hand (Bloom et al., 1956), and it aids in changing behavior appropriately as the situation requires (Rasmussen, 1983). Knowledge is a significant aspect that drives people to use IT, claim Lim et al. (2019). Knowledge is necessary for students and teachers to have intention in e-learning, according to Al-Maroof et al. (2021). In the study of Rassool and Dissanayake (2019), they claim that it is a key element in the formation of IT policies promoting a knowledge-based society and thereby accelerating the growth of digital transformation. According to Mano et al. (2020), knowledge is a crucial factor in influencing people's decisions to use mobile banking.

> *Rewards (RWD)*

Studies usually define rewards as effective reinforcements or incentives that influence behavior and motivate people to carry out particular actions or achieve particular objectives. The well-known theory of operant conditioning, which was first presented by Skinner (1938), discusses rewards in research. Rewarding behavior can be reinforced with prizes in order to encourage it. This reinforcement might come in the form of material rewards (like cash incentives or other presents) or intangible ones (like acknowledgment, admiration, or appreciation). In the context of motivation theories, such as "the Self-Determination Theory (SDT)" created by Deci and Ryan (1985), the idea of rewards is extensively studied. "Three inherent motivations— autonomy, competence, and relatedness—are emphasized by SDT as essential psychological demands". Autonomous motivation, which is characterized as a sense of volition, involvement, and personal fulfillment, can be encouraged by rewards that satisfy these three requirements. In their study,

Gagné and Deci (2005) looked into the role rewards might have in boosting autonomy. Deci and Ryan (2000) claim that through satisfying human wants and influencing self-determined behavior, rewards can have an impact on goal efforts. Lepper and Henderlong (2000) discussed how play becomes work and work becomes play in order to shed light on the dynamics of intrinsic and extrinsic motivation. To onboard non-users of digital channels and reduce adoption barriers, potential advantages and financial incentives are essential.

> *Personal Differences (as Moderator Variables)*

Attributes and qualities that make one person different from others can be explained as personal differences. According to Agarwal and Prasad (1999), any difference between people is called "personal difference." UTAUT2, according to Venkatesh et al. (2012), presents how personal differences modify the relationship between behavioral intention and its antecedents. In several studies conducted in the past, "age, gender, education, and experience have been used as moderators" (Alalwan et al., 2020; Apaua & Lallie, 2022; Sánchez-Torres et al., 2018; Venkatesh et al., 2012). When it comes to digital banking services, personal variables such as age, gender, education, and experience can have a big impact on an individual's preferences and behaviors (Agnihotri et al., 2016; Chen, 2023).

The characteristics and traits that set one individual apart from another can be attributed to personal differences. Agarwal and Prasad (1999) assert that a "personal difference" is any distinction between humans. Venkatesh et al. (2012) claim that UTAUT2 illustrates how individual differences affect the link between behavioral intention and its antecedents.

In many earlier studies, demographics and other personal traits (including age, gender, education, and experience) have been utilized as moderators (Alalwan et al., 2020; Apaua & Lallie, 2022; Putra & Darma, 2019; Sánchez-Torres et al., 2018; Venkatesh et al., 2012). When it comes to the use of DBSs, these moderator variables may influence people's decisions and actions (Agnihotri et al., 2016b).

D. Theories Used in the Formation of the New Model

"The theory of planned behavior (TPB)", "the technology acceptance model (TAM)", "the unified theory of acceptance and use of technology (UTAUT)", and "the operant conditioning model" are the four fundamental theories that are taken into consideration in this study. The objective is to offer a thorough understanding of the elements affecting Sri Lankan clients' utilization of digital banking services.

TPB was first proposed by Ajzen (1991a) and describes how BI is influenced by its antecedents of attitudes, subjective norms, and behavioral control to exhibit behavior. TPB, according to Armitage and Conner (2001), is highly effective at foretelling and explaining specific behavior displayed in various contexts or circumstances. Davis (1989) created the TAM, which is a variation of the TPB.

The impact of consequences on subsequent behavior is a key component of the operant conditioning learning theory developed by Skinner (1938). In the study of Kazdin and Bootzin (1972), it was asserted that reward makes a behavior more likely to occur frequently. The benefits of adopting operant conditioning techniques are emphasized by the positive reinforcement effect, which has a positive impact on BI (Whittaker et al., 2021). Similar to this, Joshi and Bhatt (2021)established the link between reinforcement and user behavior, giving information about how likely users of mobile banking are to keep using the service. All of these research study examples help us better understand how user intentions and behavior are shaped by operant conditioning principles like reinforcement in a range of contexts like education, social networking, and mobile banking.

Including TAM, elements from eight different models were used to build UTAUT1. The telecare technology adoption by healthcare professionals was validated using the model. The research shows that certain of the model's antecedents can successfully describe how they affect people's behavioral intentions to use telemedicine. Numerous antecedents in UTAUT have an impact on BI. According to earlier research (Chang, Liu, et al., 2019; Mberi & Kekwaletswe, 2020; Venkatesh et al., 2012), a specific model or group of models can be mixed with other variables to assess their influence on behavioral intentions to behave or perform in a specific way. This justification backs up the author's selection of the best conceptual framework for the investigation.

E. Proposed Model for Increasing Digital Banking Channel Use

After looking through and analyzing the data, the model shown in Figure 1 was built by including variables like PU, PEU, PS, KNW, RWD, BI, and USE. The four moderators of the model are age (AGE), gender (GDR), education (EDU), and experience (EXP). The factor variables PU, PEU, PS, KNW, and RWD have an effect on BI, the mediator variable in the model. The dependent variable is "The Use of DBSs Provided by Banks in Sri Lanka".
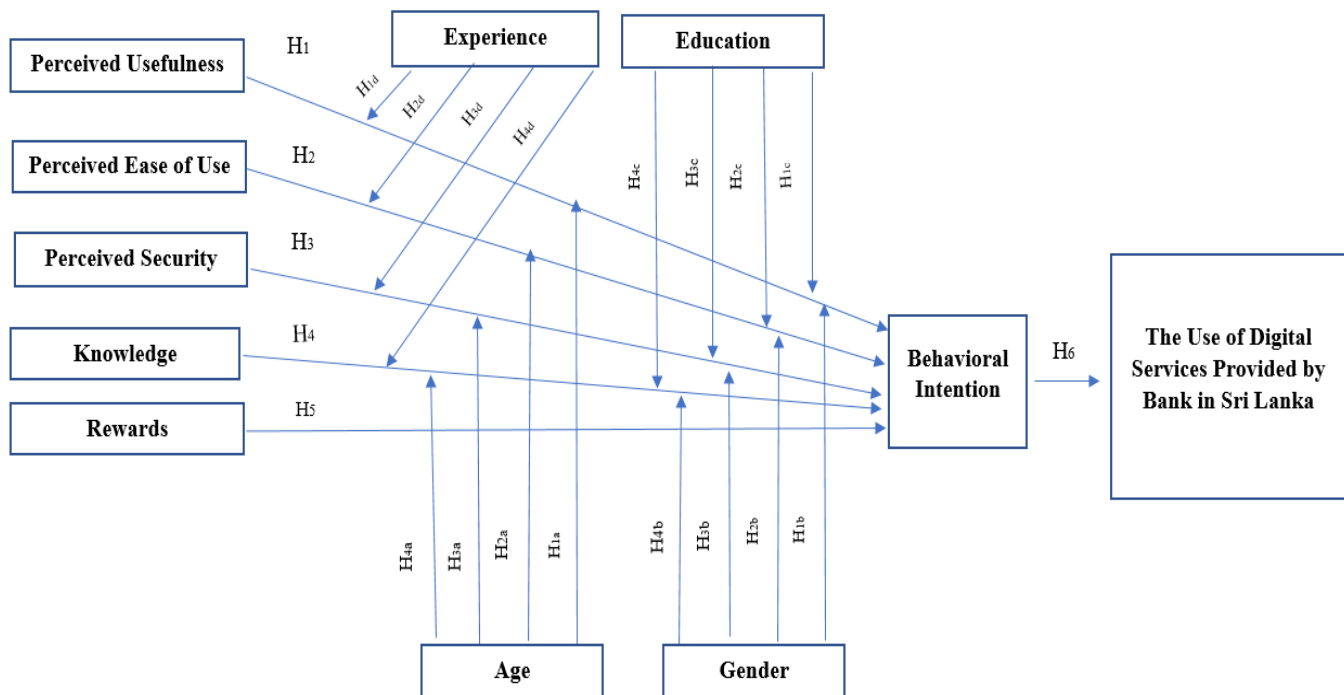

Fig 1 Conceptual Framework

F. Formation of Hypothesis

➢ *Perceived Usefulness (PU) vs. Behavioral Intention (BI)*

Venkatesh et al. (2003) found a positive and significant correlation between PB and BI. It was claimed that PU significantly influences people's intentions to utilize mobile banking in the studies by Davis (1989) and Venkatesh et al. (2012). Additionally, Alalwan et al. (2021) contend that PB and BI have a positive and significant relationship; therefore, the following conclusion can be drawn between BI and PU:

- *H1: PU and PU positively correlated.*

➢ *Perceived Ease of Use (PEU) vs. Behavioral Intention (BI)*

Davis (1989b), in his model of TAM, emphasizes the connection between PEU and BI as being direct. Since BI and PEU are positively and strongly connected, according to Wang et al. (2021), the hypothesis between BI and PEU can be drawn as shown below:

- *H2: The association between PEU and BI is positive and significant.*

➢ *Perceived Security (PS) vs. Behavioral Intention (BI)*

According to Liao et al. (2021), there is a positive and substantial association between PS and BI. They also discovered that people have a strong propensity to utilize digital DBCs if excellent security is guaranteed. Oyedele et al. (2019) assert that PS has a significant and positive influence on BI about the adoption of Internet banking in the United Kingdom. Users place the highest priority on security; they are more inclined to transact if they feel that payment systems are secure (Pu et al., 2020). Consequently, it is possible to form the following hypotheses:

- *H3: The association between PS and BI is positive and significant when using DBS.*

➢ *Knowledge (KNW) vs. Behavioral Intention (BI)*

Al-Alak and Alnawas (2011) note that past studies revealed that knowledge and behavioral intention played a substantial and positive role in determining a person's behavior. According to Sabraz Nawaz et al. (2018), knowledge is a prerequisite for adoption in the realm of mobile banking. Additionally, Chandrasiri and Karandakatiya (2018) made it clear in their study that knowledge is a crucial factor in the expansion of the use of DBSs; therefore, the assumption can be made as shown below.

- *H4: KNW has a positive relationship with BI regarding increasing the use of DBSs.*

➢ *Rewards (RWD) vs. Behavioral Intention (BI)*

The different rewards users receive, in accordance with Windasari et al. (2022a), play a crucial role in encouraging individuals to use DBSs. To attract new customers and encourage use, banks must offer both monetary and emotional benefits. Clients are encouraged to use Internet banking services more frequently through discounts and charge exemptions (Galhena & Gunawardena, 2022). This evidence supports the following assumption regarding the association between RWD and BI:

- *H5: BI is positively influenced by RWD.*

➢ *Personal Differences*

Individual differences caused by factors like AGE, GDR, EDU, and EXP alter the association between BI and its antecedents, according to the findings of studies conducted by Venkatesh et al. (2003) and Ha et al. (2007). The research of Shin (2009) emphasized the relevance of demographic characteristics as modifiers and their significance. As a result, the following hypotheses are drawn that include moderators:

- *H1a: AGE alters the association between PU and BI.*
- *H2a: AGE alters the association between PEU and BI.*
- *H3a: AGE modifies the relationship between PS and BI.*
- *H4a: AGE modifies the association between KNW and BI.*
- *H1b: The association between PU and BI is modified by GND.*

- *H2b: The association between PEU and BI is modified by GND.*
- *H3b: The association between PS and BI is modified by GND.*
- *H4b: GND modifies the association between KNW and BI.*
- *H1c: EDU modifies the association between PU and BI.*
- *H2c: EDU modifies the association between PEU and BI.*
- *H3c: EDU modifies the association between PS and BI.*
- *H4c: EDU modifies the association between KNW and BI.*
- *H1d: EXP modifies the association between PU and BI.*
- *H2d: EXP modifies the association between PEU and BI.*
- *H3d: EXP modifies the association between PS and BI.*
- *H4d: EXP modifies the association between KNW and BI.*

III. CONCLUSION, DISCUSSION, AND MANAGERIAL IMPLICATIONS

By using Sri Lanka as a case study, this study based on a new model provides some useful insights for comprehending the underlying barriers inhibiting the spread of digital banking services in emerging nations. Additionally, it permits the author to make beneficial contributions to the field of knowledge already in existence. However, the results enable the development of effective approaches for boosting DBS usage in rural areas with low acceptance.

Financial inclusion is one of the key foundations of the digital economy. A significant expansion of digital channels will be required to ensure that the financial system reaches as many people as possible, especially in rural areas. Financial inclusion makes it possible for people and enterprises to fully participate in the digital financial ecosystem, especially for those who were previously underserved or excluded from traditional financial services. This has a significant impact on the digital economy. Financial inclusion promotes economic growth, innovation, and productivity by providing access to fundamental financial services including bank accounts, payment systems, loans, and insurance through digital channels. It enables users to safely save money, conduct online transactions, and obtain loans for business growth or investments in digital technology. These programs encourage consumer spending, support digital entrepreneurship, and raise the overall effectiveness and inclusivity of the digital economy. The direction and wise counsel provided by the new model will be helpful for this quest.

The model described in this article provides a thorough knowledge of the factors influencing the development of digital banking services in developing countries like Sri Lanka as a result. We can increase our understanding, fill up the information gap, and develop workable plans for increasing the acceptance and consumption of digital services by employing these insights.

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