Journal of Euromarketing, 30: 72 - 94, 2021

ISSN: 1049-6483 print / 1528-6967 online

IMDA Press

ARTICLES

The Role of Personal Innovativeness in French Omnichannel Banking

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ABSTRACT. Based on an extended Technology Acceptance Model (TAM), the research by Kaabachi et al. examines omnichannel banking adoption in France and attempts to identify the factors influencing consumers' intention to use omnichannel banking. It also explores the moderating effect of personal innovativeness. Based on 239 multichannel customers, Structural equation modelling and multiple group analysis were performed to test the hypotheses. This study successfully extended TAM to omnichannel banking in France, integrating the multichannel integration quality construct and awareness to explain consumers' beliefs and usage intention in the omnichannel behavior context. Further, it integrates individual factors such as personal innovativeness as a moderating factor. Results reveal that personal innovativeness had a moderating effect and that perceived ease of use and perceived usefulness significantly affected intention to use omnichannel banking channels. Multichannel integration quality and awareness were the main drivers of perceived usefulness and ease of use. However, anxiety negatively influenced consumers' beliefs about omnichannel banking. The findings have important implications for French retail banks to promote and implement their omnichannel banking marketing strategy effectively. Creating awareness about omnichannel banking usage while providing a consistent and seamless banking experience is critical for the success of omnichannel banking.

KEYWORDS. Omnichannel banking; multichannel integration quality; extended TAM model, France

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INTRODUCTION

The evolution of technology and ongoing digitalization enables consumers to determine which channels they would like to use to interact with retailers. A growing number of consumers simultaneously use multiple channels of distribution of the same retailer during their shopping journey. Consumers who are equipped to shop anywhere, anytime, do not differentiate between online and physical channels and switch between them depending on their needs. Today, consumers are accustomed to Amazon, Netflix, and Uber, who offer seamless online and offline transactions and expect to have a similar experience with their financial services providers (Komulainen & Makkonen, 2018).

According to the Accenture Global Financial Services Consumer Study (2019), more than half of all survey respondents expressed an interest in an omnichannel banking experience. Indeed, some say that their digital interaction with financial services providers is less satisfactory than their digital experience with other retailers. This lack of consistency and ease across channels can make customers switch banks and find the services that work best for them. Today, banks are competing against the GAFAS (Google, Amazon, Facebook, and Apple), which are creating value for customers through developing an integrated, seamless experience. Banks need to be more proactive with their analytics to understand why customers are using them for some transactions and avoiding them for others (Rizzi & Taraporevalais, 2019).

Although banks are aware of the potential benefits when using omnichannel capabilities, its implementation is very slow in France. The Efma and Backbase survey (2015) confirmed that 61% of banks consider the creation of seamless omnichannel experiences as being extremely important. As of 2020, Efma conducted a study showing that France was slowly moving to mobile banking and that even though French banks have invested in omnichannel relationships, French clients are still not adopting it yet. Indeed, French consumers' main concern is the ease of use of digital banking services (Efma, 2020). In France, most banks were still in the exploration phase of their omnichannel strategy. Half of the surveyed institutions had not begun making substantive efforts, and only one in ten surveyed institutions was executing an omnichannel strategy. Thus, it is important to understand the factors that influence French consumers when using omnichannel banking.

Nowadays, this unified experience is a strong expectation from most consumers (Komulainen & Makkonen, 2018). It is in banking institutions' interest to identify the driving forces behind omnichannel banking use and implement the right strategies. Recent studies have recognized the technology acceptance model (TAM) and extended UTAUT2 models as the most influential research models to explain users' acceptance and adoption behavior in the omnichannel context (Juaneda-Ayensa et al., 2016; Kazancoglu & Aydin, 2018). However, the extension to omnichannel banking behavior is still relatively unexplored. This research focuses on the potential adopters of omnichannel banking and attempts to empirically investigate the factors that influenced their decision to use omnichannel banking.

The TAM is a robust and parsimonious theory for predicting and explaining consumer propensity to use technology and its actual usage. It has been applied in various IT contexts, including financial services, such as online banking (McKechnie et al., 2006) and mobile payment services (Kim et al., 2009). Accordingly, we use TAM as the basis for this research model and extend it to an omnichannel banking context by incorporating three additional variables: awareness about new technology, compatibility from IDT (Rogers, 2003), and multichannel integration quality (Juaneda-Ayensa et

al., 2016; Kazancoglu & Aydin, 2018; Kabadayi et al., 2017; Saghiri et al., 2017; Hamouda; 2019; Mainardes et al., 2020). Also, since previous studies have stated the moderating effect of personal innovativeness regarding new technology in the TAM (Cheng, 2014; Agrawal & Prasad, 1998; Venkatesh et al., 2003), the present research incorporates personal innovativeness and its moderating effect on consumers' beliefs about omnichannel banking and their intention to use it. Additionally, we explore the factors contributing to usefulness and ease of use, and their effect on omnichannel banking usage intention.

This research contributes to the literature by extending TAM and combining it with Innovation Diffusion Theory (IDT) to understand the omnichannel banking context. The paper incorporates five variables such as awareness about omnichannel banking, anxiety, compatibility, and multichannel integration quality as well as personal innovativeness.

From a managerial standpoint, this study is relevant to banks as it helps them in their segmentation strategy and allows them to understand customers in the early stages of adopting a more integrated experience.

This paper is organized as follows: A literature review of omnichannel banking studies is provided, followed by the development of a conceptual model and hypotheses based on Technology Acceptance Theory. The sample and research methods are then elaborated on, and results are presented. Finally, implications, limitations, and future research directions of the study are addressed.

LITERATURE REVIEW

Omnichannel Banking

Omnichannel banking is defined as customers utilizing all banking channels simultaneously so that bankers can track customers across all channels (Agarwal & McGinty, 2015). Omnichannel can be regarded as an evolution of multichannel retailing (Wojciech & Cuthbertson, 2014). While multichannel banking and omnichannel banking seem similar, omnichannel banking presents a few differences (Tang & Boating, 2014; Efma & Backbase, 2015; Agarwal & McGinty, 2015; Farah, 2013) (Table I).

Unlike a multichannel banking strategy, omnichannel retailing customers use various and independent channels to transact with their financial institutions implying the convergence of virtual channels, physical channels, and analytical capabilities to reach a specific goal (Tang & Boating, 2014). Multichannel banks rely on a system of data records for banks' use, while omnichannel banks rely on a network of engagement where data are mined for valuable customers insights. Indeed, multichannel retailing refers to the presence of retailers across multiple distribution channels that are usually managed as independent entities to enhance customer value and reach a broader range of consumers (Frazer & Stiehler, 2014; Picot-Coupey et al., 2016). In the context of retail banking, according to the multichannel approach, customers use various channels that are isolated from each other and do not share information about the customer. When channels are managed independently, they create a fragmented supply chain and struggle to provide consistent and reliable services to customers (Verhoef et al., 2015).

However, omnichannel retailing may be perceived as a single integrated channel with multiple touchpoints delivering a seamless experience for customers. Omnichannel retailing has been defined as "the synergic management of the numerous available channels and customer touchpoints, in such a way that the customer experience across channels and the performance over channels are optimized" (Verhoef et al., 2015, p. 175).

There are significant challenges faced by businesses in setting up an omnichannel environment (Melero et al., 2016; Verhoef et al., 2015):

Table 1. Omnichannel in Retail Financial Services

Channel Type	**Multichannel banking**	**Omnichannel banking**
Channel structure	-The proliferation of discrete channels	-Fusion and merger of physical and virtual channels
Information and data	-Siloed, back-mirror view -Structured	-Pervasive, forward-looking -Unstructured
Customer experience	-Mainly convenience -Disjointed experience	-Embedded and contextual banking -Offering customers, a holistic shopping experience -Virtual capabilities everywhere
Bank value proposition	-Cost containment: customers moved to cheaper channels	-Maximize value (revenue and costs) to customers and bank
Consumer approach	**A bank-centric view** -Managing clients' money reliably and processing their transactions accurately -Banks are organized around products -Allowing clients to transact with the bank via multiple channels -Understanding what clients need through analytics	**A client-centric view** -Thinking about customer segments instead of products—and basing those segments on behaviours -Allowing clients to interact with the bank via multiple channels -Understanding and anticipating what clients want and like through analytics.

• Profitability - With omnichannel retailing, firms focus on overall customer profitability across all channels (Verhoef et al., 2015).
• Seamless multichannel integration - The principle of seamlessness consists of customers moving smoothly from one phase to another through different channels.
• Consistency across channels - This challenge is to standardize information while developing a uniform look and feel across all channels. In this context, the bank operates as a single platform by providing a consistent image with the same products, services, prices, information, transactions, promotions, and customer service across all of its touchpoints (Berman & Thelen, 2004).

To better understand omnichannel banking, the Technology Acceptance Model is used.

Extended TAM: Conceptual Model

The TAM is recognized as a robust and parsimonious theory for predicting and explaining consumer propensity to use technology. Drawn from the Theory of Reasoned Action, the model suggests that one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, perceived usefulness of the system, and perceived ease of use (Venkatesh & Davis, 1996). Perceived usefulness, defined as the degree to which a person perceives that adopting the system will improve his/her job performance; and perceived ease of use, defined as the degree to which a person believes that adopting the system will be free of effort, are the most salient factors influencing users' intentions. While perceived usefulness directly affects adoption intention, perceived ease of use has both direct and indirect effects via perceived usefulness.

Individual differences and system characteristics have been recognized as significant external variables of the TAM (Venkatesh, 2000; Dabholkar & Bagozzi, 2002; Davis, 1993; Kim et al., 2009). It has been established that habits

primarily influence consumers' use of technology (Venkatesh et al., 2012), awareness about new technology (Rogers, 2003), user innovativeness (Kim et al., 2009; Venkatesh & Davis, 2000), and computer anxiety (Venkatesh, 2000). System features like output quality (Venkatesh & Davis, 2000), accessibility, convenience (Kim et al., 2009), and system quality (Venkatesh et al., 2012) also play an essential role in affecting both the perceived ease of use and the perceived usefulness of an information system. Indeed, to enhance the extended TAM's explanatory power, several studies have combined the view of TAM with the compatibility construct of IDT to explain user acceptance of new technology (Wu & Wang, 2005, Karahanna et al., 2006; Cheng, 2014). Some recent studies extended the (TAM) or UTAUT2 models to omnichannel context (Juaneda-Ayensa et al., 2016; Kazancoglu, & Aydin, 2018) and highlighted those variables like habit, hedonic motivation, personal innovativeness, perceived security, social influence, effort expectancy, performance expectancy, price value, perceived trust, situational factors, perceived risk, anxiety, need for interaction, and privacy concern are drivers of purchase intention in an omnichannel context.

Unlike other studies, this research focuses on the initial stage of omnichannel banking adoption. It explores the effect of omnichannel banking awareness on perceived usefulness, ease of use, and thus the intention to use omnichannel banking. In addition, we explore the effect of anxiety when using omnichannel banking. Multichannel integration quality has also been recognized as an influential factor for omnichannel behavior acceptance (Kabadayi et al., 2017; Saghiri et al., 2017; Hamouda; 2019; Mainardes et al., 2020).

Accordingly, we extend TAM to omnichannel banking by integrating awareness about omnichannel usage and its benefits, anxiety, compatibility, and multichannel integration quality (Figure 1). Thus, in the following section, hypotheses are developed.

HYPOTHESES

Awareness about Omnichannel Banking Usage and Its Benefits

The adoption process starts with the knowledge stage, in which an individual learns about the existence of innovation and seeks information about it (Ismail, 2006). According to the IDT theory (Rogers, 2003), the level of knowledge about innovations is crucial in the initial adoption stage to increase product awareness among consumers and reduce their uncertainty (Rogers, 2003). Shareef et al. (2018) showed that consumers' awareness about the scope, facilities, and benefits of mobile banking is logically a driving force for adoption at the static stage when the service is so novel. Indeed, Al-Somali *et al*. (2009) have defined internet banking services awareness as the information consumers have about the services and their benefits and showed the direct effects of internet banking and its benefits on usefulness perception. Similarly, Raza et al. (2017) revealed that awareness about mobile banking services reduces the perception of risk and that awareness also had a significant impact on perceived usefulness and perceived ease of use. Thus, since omnichannel banking is a relatively new customer banking experience, consumers' awareness about it is important. Accordingly, we posit that:

H_{1a}.: Awareness of omnichannel banking has a positive impact on customers' perceived usefulness.

H_{1b}.: Awareness about omnichannel banking positively impacts customers' perceived ease of use.

Omnichannel Banking Anxiety

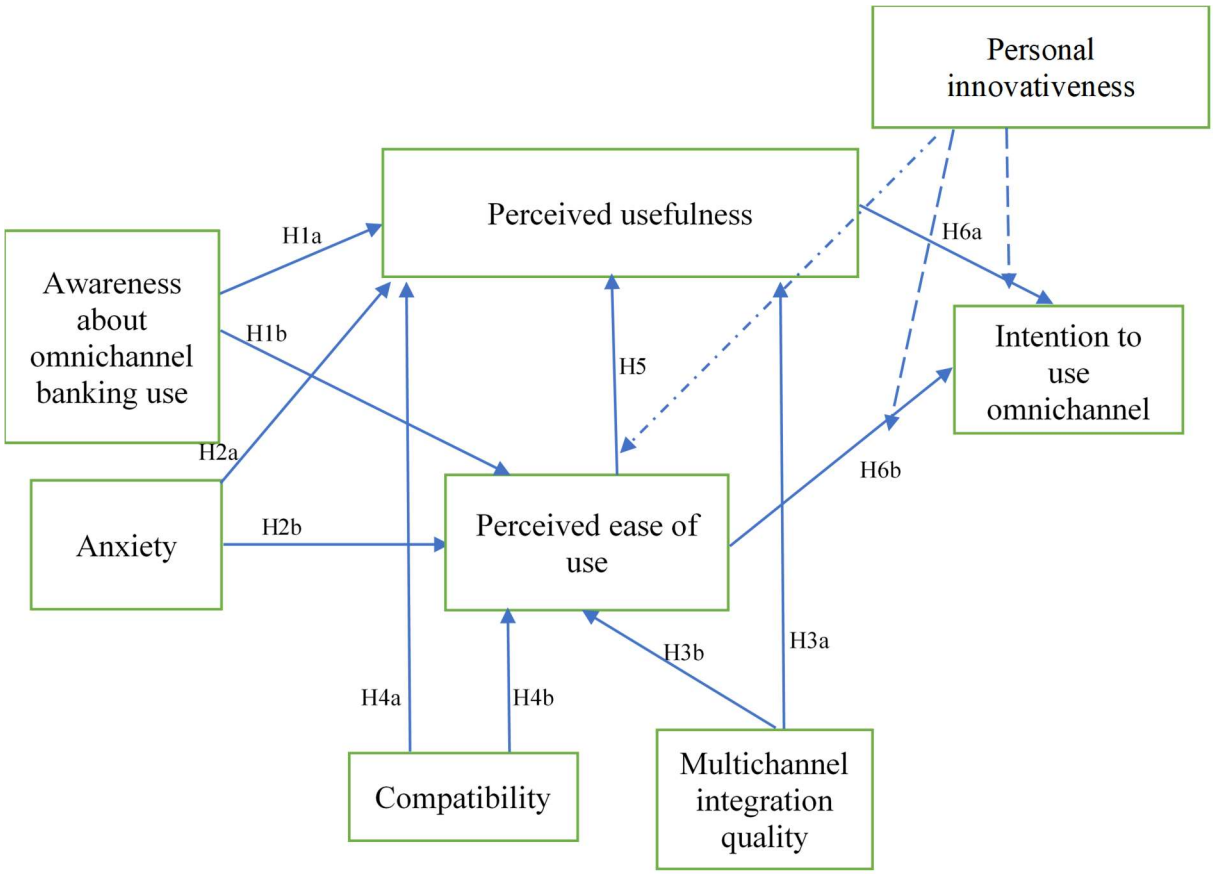
Anxiety is defined as anxious or emotional reactions when it comes to performing a behavior. Consumers may want to avoid technology, depending on their anxiety level (Venkatesh et al., 2003). Anxiety appears when individuals try to carry out behaviors that they

do not feel competent to perform (Bandura, 1977).

Several studies have revealed the effects of anxiety on an individual's attitude towards using, intention to use, ability to learn how to use, and performance when using a computer or an information system (Igbaria et al., 1995; Saadé & Kira, 2006; Saadé & Kira, 2009). Anxiety increases the effort required for task accomplishment and hinders the cognitive capacity needed to produce the desired task outcomes (Brown et al., 2004; Saadé & Kira, 2006). Both classical theories of anxiety (Philipi et al., 1972) and social cognitive theory (Bandura et al., 1960) suggest that the consequences of stress include a negative impact on cognitive responses, particularly process expectancies (e.g., efficacy, ease of use) (Venkatesh, 2000). Indeed, a high level of anxiety impacts the perceived ease of use (Venkatesh, 2000; Saadé and Kira, 2006) and perceived usefulness (Igbaria et al., 1995) negatively.

Figure 1. Conceptual Model

Omnichannel in Retail Financial Services



Accordingly, we hypothesize that:

H_{2a}.: Anxiety will negatively affect consumers' perceived usefulness of omnichannel banking.

H_{2a}.: Anxiety will negatively affect consumers' perceived ease of use of omnichannel banking.

Multichannel Integration Quality

Multichannel integration refers to providing customers with a consistent and seamless service experience allowing them to shift quickly from one channel to another (Sousa & Voss, 2006). A well-integrated multichannel system implies a consistency of interaction across channels, resulting in a uniform service experience regarding interactions across channels (Saghiri et al., 2017). In the retail banking context, Kabadayi et al. (2017) shed light on multichannel integration quality as an essential driver of consumers' perceptions of value. They argued that a well-integrated multichannel quality facilitates a seamless customer experience, avoids channel conflict, and minimizes customer confusion and perceived costs. Peltola et al. (2015) highlighted that providing integrated services experiences encourages customers to interact with the company and reduces the risk of losing customers during the customer journey. In the omnichannel banking context, Hamouda (2019) and Mainardes et al. (2019) demonstrated that a high perceived multichannel integration quality increases consumer satisfaction and commitment towards a bank. Accordingly, we posit that:

H_{3a}.: Multichannel integration quality across banking channels will positively affect consumers' perceived usefulness of omnichannel banking.

H_{3b}.: Multichannel integration quality across banking channels will positively affect consumers' perceived ease of use of omnichannel banking.

Compatibility

Several studies have combined the view of the TAM with the compatibility construct of IDT to explain user acceptance of new technology (Wu & Wang, 2005; Karahanna et al., 2006; Cheng, 2014). Compatibility is the degree to which using innovation is perceived as consistent with the existing socio-cultural values and beliefs, past and present experiences, and potential adopters (Rogers, 2003). A more compatible idea is less uncertain to the potential adopter (Rogers, 2003). In our research, we define compatibility as the degree to which omnichannel banking is consistent with the individuals' lifestyles and banking needs (how they like to manage their banking transactions).

In their study, Karahanna et al. (2006) found support for a positive relationship between the technical compatibility with consumers' values and existing working practices with perceived usefulness and ease of use. They argued that compatibility with current work practices results in less effort to utilize the technology, thereby rendering a new technology more comfortable to use. Indeed, perceptions of the usefulness of innovation depend on the fit between the innovation, one's existing practices, and one's preferred work style. Some studies have supported the relationship between compatibility and consumers' beliefs toward mobile acceptance (Wu & Wang, 2005), m-learning (Cheng, 2014), and e-banking (Wang et al., 2017). Few studies demonstrated that perceived compatibility strongly impacts omnichannel perceived usefulness (Silva et al., 2018; Shi et al., 2020). Shi et al. (2020) demonstrated the crucial role of perceived compatibility on omnichannel shopping intention use. They concluded that as an innovative retailing service, omnichannel shopping should be compatible with customers' previous shopping experiences and preferences to motivate adoption intention.

Thus, we posit that when omnichannel banking is regarded as consistent with consumers' lifestyles and with the way the consumers manage their banking transactions, omnichannel banking will be perceived as useful and easy to use.

H_{4a}.: Perceived compatibility of omnichannel banking usage with consumers' banking needs and lifestyles will positively affect perceived usefulness.

H_{4b}.: Perceived compatibility of omnichannel banking usage with consumers' banking needs

and lifestyles will positively affect perceived ease of use.

Ease of Use, Perceived Usefulness, and Intention to Use Omnichannel to Perform Banking Needs

According to the TAM, perceptions of usefulness and ease of use are critical determinants of technology acceptance behavior (Davis et al., 1989; Venkatesk & Davis, 2000). Most of the literature has asserted that if a person believes a new technology will benefit them, they will more likely adopt it (Pavlou, 2003). However, the role of perceived ease of use in the TAM remains debatable (Yousafzai et al., 2007). While some studies (Igbaria et al., 1997) have shown that perceived ease of use (PEOU) has a direct and equal or a stronger effect than perceptions of usefulness (PU) on technology adoption, others have found a spurious relationship between PU and initial usage and have suggested that PEOU is an intervening variable between usage and PU (Davis,1989).

Davis et al. (1989) found that the direct effect of perceived ease of use on the intention to use is more substantial in the early stages of learning and behavior. With time and experience, the result was found to become indirect, operating through perceived usefulness. According to Davis (1993), perceived ease of use has a positive influence on perceived usefulness. The link between perceived ease of use and perceived usefulness with technology acceptance has been supported in various contexts, such as mobile payment usage (Kim et al., 2009), online shopping (Cho, 2015), and internet banking (McKechnie et al., 2006). Similarly, Komulainen & Makkonen (2018) showed that ease of use, which refers to taking care of bank-related tasks quickly and effortlessly, was one of the critical factors associated with a positive omnichannel banking experience. Thus, we posit that:

$H_{5.}$: Perceived ease of use of omnichannel banking will positively affect its perceived usefulness.

$H_{6a.}$: Perceived usefulness will positively affect the consumers' intention to use omnichannel banking.

$H_{6b.}$: Perceived ease of use will positively affect the consumers' intention to use omnichannel banking.

The Moderating Effect of Personal Innovativeness

Agarwal and Prasad (1998, p. 206) define personal innovativeness as "the willingness of an individual to try out any new information technology" and theorize it as a moderator variable in the TAM. They propose that personal innovativeness in the domain of IT (PIIT) serves as a key moderator for the antecedents and the consequences of perceptions. Indeed, individuals with a high level of personal innovativeness develop more positive perceptions of new technology. Agrawal and Prasad (1998) have further considered that PIIT serves to moderate the relationship between the type of communication channel utilized and perception of innovation. It implies that for the same mix of channels, individuals with higher PIIT will develop more positive perceptions about the innovation. Indeed, according to IDT (Rogers, 2003), personal innovativeness in the domain of IT (PIIT) moderates the development of perceptions; a person with a higher level of PIIT is expected to develop more positive perceptions and beliefs about new technology (Lewis et al., 2003).

According to innovation diffusion theory (Rogers, 2003), earlier adopters are more likely to perceive the potential benefits, or usefulness, associated with innovation than later adopters. Unlike late adopters, they can relate innovative ideas to their needs, while recognizing the compatibility of innovation (Yi et al., 2006). Besides, given their knowledge, experience, technical competence, and high aspiration (Rogers, 2003), early adopters consider the

associated complexity of innovation less complicated and easier to understand than later adopters (Yi et al., 2006). Thatcher and Perrewe (2002) found a negative relationship between personal innovativeness and anxiety. The more the consumer feels anxiety, the less likely he/she will adopt new technology. People who score low on personal innovativeness do not like risk and, therefore, have more anxiety (Harris, 1999).

It is indicated that the consumers' perceptions and beliefs regarding omnichannel banking will differ depending on their perceived innovativeness level (high versus low innovativeness). High innovative consumers will be less anxious about omnichannel banking usage and are more likely to perceive its usefulness, ease of use, and compatibility with their banking needs and lifestyles. Therefore, we posit these hypotheses.

H_{7a}: High personal innovativeness individuals will perceive omnichannel banking as more useful than low personal innovativeness individuals.

H_{7b}: High personal innovativeness individuals will perceive omnichannel banking more easy to use than low personal innovativeness individuals.

H_{7c}: High personal innovativeness individuals will perceive omnichannel banking as more compatible with their needs and lifestyles than low personal innovativeness individuals.

H_{7e}: High personal innovativeness individuals will be less anxious about using omnichannel banking than low personal innovativeness individuals.

Agarwal and Prasad (1998) theorized the moderating effect of PIIT on the consequences of perceptions and have considered that PIIT moderates the relationship between perceptions of IT, including usefulness, ease of use, and intention to use. They infer that innovative people have a relatively high willingness to adopt new technology because they are more able to perceive it as being easier to use, or they can learn how to use it more quickly. Moreover, they tend to expect high performance from the information system and are more likely to form favorable perceptions about its usability. Cheng (2014) showed that the relationship between perceived ease of use and intention to use is weaker among consumers with a high level of personal innovativeness than among consumers with a low level of personal innovativeness. In contrast, the effect of usefulness on intention to use is stronger among consumers with a high level of personal innovativeness than among consumers with a low level of personal innovativeness. However, Kim et al. (2009) revealed that early adopters value ease of use, whereas late adopters showed a greater emphasis on usefulness. Accordingly, we suggest that

H_{8a}: high personal innovativeness individuals will have more intention to use omnichannel banking than low personal innovativeness individuals.

H_{8b}: Personal innovativeness will negatively moderate the effect of perceived ease of use on perceived usefulness.

H_{8c}: Personal innovativeness will negatively moderate the effect of perceived ease of use on the intention to use omnichannel banking.

H_{8d}: Personal innovativeness will positively moderate the effect of perceived usefulness on the intention to use omnichannel banking.

RESEARCH METHODS

This study looks at the drivers behind omnichannel banking behavior in the French retail-banking context and focused on brick-and-mortar banks with an online presence. This study used convenience sample of working adults who were enrolled in a Master of Business Administration program at a large French business school located in Paris. MBA students were selected because they are multichannel users. Indeed, research has shown that with regards to demographics, young consumers with higher income are usually more likely

to use multichannel retailing rather than mono-channels (Strebel et al., 2004).

Participants in the study were exclusively potential omnichannel banking customers. To ensure that the subjects are not omnichannel banking users, we had explained at the beginning of the questionnaire the meaning of omnichannel banking and then asked them to indicate if they previously had an omnichannel banking experience. Only subjects who responded negatively were selected to complete the survey. Before completing the questionnaire, we also asked participants to indicate their general knowledge about omnichannel banking usage and its benefits and then to indicate which bank they were using and whether those banks practiced omnichannel banking. We used an exhaustive list of banks (banks that use omnichannel banking published by the French Banking Federation in 2018) (Eptica, 2017; Féderation Bancaire Francaise, 2018). If the bank patronized by the respondent did not exist on the list of banks, we did not administer the questionnaire. When the participants fulfilled all these conditions, respondents were requested to share their initial omnichannel banking experience. To achieve this, we adopted the scenario method (Dabholkar & Bagozzi, 2002). We asked them the following question: "Suppose that you want a loan from a retail bank. How would you request it by using different banking channels simultaneously?"

In this study, the authors used customer journey maps to visualize the sequence of touchpoints where the customer interacts with services, as suggested by Peltola et al. (2015). Customer journey mapping is a widely popular tool among academics and practitioners because of its usefulness in understanding and representing the customer experience (Rosenbaum et al., 2017). In the current study, respondents were asked to report in detail their cross-channel journey. They were asked to indicate their chosen device or channel in each stage of the process (information, counseling, contracting) as shown in Table II. Four hundred questionnaires were sent, and 55 incomplete questionnaires were also excluded. Finally, 239 valid responses were collected between September 2019 and December 2019.

The questionnaire consisted of three sections. The first section aimed to evaluate consumers' omnichannel banking awareness about omnichannel banking and to have more information about their initial omnichannel banking experience through the journey maps method described above. The following section included questions measuring dependent and independent constructs in the research model (Figure 1). Demographic variables involving gender, age, and monthly income were also collected (Table II).

Respondents were also asked to indicate their preferred method for performing banking transactions. Responses were measured using five-point Likert scales with answer choices ranging from one (Strongly Disagree) to five (Strongly Agree). Existing scales were used based on new technology adoption literature, IDT literature, as well as multichannel and omnichannel retailing literature to ensure content validity. The questionnaire was translated and back-translated to French. The questions were modified according to pilot test results conducted on a representative sample of 20 individuals (12 faculty, three staff members, and

Table 2. Sample Demographics and Preferences

Respondents Characteristics	Frequency	Valid Percent %
Gender		
Male	142	59.4
Female	97	40.5
Age		

25-34 years	107	44.7
35-49 years	116	48.5
50-65 years	16	6.66
Preferred methods of performing banking transactions		
Branch	53	22.1
Telephone	10	4.18
Online banking	106	44.35
Mobile banking	70	29.28
Monthly Income		
<1,000	10	4.18
1,000–3,000	120	50.20
>3,000	109	45.60
Omnichannel banking behaviour		
Used 2 channels	102	42.6
Used 3 channels	110	46.02
More than 3 channels	27	11.29

five students) and five experts in the banking sector.

STUDY RESULTS

Respondents' Profile and Characteristics

The sample consisted of 142 men (59.4%) and 97 women (40.5%). The largest age group consisted of those aged 35–49 years (48.5%). Online banking (44.35%) and mobile banking (29.28%) were the most preferred methods for performing banking transactions. Data (Table II) showed that most respondents (46.02%) used three channels in a single banking transaction, and 11.29% of the respondents used more than three channels in a single transaction.

Channel choices differ across the different stages of the process. During the information stage, smartphones (45%), tablets (30%), and desktops (24%) were the primary devices used by participants. In contrast, during the counseling stage, they were actively seeking help and advice from a person, for instance, in the call-center (33%) or the branch (44.2%). For the contracting stage, the branch remains the most chosen channel (79%). This confirmed the findings of Hummel et al. (2017), whose study revealed the existence of relationships between the stage of the buying process, and the channel chosen. Online and mobile channels were associated with the information, while the branch was related to the counseling and the contracting stages.

Measurement Model

We applied structural equation modeling (SEM) (Anderson & Gerbing, 1988) to analyze the hypothesized relationships in our research model and used Amos 18 for the analysis.

Reliability and validity were assessed using three different dimensions: indicators reliability, convergent validity, and discriminant validity (Hair et al., 2009). Indicators' reliability should have outer loadings above the threshold value of 0.7. Cronbach's alpha scores had values between 0.801 and 0.880, indicating that each construct exhibited strong internal reliability. Convergent validity builds on the average variance extracted (AVE) value. Following Hair et al. (2009), we considered 0.5 as the acceptable minimum.

The items factor loading and the AVE of each construct, which range from 0.56 to 0.88, exceeded the acceptable cut-off of 0.5 (Table III); therefore, convergent validity for all constructs was established.

Table 3. Construct Reliability and Convergent Validity

Constructs	Items	Loading	Cronbach's alpha (α)	Convergent Validity	Composite Reliability	AVE
Compatibility	COMP1	0.871	0.801	0.59	0.810	0.721
	COMP2	0.873				
	COMP3	0.803				
Ease of use	EA1	0.842	0.875	0.714	0.924	0.801
	EA2	0.914				
	EA3	0.928				
Perceived usefulness	PU1	0.742	0.843	0.633	0.886	0.621
	PU2	0.822				
	PU3	0.825				
	PU4	0.810				
	PU5	0.737				
Multiple Integration quality	MI1	0.820	0.838	0.568	0.892	0.674
	MI2	0.855				
	MI3	0.801				
	MI4	0.808				
Awareness	HA1	0.782	0.718	0.502	0.742	0.64
	HA2	0.759				
	HA3	0.868				
Anxiety	AX1	0.843	0.814	0.541	0.881	0.65
	AX2	0.854				
	AX3	0.785				
	AX4	0.740				
Personal innovativeness	PI 1	0.908	0.880	0.668	0.922	0.744
	PI2	0.884				
	PI3	0.808				
	PI4	0.855				
Intention to use	IU1	0.942	0.865	0.887	0.940	0.887

Table 4. Discriminant Validity

	MI	COM	AW	AX	PU	EOU	IU
MI	**0.674**						
COM	0.560	**0.721**					
AW	0.623	0.493	**0.64**				
AX	0.615	0.453	0.433	**0.65**			
PU	0.670	0.618	0.625	0.635	**0.62**		
EOU	0.611	0.386	0.387	0.456	0.611	**0.80**	
IU	0.402	0.261	0.276	0.310	0.454	0.313	**0.88**

Average variance extracted on the diagonal and squared correlation between constructs off diagonal

Note 1: COMP: compatibility**, EOU:** Ease of use, **PU:** Perceived usefulness, **AW**: Awareness, **AX**: Anxiety, **MI**: Multiple Integration Quality, **UI:** Usage intention

For discriminant validity, the correlations between items in any two constructs should be lower than the square root of the average variance shared by items within the construct (Fornell & Larcker, 1981).

Analysis of the Structural Model

We assessed the overall goodness-of-fit using the chi-square test. The chi-square test assesses the adequacy of a hypothesized model in terms of its ability to reflect the variance and covariance of the data. Due to its tendency to be sensitive to sample size, other fit indices (e.g., GFI, AGFI, CFI, NFI, and RFI) were considered in conjunction with the chi-square. The standardized path coefficients (β) and corresponding t-values were examined to test the significance and strength of the relationship between the dependent and independent variables. The results of the structural equation modeling obtained for the proposed conceptual model revealed an X^2/df of 1.315 ($p < 0.001$), GFI of 0.909, AGFI of 0.875, CFI of 0.976, NFI of,0.910, TLI of 0.970, and RMSEA of 0.036 (p=) (0.981). We, thus, conclude that the research model was valid and fit the data.

Hypotheses Testing

The first purpose of this study was to identify how external factors like anxiety, awareness, compatibility, and multichannel integration quality influence the perceived usefulness and ease of use of omnichannel banking usage. The results (Table V) provided support for the research model presented in Figure 1.

Table 5. Assessment of the Structural Model

Hypothesis	Hypothesis path	Parameter Estimate (β)	t-Value	p-Value	Results
H1a	AW —› PU	0.198	2.297	0.022**	Supported
H1b	AW —› EOU	0.276	2.321	0.02**	Supported
H2b	AX —› EOU	- 0.316	-4.077	***	Supported
H2a	AX —› PU	-0.251	-1.97	0.048**	Supported
H3a	MI —› PU	0.453	4.476	***	Supported
H3b	MI —› EOU	0.343	2.012	0.044**	Supported
H4a	COMP —› PU	0.124	1.752	0.08	Not Supported
H4b	COMP —› EOU	-0.112	-1.244	0.214	Not Supported
H5	EOU —› PU	0.902	3.106	0.002***	Supported
H6a	PU —› IU	0.252	2.841	0.004**	Supported
H6b	EOU —› IU	0.265	2.930	0.003***	Supported

Note 1: ***Significance at $p < 0.001$, ** Significance at $p<0.05$.

According to our results, Multichannel integration quality seems to be the primary variable influencing perceived usefulness (β= 0.343; t=2.012) and ease of use (β=0.453; t=4.476). Thus, H_{3a} and H_{3b} were supported. Similarly, consumers' Awareness about omnichannel banking usage influences positively perceived usefulness (β= 0.198; t=2.297) and ease of use (β= 0.276; t=2.321). H_{1a} and H_{1b} were confirmed. To our surprise, perceived compatibility does not significantly impact perceived usefulness (β=-0.124; t=1.752) and perceived ease of use (β=-0.112; t=-1.244). Thus, H_{4a} and H_{4b} were not supported. As expected, anxiety towards using omnichannel banking impacts negatively perceived ease of use (β= -0.316; t=-4.077) and perceived usefulness (β= -0.251; t=-1.97). Therefore, H_{2a} and H_{2b} were supported. H5 was accepted since ease of use influences strongly perceived usefulness (β=

0.902; t=3.106). Similarly, H_{6a} and H_{6b} were confirmed. Results indicated that perceived ease of use (β=0.265; t=2.930) and perceived usefulness (β=0.252; t=2.841) significantly affected intention use of omnichannel banking. The perceived ease of use was the most significant predictor for intended usage.

To assess the consumers' awareness about omnichannel banking, we conducted a descriptive analysis. The results revealed a lack of awareness about omnichannel banking usage and its benefits among the vast majority of respondents. Indeed, more than 70% of respondents were unaware of omnichannel banking.

Testing the Potential Moderating Effect of Personal Innovativeness

Given the theoretical expectations that the level of personal innovativeness (high versus low personal innovativeness group) may impact consumers' perceptions, beliefs about omnichannel banking, and intention to use omnichannel banking, a series of univariate variance analyses were performed to examine the individual differences between participants. For the formation of the groups, this study divided the sample by personal innovativeness into two different groups (high personal innovativeness versus low personal innovativeness) according to the sample median. Thus, the high personal innovativeness group consisted of 139 respondents, whereas 100 respondents composed the low personal innovativeness group. The results in Table VI show a significant mean difference in terms of intention to use omnichannel banking (F=12.22, p=0.001) between the high personal innovativeness group (M=10.89, $\sigma = 2.47$) and low personal innovativeness group (M=3.85, $\sigma = 1.48$). Obviously, customers with a high level of personal innovativeness were found to have more intention to use omnichannel banking. As a result, H_{8a} was supported. Regarding group differences on perceived usefulness, ease of use, compatibility and anxiety, significant differences between the two groups were found for usefulness (t=-3.493, p= 0.003), ease of use (t=-5.427, p= 0.000), compatibility (t=-3.026, p=0.003) and anxiety (t=-3.017, p= 0.00). As shown in Table VI, the findings demonstrated that perceived usefulness, ease of use, and compatibility were rated higher for the high personal innovativeness group. However, the level of anxiety seems to be higher for the low personal innovativeness group. Thus, H_{7a}, H_{7b}, H_{7c}, and H_{7e} were supported.

Multiple group analysis can examine the existence of the moderating effects on the structural model by analyzing the significance of the differences between parameters considered by the structural model between the proposed groups. The results showed that the invariant path model did not provide as good fit when compared to the fit of the unconstrained model, especially when considering the drop in

Table 6. Variance Analyses: Group Differences

Constructs	High personal innovativeness group (n=139)		Low personal innovativeness group (n=100)			
	Mean	***σ***	**Mean**	***σ***	**Fisher (sig)**	**T (sig-2-tailored)**
Usefulness	18.19	2.79	16.76	3.53	8.883 (0.003)	3.496 (0.001)
Compatibility	3.81	0.45	3.43	0.62	2.199 (0.139)	3.026 (0.003)

Ease of use	14.09	3.39	15.31	2.85	22.277 (0.000)	5.427 (0.000)
Anxiety	20.6	4.089	22.35	3.03	11.943 (0.001)	3.017 (0.000)
Intention to use	10.89	2.47	3.85	1.48	641.73 (0.000)	25.332 (0.000)

**significant at 5%, *significant at 10%

Chi-square from constrained to unconstrained path models.

Overall, the results from the log-likelihood chi-squared test of differences (nested models) for the multi-group comparison suggests that making the structural parameters equal across the two groups resulted in a statistically significant worsening of overall model fit. Indeed, the fully unconstrained model fit significantly better, as evidenced by the statistically significant change in chi-square (' Δ df = 7, $\Delta\chi 2$ = 19.141 $p < .05$). Thus, the groups should not be constrained to be equal. Therefore, we reject the null hypothesis that the paths (as a whole) are the same for these groups and confirm the moderating effect of consumer's personal innovativeness on the relationship between belief constructs (perceived usefulness and ease of use) and intended use of omnichannel banking.

Our findings shown in Table VII supported the difference between the two groups regarding the effect of ease of use on perceived usefulness and revealed that ease of use on perceived usefulness was significant for consumers with low levels of innovativeness (β=0.269; t=1.974) and non-significant for the ones with high innovativeness. H_{8b} was supported. Indeed, the impact of ease of use on the intention to use omnichannel banking is only supported for consumers with low innovativeness (β=0.487; t=3.166). Thus, H_{8c} was supported. Finally, the relationship between perceived usefulness and intention to use was significant for the two groups. Nevertheless, in comparison to those with low innovativeness (β=0.487; t=3.166) group, the impact of perceived usefulness on the intention to use is more intensive for the high innovativeness group (β=0.779; t=5.629). H_{8d} was confirmed.

DISCUSSION

Our findings showed the important role of ease of use on omnichannel banking perceived usefulness and consumers' intention to use it. This confirms the findings of Kim et al. (2009) in the mobile payment context and Davis's (1989) study, showing that the direct effect of perceived ease of use on intention is more substantial in the early stages of adoption. It implies that when consumers perceive that omnichannel banking is easy to use, they will be more convinced about its benefits and usefulness, enhancing their willingness to use it. However, our study shows that the level of personal innovativeness also impacts consumers' beliefs about the ease of use of omnichannel banking and the relationship between ease of use and the intention to use omnichannel banking.

Table 7. Regression Results for the Cross-Group Analysis

N°	Path tested	High consumer's innovativeness (N=139)	Low consumer's innovativeness (N=100)	Results

		Standardized estimate (t value)	Standardized Estimate (t value)	
H8b	EOU —› PU	β=0.018(t=1.629) ns	β=0.269 (t=1.974)	Supported
H8c	EOU —› UI	β=-0.007 (t=0.601) ns	β=-0.487(t=3.166)	Supported
H8d	PU —› UI	β=0.779 (t=5.629)	β=0.606 (t=4.337)	Supported

Note 1: β=Standardized estimate, (t-stat), Significance at *t*> 1.96

Findings demonstrated that consumers with low personal innovativeness regarding new IT will pay more attention to ease of use in the process of using omnichannel banking in comparison to high personal innovativeness consumers. Indeed, the relationship between ease of use and usefulness and between ease of use and intention to use omnichannel banking were significant only for the low personal innovativeness group.

High personal innovativeness individuals are more likely to use omnichannel banking, are less anxious about using omnichannel banking, and perceive omnichannel banking as more useful, easy to use, and more compatible with their banking needs and lifestyles. They pay less attention to ease of use in the process of using omnichannel banking in comparison to low personal innovativeness consumers, since the relationship between ease of use and usefulness and between ease of use and intention to use omnichannel banking were not significant for this group. However, the high personal innovativeness group is more sensitive to perceived usefulness since this variable more strongly influences their intention to use omnichannel banking. This result is consistent with Cheng's study (2014) that showed that the relationship between perceived ease of use and intention to use mobile banking is weaker among consumers with a high level of personal innovativeness than among consumers with low levels of personal innovativeness. In general, innovative individuals tend to demonstrate higher levels of self-confidence about performing new tasks (Kegerreis et al. 1970, Agarwal et al. 2000).

Our study found that consumer anxiety hinders omnichannel banking adoption since it negatively impacts perceived usefulness and ease of use. This is in accordance with literature which stressed the negative impact of anxiety on consumers' cognitive responses, particularly process expectancies (e.g., efficacy, ease of use) (Venkatesh, 2000). Indeed, when banking consumers are anxious and fearful about omnichannel banking use, it is more difficult for them to realize or understand its usability and its advantages. While the omnichannel experience is beneficial for banking consumers since they can handle their banking transactions quickly and conveniently, it may also be perceived as risky. Besides security and privacy issues, consumers fear making fatal errors or experiencing a loss of information when using omnichannel banking. Nevertheless, our results showed that the low personal innovativeness group was more anxious about omnichannel banking usage.

Results showed that a high level of information about omnichannel banking usage and its benefits influences consumers' perceived usefulness and ease of use even though there is a lack of awareness about omnichannel banking usage. High multichannel integration quality strongly influences consumers' perception of perceived usefulness and ease of use of omnichannel banking. This is in accordance with previous studies which demonstrated that providing a seamless and consistent experience through high multichannel integration quality contributes to enhancing omnichannel shopping perceived value (Kabadayi et al., 2017; Huré et al., 2017). This leads to consumers' satisfaction and loyalty (Hammouda; 2019; Mainardes et al., 2020).

To our great surprise, perceived compatibility does not influence the perceived usefulness and ease of use of omnichannel banking. This can be explained by the level of education of respondents who were multi-channel users and felt comfortable using banking technologies. This target may be accustomed to using omnichannel shopping in other sectors.

STUDY IMPLICATIONS

Results of the present study have a theoretical contribution to the field of omnichannel banking and provide managerial recommendations for the banking industry.

Theoretical Contributions

From the theoretical standpoint, this study makes three contributions to research.

1) The omnichannel approach is an emerging concept in the banking industry and, to our knowledge, few studies have investigated the omnichannel strategy in the banking sector (Abhishek et al., 2017; Liu et al., 2017; Hamouda, 2019), Mainardes et al., 2019). This study focused on the initial stage of omnichannel adoption and proposed a theoretical model for omnichannel banking acceptance.
2) The study contributes to the literature by extending TAM to omnichannel banking. It explores how variables such as awareness about omnichannel banking, anxiety, compatibility, and multichannel integration quality affect perceived usefulness and perceived use of omnichannel banking in the French context and show that perceived usefulness and ease of use contribute to the intention to use omnichannel banking.
3) Finally, this paper integrated personal innovativeness as a moderating factor and revealed that consumers' beliefs (ease of use, usefulness, and compatibility), anxiety about omnichannel banking, and intention to use it change under different levels of personal innovativeness. Indeed, personal innovativeness moderates the relationship between ease of use, usefulness, and intention to use omnichannel banking. Several previous studies did not consider the moderating effect of a personal variable, such as personal innovativeness. In fact, the lack of adding that variable as a moderator has been considered as one of the limitations in one study (Davis et al., 1989).

Managerial Implications

The study findings have implications for the banking industry and provide a valuable set of guidelines for retail banks to promote and implement their omnichannel-banking strategy effectively. By identifying the drivers of omnichannel-banking adoption and the moderating effect of consumers' personal innovativeness, this study demonstrates to banks managers the variables to focus on to spread omnichannel banking usage and highlights that consumers' personal innovativeness can be used as a criterion for segmentation since banks need to apply different marketing strategies depending on the consumer's innovation predisposition.

Our findings highlighted that consumers with low innovation are less likely to use omnichannel and pay more attention to ease of use. This implies that it is essential for bankers to emphasize the ease of use of omnichannel banking for low innovativeness consumers by providing financial solutions and functionalities that facilitate their daily life. Banks should make services easier for them and explain to them the advantages of using different services within the same bank.

Banks' challenge is optimizing the channel-mix to make it more customer-centric and user-friendly across all devices. Banks should implement practical actions to overcome anxiety, particularly for low innovative consumers.

Anxiety can be reduced by training customers or increasing their experience with omnichannel banking. At the service encounter stage, a banks' frontline service employees need to promote omnichannel banking usage to consumers by educating consumers about how to use, in an interactive way, new digital technologies for their daily banking operations. Website tutorials that address users' frequently asked questions about omnichannel banking usage should be developed. Campaign information about omnichannel benefits, functioning, and risks, can reduce customers' fear of omnichannel banking usage.

Banks should focus on high innovativeness consumers since they show a strong willingness to use omnichannel banking, are less anxious about omnichannel banking, and perceive omnichannel banking as useful, easy to use, and compatible with their banking needs and lifestyles. To target this group, banks should detect these consumers and attract them by communicating through advertisement, mass-media, and direct marketing the multiple advantages of switching to omnichannel banking. Indeed, they should enhance their satisfaction and commitment toward omnichannel banking usage by regularly developing innovative tools across channels and propose a tailored omnichannel banking experience.

Banks need to understand customer expectations and usage habits clearly and streamline their systems using this information. Advances in data collection can help banks know more about their customers, the products and services they have purchased, and their prior interaction history, regardless of the channel used. These insights allow banks not only to optimize the effectiveness of their channels but also to have a more personalized relationship with consumers. Moreover, highly innovative consumers are usually early adopters who seek out new technology and are the first to try it among their family and friends; banks should include these consumers as the first testers of the omnichannel banking process.

Highly innovative consumers have the most significant degree of opinion leadership in most social systems since they are respected by their peers and serve as role models for many other social networks (Rogers, 2003). Therefore, banks should transform these innovators into ambassadors and encourage them to share their experiences and positive testimonials with their peers. Moreover, banks should be aware that consumers voicing their opinions about the system through social networks is one of the best solutions to enhance awareness about omnichannel banking and reduce consumer anxiety.

To ensure the spread of omnichannel banking among their clients, banks should focus on two strategic variables. First, enhance awareness about omnichannel banking for the two groups. As early adopters who are motivated to learn more about omnichannel banking, high innovativeness individuals may request more information from their bank about it. For this group, banks should focus on the advantages and benefits of omnichannel banking usage. However, for low innovativeness consumers, awareness about omnichannel banking usage is one of the factors that can decrease their anxiety about its usage. Therefore, banks ought to provide, through their communication tools, more information about omnichannel banking usage. They should continually inform their customers through media, websites, and interactions with employees about how their organizational capabilities (integrated technology and data) support customers in a seamless way across all their business transactions and ensure that customers can complete these transactions efficiently across different channels without any problems or risks.

Second, provide a high multichannel integration quality. The integrated interaction quality allows customers to enjoy high service quality, with consistent information and tailored services (Mainardes et al., 2019), and any failure to meet these expectations is negatively perceived by consumers. This suggests that

banks need to ensure that all channels provide a unified and seamless consumer banking experience. They should embrace a holistic view of all their channels by making customers feel that they are dealing with a single entity, a unique platform, and a recognizable brand across every touchpoint. Banks should ensure that every individual banking channel has shared access to full customer histories and that the system can extract and use the information when needed. More specifically, banks should not overlook the role of the traditional branch as an essential component of the omnichannel customer experience, and they need to optimize branch technology and human capital resources to best fit the integrated experience customers expect.

LIMITATIONS OF THE STUDY

Our study does have some limitations, but it serves as a starting point for future research. The first limitation of this empirical study is using a convenience sample rather than a random one. A student sample somewhat restricts the generalizability of results to a broader population. Differences may occur, such as in reactions to perceived ease of use and usefulness of omnichannel banking for more aged and less-educated consumers. Future research is recommended with samples from a broader population.

This study focused only on the potential adopters of omnichannel banking users. It excludes the current users, which limits our findings. Further research should investigate consumers' post-beliefs, perceptions, and attitudes towards omnichannel banking. A comparison between adopters and non-adopters will be interesting.

Multichannel integration assessment has certain limitations since it has been considered as a unidimensional concept. Previous studies have identified several components of multichannel integration quality (Wu & Chang, 2016). Further studies should consider the various dimensions to assess multichannel integration and empirically test their effect on perceived usefulness and ease of use.

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