Enhancing the value co-creation process: artificial intelligence and mobile banking service platforms

Elizabeth H. Manser Payne

Department of Marketing, University of South Dakota, Vermillion, South Dakota, USA and Department of Marketing, College of Business and Economics, University of Wisconsin Whitewater, Whitewater, Wisconsin, USA

James Peltier

Department of Marketing, University of Wisconsin-Whitewater, Whitewater, Wisconsin, USA, and

Victor A. Barger

Department of Marketing, College of Business and Economics, University of Wisconsin Whitewater, Whitewater, Wisconsin, USA

Abstract

Purpose – The purpose of this study is to investigate the relationships that influence the value co-creation process and lead to consumer comfort with artificial intelligence (AI) and mobile banking (AIMB) service platforms.

Design/methodology/approach – A conceptual model was developed to investigate the value-in-use perceptions of AI-based mobile banking applications via five antecedents: baseline perceptions of current bank service delivery; service delivery configuration benefits; general data security; safety perceptions of specific mobile banking services; and perceptions of AI service delivery. Data were collected from 218 respondents and analyzed using structural equation modeling.

Findings – This study highlights the role and importance of the sequential relationships that impact the assessment of AIMB. The findings suggest that service delivery and the customer's role in value co-creation change as AI is introduced into a digital self-service technology channel. Furthermore, AIMB offers transaction-oriented (utilitarian) value propositions more so than relationship-oriented (hedonic) value propositions.

Research limitations/implications – The sample consisted on digital natives. Additional age cohorts are needed.

Practical implications – As financial institutions redirect their business models toward digital self-service technology channels, the need for customers to feel comfortable while interacting with an AI agent will be critical for enhancing the customer experience and firm performance.

Originality/value – The authors extend the service-dominant logic (SDL) literature by showing that value co-creation is a function of both firms' technologies and consumers' value-in-use, a finding that appears to be unique in the literature. The authors advance the digital transformation literature by evaluating AIMB as an interactive process that requires an understanding of key technology constructs, including perceptions of baseline service relationships, desired service configurations, security and safety issues and whether AI is useful for value co-creation. To the best of the authors' knowledge, this is the first SDL framework that investigates interactive and structural relationships to explain value-in-use perceptions of AIMB.

Keywords Mobile marketing, Web 2.0, Customer value, Services marketing, Service quality, Information technology, Structural equation modeling, Eservice quality, Human–computer interaction, Computer-mediated environments, Digitalizations

Paper type Research paper

Introduction

Digital transformation is revolutionizing service ecosystems (Kucharska, 2019; Dahl *et al.*, 2020; Dahl *et al.*, 2018b), changing how services are created, delivered and evaluated (Hilken *et al.*, 2018; Peltier *et al.*, 2020; Swan *et al.*, 2019). Digital servitization, which leverages digital technology to open up opportunities for value creation and revenue generation (Sihi, 2018; Sklyar *et al.*, 2019; Adapa *et al.*, 2020), empowers consumers to control how, when and where services are delivered (Dahl *et al.*, 2018a). Firms seeking to capitalize on the digitalization of service relationships must find ways to co-create value with customers through market efficiencies and data integration (Grönroos and Ravald, 2011; Elsharnouby and Mahrous, 2015; Huang and Rust, 2018). Despite the potential benefits of co-created value through digital servitization, research exploring how service ecosystems evolve in response to new technologies and relationship platforms is limited (Dahl *et al.*, 2019; Patrício *et al.*, 2018). Accordingly, a primary aim of this paper is to examine how digital servitization impacts value co-creation and, value configurations, and consumer engagement, which are critical components of profitable service relationships (Peltier *et al.*, 2020).

Digital servitization is particularly pronounced in the banking industry (Mbama *et al.*, 2018; Sengupta and Dice, 2019). Mobile banking is transforming the customer experience from primarily brick-and-mortar, face-to-face transactions to technology-mediated, consumer-centric services (Laukkanen, 2016; Baabdullah *et al.*, 2019). This is altering the roles that digital technologies, financial institutions and customers play in the value co-creation and service delivery process (Lee, 2017; Choudrie *et al.*, 2018; Dwivedi *et al.*, 2020). Furthermore, mobile banking technologies, especially those related to capturing, storing and analyzing customer data, are motivating banks to implement artificial intelligence (AI) in their digital and mobile platforms (Khrais and Shidwan, 2020). Examples of AI mobile banking (AIMB) services range from chatbots, which interact with customers in auditory or textual format (Korzeniowski, 2017), to more complex, problem-solving services, such as personalized investment advice and fraud detection (Mistry, 2018).

Viewed through the conceptual lens of service-dominant logic (SDL), our framework investigates the value-in-use perceptions of AI-based mobile banking applications via five antecedents:

(1) baseline perceptions of current bank service delivery;

(2) service delivery configuration benefits;

(3) general data security;

(4) safety perceptions of mobile banking services; and

(5) perceptions of AI service delivery.

SDL recognizes value co-creation as a cornerstone of firm–customer relationships, requiring a collaborative and continuous process of service provision (Lusch *et al.*, 2008). In the context of AIMB, value co-creation occurs when banks, digital technologies and consumers jointly and concurrently realize goals, particularly when there is alignment between consumers' AI motivations and their service expectations (Kristensson, 2019). Banks create value through AI analytics, and consumers create value through application-in-use of AI services (Ghosh and Nilanjan, 2017; Manser Payne *et al.*, 2018).

Our findings contribute to the literature as follows. We extend the SDL literature by empirically testing a conceptual framework for how digital transformation impacts the ways in which firms and consumers co-create value in service ecosystems. We show that value co-creation is a function of both firms' technologies and consumers' value-in-use, a finding that appears to be unique in the literature. Our study provides evidence that prior

service perceptions impact perceptions of the configuration of benefits and level of comfort with new service innovations. We advance the digital transformation literature by evaluating AIMB as an interactive process that requires an understanding of key technology constructs, including perceptions of baseline service relationships, desired service configurations, security and safety issues and whether AI is useful for value co-creation. To the best of the authors' knowledge, this is the first SDL framework that investigates interactive and structural relationships to explain value-in-use perceptions of AIMB.

Literature review

Service delivery configuration benefits have been strongly influenced by radical innovations (Mbama *et al.*, 2018; Balapour *et al.*, 2020), reshaping value expectations and relationships (Souiden *et al.*, 2019). Mobile technology has been a particularly radical innovation, because it simultaneously changed the "how, what, where, and when" of banking (Chaouali *et al.*, 2017). Building on the technology acceptance model (TAM) and diffusion of innovation, early research examined mobile banking benefits, such as perceived ease of use (Lin, 2011), perceived complexity and relative advantage (Brown *et al.*, 2003) and perceived usefulness (Sripalawat *et al.*, 2011). More recent studies have examined value perceptions (Laukkanen, 2016), performance efficacy (Albashrawi and Motiwalla, 2020), service quality (Arcand *et al.*, 2017), social norms (Choudrie *et al.*, 2018), hedonic motivation (Baabdullah *et al.*, 2019) and customer satisfaction and loyalty (Izogo and Jayawardhena, 2018; Baabdullah *et al.*, 2019; Albashrawi and Motiwalla, 2020).

AI and algorithm-based interactions are emerging in the mobile banking channel to offer a more personalized banking experience and heightened security. Interactions with AI-enabled platforms, accessed through mobile banking apps, may be viewed on a continuum of activities and tasks (Korzeniowski, 2017). For example, AI offers "lower value" with basic and less sensitive automated transactions such as using virtual to interact with customers to perform banking activities such as deposits, fund transfers and payments (Marous, 2017). Mid-range examples would include AI tools to provide security and fraud protection. At the high end of the continuum, "higher value" advanced AI services analyze spending pattern analysis and provide personalized recommendations for credit card debt consolidation. Of concern, moving from lower to higher value service configurations may raise issues about information sensitivity and potential harm from unwarranted access or misuse (Markos *et al.*, 2017).

Service-dominant logic

At its core, SDL views the firm and the customer as co-creators of value in a collaborative and continuous process of service provision (Lusch *et al.*, 2008). Specifically, value is created through a value-in-use process where the customer consumes the product or service in an exchange of intangible operant resources – such as skills, information and knowledge – with the firm (Vargo and Lusch, 2004; Grönroos, 2006; Grönroos, 2008). Expanding utilization of mobile banking apps is putting consumers front and center as an active participant in a value co-creation role via SST-based service exchange (Manser Payne *et al.*, 2018). Consistent with SDL, we propose the consumer is not only a critical participating actor, but the central beneficiary of the AI value co-creation process (Vargo and Lusch, 2004). Successful value co-creation in AI service ecosystems is thus reliant on a network of various resource-integration actors, underlying mechanisms and systems, with consumers as the focal point (Manser Payne *et al.*, 2021).

Specific to digital transformations, co-created value-in-use occurs when consumers access and interact with information technologies designed to bring firms and customers together (Sandström *et al.*, 2008; Souiden *et al.*, 2019). How financial institutions and their

customers exchange resources is highly dependent on the context in which the resources are embedded (Turetken *et al.*, 2019). As such, resources vary in their importance and usage. In a mobile banking context, the allocation of resources spent in the value co-creation process shifts strongly to the customer, who self-engages in value-creating activities without interacting with bank employees. On the surface, value co-creation activities and resource usage may not appear to be equally distributed between the two actors (Zainuddin *et al.*, 2016; Finsterwalder, 2018). However, financial institutions play a critical role in value co-creation; namely, the financial institution offers value propositions by analyzing customer behaviors and providing resources to customers in the form of applications and transactions (Vargo and Lusch, 2004; Sandström *et al.*, 2008; Cambra-Fierro *et al.*, 2017).

Creating value with artificial intelligence in a mobile banking context
Zainuddin *et al.* (2016) suggest that technology can be conceptualized as an operant resource with the ability to integrate, collaborate and access other resources; thus, technology integration is a critical component of value co-creation. Nowhere is technology's ability to co-evolve and reshape service delivery more evident than with AI. In mobile banking, this co-evolvement may transform how value is gained when customers perceive a benefit from the exchange of AI resource interactions. Building upon the value-in-use framework proposed by Sandström *et al.* (2008), we propose that financial institutions offer value propositions in the AIMB channel, which customers then evaluate from their own experiences, operant resources and situational circumstances.

One of the most critical operant resources available to consumers is their level of comfort with new information technologies. For example, Akhter (2015) found that one's level of comfort with digital platforms involves risk perceptions, complexity and enjoyment. The success of AIMB is heavily dependent on consumers' level of comfort with AI in the mobile banking channel (Jacobson *et al.*, 2020). Additionally, the value of AI is intertwined with customer perceptions of and attitudes toward other factors, such as technology readiness (Parasuraman, 2000; Hallikainen *et al.*, 2019), security or trust (Shankar and Kumari, 2016) and need for personal human interaction (Dabholkar and Bagozzi, 2002). Because the customer maintains control over the transaction, AIMB does not limit the co-creation process. In fact, AIMB may enhance the customer experience over time, as the AI learns the individual's needs and creates unique value-in-use (Grönroos and Ravald, 2011; Manser Payne *et al.*, 2018).

Manser Payne *et al.* (2021) identify a number of AI mobile banking initiatives ranging from those utilization in lower value-in-use to higher value-in-use contexts. Examples of lower value-in-use technologies include account set-up, deposits, bill payments, fund transfers and transaction reminders. Higher value-in-use technologies include real-time personalized advice on bank accounts, real-time personalized investment portfolios, real-time personalized retirement planning, real-time personalized debt consolidation, real-time personalized financial goal planning and real-time personalized insurance planning. In this paper, we ask respondents to assess the future value across both contexts.

Research model and hypotheses
The emerging implementations of AI by the financial industry have generated a need to better understand how AI may disrupt the banking ecosystem. To address this gap, we propose a structural model, shown in Figure 1, which takes an SDL approach to understanding the process by which bank service delivery may be affected by AI mobile banking applications.
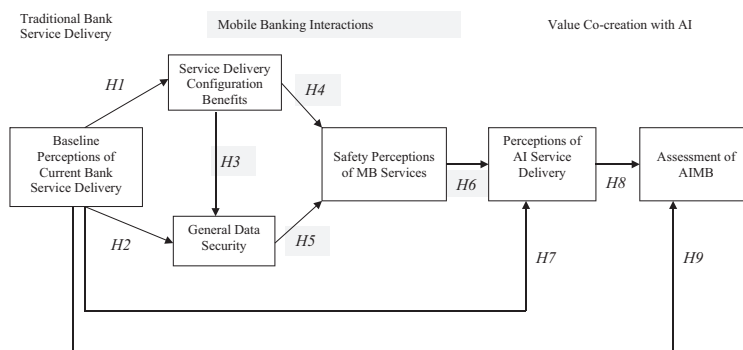
Figure 1.
Research framework

*Effects of baseline perceptions of current bank service delivery on service delivery
configuration benefits and general data security*

Value co-creation formed during in-person service delivery affects judgments of service delivery configuration benefits and trustworthiness of other banking channels, including mobile banking (Verhoef *et al.*, 2009; Izogo and Jayawardhena, 2018; Saunila *et al.*, 2019; Souiden *et al.*, 2019). Banking customers tend to conduct transactions in an omni-channel environment, where the expectation is for a seamless customer experience across channels (Straker *et al.*, 2015; Lemon and Verhoef, 2016; Hilken *et al.*, 2018). The service expectations and satisfaction levels gained from prior interpersonal customer–employee engagement may act as a catalyst for evaluating digital channels (Vander Schee *et al.*, 2020). This may create a halo effect (Piotrowicz and Cuthbertson, 2019) for customer approval and positive associations for service delivery across multiple channels (Herhausen *et al.*, 2015). Service expectations, if met, are thus expected to have direct and indirect effects on value configurations for AI (Manser Payne *et al.*, 2021):

H1. Baseline perceptions of current bank service delivery will positively impact service delivery configuration benefits.

H2. Baseline perceptions of current bank service delivery will positively impact general data security.

*Effects of service delivery configuration benefits on general data security and safety
perceptions of mobile banking services*

Service delivery configuration benefits refer to digital transformations of the mobile banking channel that offer value to the customer (Galindo-Martín *et al.*, 2019). Research has consistently shown that higher perceptions of value lead to greater usage of technology-delivered services (Swan *et al.*, 2019) in general, and mobile banking (Püschel *et al.*, 2010; Lin, 2011). Banking customers also need to feel secure about conducting transactions via mobile banking and sharing personal financial information (Shen *et al.*, 2010; Lee *et al.*, 2019). As customers perceive the advantages of mobile banking – namely, convenience, speed and security – they may be more willing to share personal information (Chepurna and Rialp Criado, 2018; Mbama *et al.*, 2018). We propose that value created when information is exchanged in the mobile banking channel influences general data security perceptions in mobile banking. Therefore:

H3. Service delivery configuration benefits will positively impact general data security.

Safety refers to the perception of threats that may occur while engaged in mobile banking activities (Yousafzai *et al.*, 2010). Veríssimo (2018) suggests that consumers are more likely to engage in mobile banking activities if they believe the financial risk to be low. Safety measures put into place by the financial institution can be thought of as an added value of the mobile banking channel (Laukkanen, 2016; Hossain *et al.*, 2019). Manser Payne *et al.* (2021) contend that data security is an important antecedent and consequence of AI acceptance .

H4. Service delivery configuration benefits will positively impact safety perceptions of mobile banking services.

General data security refers to the perception of overall security measures that are designed to protect financial data and information when using mobile banking (Johnson *et al.*, 2018). Lin *et al.* (2020) suggest that banking customers with positive attitudes toward the security of electronic banking are more likely to use the channel. Similarly, mobile banking users with a higher propensity to trust online environments perceive lower security concerns (Shen *et al.*, 2010; Bidarra *et al.*, 2013).

H5. General data security will positively impact safety perceptions of mobile banking services.

Relationship between safety perceptions of mobile banking services and perceptions of artificial intelligence service delivery

Security is a critical factor for customers when deciding whether or not to use a mobile service delivery platform (Laukkanen, 2007; Shin *et al.*, 2014; Gupta *et al.*, 2017). In a study of security in mobile apps, Balapour *et al.* (2020) determined that when the perceived risk of using an app outweighs the benefits, users perceive the app to be less secure, especially in information-sensitive domains such as mobile banking. Confidence in the technology behind a platform may reduce perceived risk associated with technology-based platforms (Lee *et al.*, 2019). In recent years, AI has become an important tool for countering cybersecurity threats (Srivastava, 2018). For example, AI is capable of quickly identifying unauthorized use of a customer's account and acting to minimize financial risk with no effort on the part of the customer (Srivastava, 2018).

H6. Safety perceptions of mobile banking services will positively impact perceptions of AI service delivery.

Relationship between current bank service delivery and perceptions of artificial intelligence service delivery

We hypothesize that artificial intelligence service delivery reduces the gap between actual and expected quality of service factors, most notably in responsiveness and reliability. Of importance to consumers is the ability of a bank to respond and act in a manner that best serves the customer. Artificial intelligence enables banks to rapidly analyze large volumes of financial data (Castelli *et al.*, 2016) and suggest actions for the individual banking customer that are personalized for optimal financial performance (Huang and Rust, 2018).

Also of importance to consumers is the ability of the bank to provide reliable service, with consistency and accuracy in each banking activity. As with self-service terminals, AI service delivery can reduce service inconsistencies that may occur in customer–employee interactions (Verhoef *et al.*, 2009; Åkesson *et al.*, 2014). Beyond self-service terminals, AI may offer even better customer experience, because the AI can learn what individual customers prefer in their

banking interactions (Sihi, 2018; Jakšič and Marinč, 2019). As a result, consumers may perceive current bank service delivery value to be enhanced by AI applications. Therefore:

H7. Baseline perceptions of current service delivery will positively impact perceptions of AI service delivery.

Interactive effects of current bank service delivery and artificial intelligence service delivery with artificial intelligence and mobile banking
Technological advances, such as AI, may create structural embeddedness that enhances the customer experience (Sandström *et al.*, 2008; Åkesson *et al.*, 2014; Sihi, 2018; Sklyar *et al.*, 2019). Central to the customer experience in AIMB service delivery is the need for consumers to feel comfortable interacting with an AI agent (Boonlertvanich, 2019; Jacobson *et al.*, 2020). In this context, comfort offers both utilitarian (security and ease of use) and hedonic (social) value. AI service delivery may offer utilitarian (i.e. functional) value by performing secure banking activities (Chang *et al.*, 2016; Hazarika *et al.*, 2019), especially for transaction-oriented tasks such as opening accounts (Jakšič and Marinč, 2019). We theorize that as AI service delivery creates a more efficient customer experience, consumers will need to spend fewer operant resources (skills and knowledge) on navigating the digital channel or app, shifting some of the operant resource expenditure back to the financial institution. The decreased cost of AIMB may thus result in greater perceived benefit to the consumer. It is conceivable that this additional benefit would be positively related to assessment of AIMB (Parasuraman, 2000) and the customer may experience more comfort with using AIMB (Herhausen *et al.*, 2015; Hilken *et al.*, 2018; Jacobson *et al.*, 2020).

Also of potential importance to consumers is the hedonic value that the current bank service delivery brings to AIMB (Park and Ha, 2016; Izogo and Jayawardhena, 2018). Sandström *et al.* (2008) suggest that technology is part of the servicescape (Bitner, 1992) and may be symbolic of a firm's culture. Some consumers feel more comfortable using AIMB instead of interacting with a bank employee (Dabholkar and Bagozzi, 2002). However, for customers with a higher need for human interaction, service delivery is dependent on employee–customer interaction (Lee, 2017). Within the AIMB platform, customers may choose to interact with a bank employee or with a virtual assistant; this gives the customer control (Gupta *et al.*, 2017), reduces feelings of being overwhelmed by AIMB and allows customers a voice in the value co-creation process (Gustafsson *et al.*, 2012; Adapa *et al.*, 2020). Therefore, relationship building may holistically occur within AIMB settings (Chang *et al.*, 2016). Overall, consumer response to a service innovation, reflected here in their level of comfort using different AIMB service configurations, is based on the following:

H8. Perceptions of AI service delivery will positively impact assessment of AIMB.

H9. Baseline perceptions of current bank service delivery will positively impact assessment of AIMB.

Measures and methods
Measures
A multi-stage process consisting of a review of the relevant literature, consultation with an advisory committee and a pre-test with 248 digital natives was used to develop the survey measures (see Table 1). The advisory committee was made up of faculty and business

Construct and measurement item	Standardized loading
Perceptions of AI service delivery: $\alpha = 0.84$; CR = 0.84; AVE = 0.58; M = 3.41, SD = 0.81	
Thinking about artificial intelligence (AI). . . (1 = strongly disagree to 5 = strongly agree)	
AI1 I would enjoy using AI	0.89
AI2 I think that AI is essential	0.75
AI3 AI is exciting	0.74
AI4 I am confident that I can use AI	0.64
Perceptions of current bank service delivery: $\alpha = 0.84$; CR = 0.82; AVE = 0.55; M = 3.41, SD = 0.81	
Overall, thinking about your bank. . . (1 = strongly disagree to 5 = strongly agree)	
SD1 My bank has excellent customer service	0.81
SD2 The service at my bank exceeds my expectations	0.86
SD3 I am satisfied with my bank	0.68
General data security: $\alpha = 0.91$; CR = 0.91; AVE = 0.77; M = 3.94, SD = 0.90	
When using mobile banking. . . (1 = strongly disagree to 5 = strongly agree)	
SEC1 It is secure	0.88
SEC2 Unauthorized people cannot gain access to accounts	0.84
SEC3 Financial data is kept private	0.91
Service delivery configuration benefits: $\alpha = 0.81$; CR = 0.78; AVE = 0.52; M = 4.45, SD = 0.63	
Mobile banking offers. . . (1 = strongly disagree to 5 = strongly agree)	
BEN1 Essential access to my accounts	0.72
BEN2 Greater control for managing personal finances	0.70
BEN3 Fast banking	0.75
BEN4 Banking information that customers need	0.80
Safety perceptions of MB services: $\alpha = 0.87$; CR = 0.87; AV = 63; M = 4.01, SD = 0.87	
I feel safe using mobile banking for. . . (1 = strongly disagree to 5 = strongly agree)	
SS1 Overall, I feel safe using mobile banking	0.93
SS2 In transferring money	0.79
SS3 In paying bills	0.75
SS4 In making check deposits	0.70
Assessment of artificial intelligence in mobile banking: $\alpha = 0.83$; CR = 0.85; AVE = 0.57; M = 3.01, SD = 0.91	
Thinking about interacting with an artificial intelligence. . . (1 = very uncomfortable to 5 = very comfortable)	
MB1 Using an automated voice menu	0.57
MB2 Having a conversation with AI concerning your accounts	0.83
MB3 Getting personalized investment advice	0.75
MB4 Overall, I feel comfortable with AI while banking	0.88

Table 1.
Constructs and measures

Notes: CR = Composite reliability; AVE = Average variance extracted. Sample consisted of 218 respondents. $\chi^2 = 233.085$, df = 192, CMIN/df = 1.2, $p = 0.023$; GFI = 0.92; CFI = 0.98; NFI = 0.92; TLI = 0.98; RMSEA = 0.03 [0.02–0.05]

professionals with insights on the digital delivery of financial services. The final survey has IRB approval.

Baseline perceptions of current bank service delivery (adapted from Alzaydi *et al.*, 2018) refers to a customer's perceived level of fulfillment in comparison to his or her expectations when engaging with financial institutions.

Perceptions of artificial intelligence (AI) service delivery (adapted from Curran and Meuter, 2005; Åkesson *et al.*, 2014; Gummerus *et al.*, 2019) reflects an individual's overall attitude toward artificial intelligence in service delivery.

Service delivery configuration benefits (adapted from Lin, 2011) measures digital service transformations of mobile banking (Galindo-Martín *et al.*, 2019).

General data security (adapted from Lin *et al.*, 2020) refers to perceptions of security measures to protect financial data and information when using mobile banking (Johnson *et al.*, 2018).

Safety perceptions of mobile banking services (adapted from Bidarra *et al.*, 2013; Albashrawi and Motiwalla, 2020) assesses customer perceptions of threats associated with mobile banking activities.

Assessment of artificial intelligence in mobile banking (AIMB) reflects the respondent's level of comfort with AI mobile banking applications; it was measured with four original items developed after a review of smart service and self-service technology literature (Curran and Meuter, 2005; Åkesson *et al.*, 2014; Nijssen *et al.*, 2016; Gummerus *et al.*, 2019).

Sample and procedures

A representative sample of students enrolled in business classes at a large Midwestern university was selected. As digital natives, these students are open to new technologies, yet there is considerable variance in their perceptions of information sensitivity and security (Mondres, 2019). Participants were recruited in two waves, with an incentive of extra credit, to complete an online survey. Respondents were prescreened with a qualifying question that asked if they had at least one bank account. Of the 299 students who were invited to participate, 243 qualified and 218 completed the survey, for a response rate of 89.7%.

Measurement model

An initial exploratory factor analysis confirmed the presence of six factors, with each item loading as expected (Cronbach's α ranged from 0.81 to 0.91). A confirmatory factor analysis was then conducted to assess model fit, reliability and validity. The model fit statistics exceeded thresholds recommended by Hu and Bentler (1999) and Hair *et al.* (2006), indicating an excellent overall fit of the data [χ^2 = 233.085, df = 192, chi-square/degrees of freedom/df = 1.2, p = 0.02; goodness of fit (GFI) = 0.92; comparative fit index (CFI) = 0.98; normative fit index (NFI) = 0.92; Tucker Lewis index (TLI) = 0.98; root mean square error of approximation (RMSEA) = 0.03]. Table 1 presents the final measurement items, the standardized factor loadings and the scale reliability/validity statistics. Convergent and discriminant validity were established by each construct achieving an AVE above 0.50, with maximum shared variance < AVE (average variance extracted) and average shared variance < AVE, and, as recommended by Fornell and Larcker (1981), the square root of the AVE exceeded all paired correlations shown in the diagonal of the correlation matrix in Table 2.

Following Podsakoff *et al.* (2003), attention was given to reduce common method variance (CMV). Specifically, two post-measurement procedures were implemented to

	Mean	SD	1	2	3	4	5	6
1. Baseline perceptions of current bank service delivery	4.11	0.75	0.79					
2. Service delivery configuration benefits	4.45	0.63	0.249**	0.74				
3. General data security	3.95	0.90	0.363**	0.478**	0.88			
4. Safety perceptions of mobile banking services	4.01	0.87	0.316**	0.473**	0.674**	0.80		
5. Perceptions of AI service delivery	3.41	0.81	0.04	0.136*	0.184**	0.291**	0.76	
6. Assessment of AIMB	3.06	0.91	0.137*	0.08	0.184**	0.284**	0.572**	0.77

Notes: SD = Standard deviation; AI = Artificial intelligence; AIMB = Artificial intelligence and mobile banking service platforms. **Significant at p < 0.01; *Significant at p < 0.05

Table 2.
Descriptive statistics

ascertain CMV. First, Harman's single-factor test indicated that the total percentage of the variance explained was only 35.66%, suggesting no common method bias (Podsakoff *et al.*, 2003). Second, the common latent factor method was used, and all absolute values of the deltas of the standardized regression weights were below the 0.20, suggesting that common method bias is not an issue. Thus, the final measurement model and path models were not controlled for common method bias. Table 2 provides the relevant descriptive statistics.

Results

The structural path model included nine hypothesized relationships. We used structural equation modeling (SEM) path analysis in AMOS 25 while also testing alternative models.

Structural model fit

The model fit statistics exceeded thresholds recommended by Hu and Bentler (1999) and Hair *et al.* (2006), indicating an excellent overall fit of the data ($\chi^2 = 231.832$, df = 197, GFI = 0.92, CFI = 0.99, NFI = 0.92, TLI = 0.98, RMSEA = 0.03). Overall, eight of the nine hypothesized relationships were statistically significant and in the predicted direction. Table 3 shows the parameter estimates and model fit statistics, and Figure 2 illustrates the empirical results.

Direct effects on assessment of artificial intelligence and mobile banking

Perceptions of AI service delivery (*H8*; $\beta = 0.665$; $p < 0.001$) and baseline perceptions of current bank service delivery (*H9*; $\beta = 0.133$; $p < 0.05$) had significant, positive direct effects on assessment of AIMB, supporting *H8* and *H9*. Safety perceptions of mobile banking services (*H6*; $\beta = 0.352$; $p < 0.001$) had a positive direct effect on perceptions of AI service delivery, indicating the effects on assessment of AIMB are fully mediated by perceptions of AI service delivery. Baseline perceptions of current bank service delivery did not have a statistically significant effect on perceptions of AI service delivery; thus *H7* is not supported.
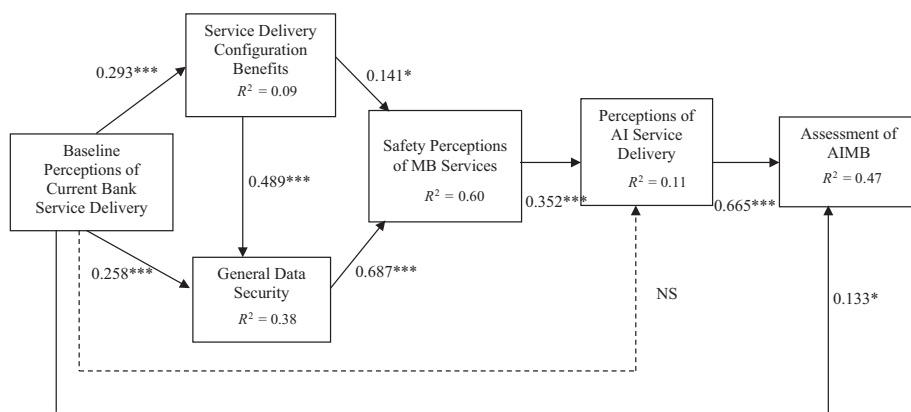
Indirect effects

Antecedents to safety perceptions of mobile banking services: Both service delivery configuration benefits (*H4*; $\beta = 0.141$; $p < 0.05$) and general data security (*H5*; $\beta = 0.687$; $p < 0.001$) had positive effects on safety perceptions of mobile banking services, supporting *H4* and *H5*. Baseline perceptions of current bank service delivery had a significant positive effect on service delivery configuration benefits (*H1*; $\beta = 0.293$; $p < 0.001$) and general data

Hypotheses and paths	Coefficient	Supported
H1: Bank service delivery → SD configuration benefits	0.293***	Yes
H2: Bank service delivery → General data security	0.258***	Yes
H3: SD configuration benefits → General data security	0.489***	Yes
H4: SD configuration benefits → MB safety perceptions	0.141**	Yes
H5: General data security → MB safety perceptions	0.687***	Yes
H6: Safety Perceptions → AI service delivery	0.352***	Yes
H7: Bank service delivery → AI service delivery	n.s.	No
H8: AI service delivery → Assessment of AIMB	0.665***	Yes
H9: Bank service delivery → Assessment of AIMB	0.133*	Yes

Table 3.
Tests of SEM paths by hypothesis

Notes: Sample consisted of 218 respondents. $\chi^2 = 231.832$, df = 197, GFI = 0.92, CFI = 0.99, NFI = 0.92, TLI = 0.98, RMSEA = 0.03 [0.03–0.05]. SD = service delivery; MB = Mobile banking; AI = Artificial intelligence; AIMB = Artificial intelligence and mobile banking service platforms; n.s. = Not significant. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Figure 2.
Empirical study
results

Notes: Sample consisted of 218 respondents. $\chi^2 = 231.832$, d.f.$= 197$, GFI $=0.92$; AGFI $= 0.90$; CFI $= 0.99$; NFI $= 0.92$; TLI $= 0.98$ RMSEA $= 0.03$ [0.03-0.05]. n.s. $=$ not significant. Dashed lines $=$ not significant pathway. $*p < 0.050$, $**p < 0.010$, $***p < 0.001$

security ($H2$; $\beta = 0.258$; $p < 0.001$), indicating the effects on safety perceptions of mobile banking services are fully mediated by service delivery configuration benefits and general data security.

Other indirect paths: Finally, service delivery configuration benefits enhance general data security ($H3$; $\beta = 0.489$; $p < 0.001$), supporting $H3$. This pathway helps demonstrate how perceptions of mobile banking create value.

Discussion
The goal of this study was to investigate the relationships that influence the value co-creation process, leading to consumers' level of comfort with varied AIMB service platforms. We theorized that three service delivery variables and two mobile banking variables help explain how consumers assess AIMB service platforms. We found positive influences of service delivery configuration benefits, security and safety on the mobile banking channel. This suggests that consumers ascribe utilitarian value to these variables, which may be of importance for many digital transformations (Saunila *et al.*, 2019).

Of particular interest is how consumers assess mobile banking with AI platforms in an omni-channel environment. Both AI and the omni-channel are reflective of digital transformation in the banking industry (Choudrie *et al.*, 2018; Mbama *et al.*, 2018). Our results indicate that consumers seek of service delivery value and general data security, suggesting that they view service delivery holistically in an omni-channel environment. Contrary to expectations, the relationship between baseline perceptions of current bank service delivery and perceptions of AI service delivery was negative, albeit not statistically significant. It is possible that consumers still view service delivery in a social context (Lee, 2017; Jakšič and Marinč, 2019) and they value interpersonal interactions over AI.

Conclusion
Digital transformation is creating new opportunities for financial institutions to interact with their customers (Kucharska, 2019; Adapa *et al.*, 2020). As AI continues to disrupt the

industry, value-creating activities are shifting from brick-and-mortar to self-service channels with no direct contact with bank employees (Gummerus *et al.*, 2019). This is a critical issue, as the banking industry is still highly invested in relationship-oriented banking (Boateng, 2019; Fernandes and Pinto, 2019). As digital technologies continue to transform the value co-creation process, it is crucial that we have a better understanding of the role of AI in service delivery.

Our findings confirm that perceptions of AI service delivery are highly influential in determining the level of comfort with AIMB, whereas current bank service delivery is not. This suggests that consumers give greater weight to the utilitarian value of AI and mobile banking (i.e. security, speed and convenience) than the hedonic value of service delivery in a social context. Additionally, the results support the SDL view of consumers as participants in the value co-creation process in digital technology channels (Elsharnouby and Mahrous, 2015; Saunila *et al.*, 2019). Both technology-based skills and, to a much lesser degree, interpersonal resources are consumed by the banking customer in the value co-creation process. Because AI is part of the value proposition offered by the financial institution, consumer spending of technology-related operant resources shifts back to the financial institution, increasing consumer value of AI service delivery in digital channels.

Implications for practitioners

This study has important implications for practitioners. Digital transformation, AI and AIMB are shifting the customer experience from interpersonal relationships to on-demand service with security, speed and convenience. Although AIMB offers an effective strategy for enhancing firm performance and attaining competitive advantage (Chepurna and Rialp Criado, 2018; Adapa *et al.*, 2020), it falls short for customers who still seek interpersonal connections. Moreover, as AI is used to deliver higher value services (e.g. retirement planning), consumers will need to become more comfortable with AI interactions for firms to recoup their AI investments. Banks will need to educate customers on how AI provides value for their financial needs (Marous, 2017).

Limitations and future research

The participants in our study – students enrolled at a large Midwestern university – are primarily Generation Z, and generalizing to populations outside the sampling frame can be problematic. Future research should investigate whether the findings hold for other demographics, such as millennials and baby boomers. In addition, the majority of the participants are from the USA. Mobile banking users in other countries may have different perceptions of the sensitivity of AI–customer interactions and thus different levels of comfort with AIMB. Research on consumers in other countries is important for understanding the effects of digital transformation on value co-creation.

AI can be viewed as a "radical innovation" (Gustafsson *et al.*, 2012) that requires frequent communication from the firm to ensure positive outcomes from the value co-creation process. However, as mobile banking is transformed into AIMB, automation further reduces opportunities for interpersonal communication at branch locations, potentially having a negative effect on relationship marketing. Research is warranted on the effects of a firm's marketing communications on consumer acceptance of and comfort with digital transformation because of AIMB.

To date, AIMB usage in the banking industry is relatively low. This is particularly true at the advanced end of the AI–customer interaction continuum. More research is needed on how consumers view AIMB in light of the value added by the AI. For example, would consumers accept recommendations from an AI agent for financial planning as they would

from a bank employee? Do the factors that influence the level of trust a customer has in AIMB vary depending on the point on the continuum? How can firms maximize consumer trust in AIMB across the continuum?

Finally, the focus of our study was comfort with AIMB and its antecedents. However, as with any digital transformation, an important consequence of comfort with a technology is actual adoption of the technology. Adoption is difficult to investigate in the very early stages of the diffusion of an innovation (Rogers, 1995), but it will be important for future research to consider the consumer decision-making process for actual adoption vs non-adoption of AIMB.

References

Adapa, S., Fazal-e-Hasan, S.M., Makam, S.B., Azeem, M.M. and Mortimer, G. (2020), "Examining the antecedents and consequences of perceived shopping value through smart retail technology", *Journal of Retailing and Consumer Services*, Vol. 52, pp. 1-11.

Åkesson, M., Edvardsson, B. and Tronvoll, B. (2014), "Customer experience from a self-service system perspective", *Journal of Service Management*, Vol. 25 No. 5, pp. 677-698.

Akhter, S.H. (2015), "Impact of internet usage comfort and internet technical comfort on online shopping and online banking", *Journal of International Consumer Marketing*, Vol. 27 No. 3, pp. 207-219.

Albashrawi, M. and Motiwalla, L. (2020), "An integrative framework on mobile banking success", *Information Systems Management*, Vol. 37 No. 1, pp. 16-32.

Alzaydi, Z.M., Al-Hajla, A., Nguyen, B. and Jayawardhena, C. (2018), "A review of service quality and service delivery: towards a customer co-production and customer-integration approach", *Business Process Management Journal*, Vol. 24 No. 1, pp. 295-328.

Arcand, M., PromTep, S., Brun, I. and Rajaobelina, L. (2017), "Mobile banking service quality and customer relationships", *International Journal of Bank Marketing*, Vol. 35 No. 7, pp. 1068-1089.

Baabdullah, A.M., Alalwan, A.A., Rana, N.P., Kizgin, H. and Patil, P. (2019), "Consumer use of mobile banking (M-Banking) in Saudi Arabia: towards an integrated model", *International Journal of Information Management*, Vol. 44, pp. 38-52.

Balapour, A., Nikkhah, H.R. and Sabherwal, R. (2020), "Mobile application security: role of perceived privacy as the predictor of security perceptions", *International Journal of Information Management*, Vol. 52, pp. 1-13.

Bidarra, S.H.S., Muñoz-Leiva, F. and Liébana-Cabanillas, F. (2013), "The determinants of mobile banking acceptance: conceptual development and empirical analysis", *International Journal of Management Science and Technology Information*, No. 8, pp. 1-27.

Bitner, M.J. (1992), "Servicescapes: the impact of physical surroundings on customers and employees", *Journal of Marketing*, Vol. 56 No. 2, pp. 57-71.

Boateng, S.L. (2019), "Online relationship marketing and customer loyalty: a signaling theory perspective", *International Journal of Bank Marketing*, Vol. 37 No. 1, pp. 226-240.

Boonlertvanich, K. (2019), "Service quality, satisfaction, trust, and loyalty: the moderating role of main-bank and wealth status", *International Journal of Bank Marketing*, Vol. 37 No. 1, pp. 278-302.

Brown, I., Cajee, Z., Davies, D. and Stroebel, S. (2003), "Cell phone banking: predictors of adoption in South Africa – an exploratory study", *International Journal of Information Management*, Vol. 23 No. 5, pp. 381-394.

Cambra-Fierro, J., Pérez, L. and Grott, E. (2017), "Towards a co-creation framework in the retail banking services industry: do demographics influence?", *Journal of Retailing and Consumer Services*, Vol. 34, pp. 219-228.

Castelli, M., Manzoni, L. and Popovič, A. (2016), "An artificial intelligence system to predict quality of service in banking organizations", *Computational Intelligence and Neuroscience*, Vol. 2016, pp. 1-7.

Chang, H.H., Fu, C.S., Fang, P.W. and Cheng, Y.-C. (2016), "The effects of relationship maintenance and relationship investment on self-service technology relationship performance", *Information Technology and People*, Vol. 29 No. 3, pp. 496-526.

Chaouali, W., Souiden, N. and Ladhari, R. (2017), "Explaining adoption of mobile banking with the theory of trying, general self-confidence, and cynicism", *Journal of Retailing and Consumer Services*, Vol. 35, pp. 57-67.

Chepurna, M. and Rialp Criado, J. (2018), "Identification of barriers to co-create on-line: the perspectives of customers and companies", *Journal of Research in Interactive Marketing*, Vol. 12 No. 4, pp. 452-471.

Choudrie, J., Junior, C.-O., McKenna, B. and Richter, S. (2018), "Understanding and conceptualising the adoption, use and diffusion of mobile banking in older adults: a research agenda and conceptual framework", *Journal of Business Research*, Vol. 88, pp. 449-465.

Curran, J.M. and Meuter, M.L. (2005), "Self-service technology adoption: comparing three technologies", *Journal of Services Marketing*, Vol. 19 No. 2, pp. 103-113.

Dabholkar, P.A. and Bagozzi, R.P. (2002), "An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors", *Journal of the Academy of Marketing Science*, Vol. 30 No. 3, pp. 184-201.

Dahl, A.J., Milne, G.R. and Peltier, J.W. (2020), "Digital health information seeking in an omni-channel environment: a shared decision-making and service-dominant logic perspective", *Journal of Business Research*.

Dahl, A.J., Peltier, J.W. and Milne, G.R. (2018a), "Development of a value co-creation wellness model: the role of physicians and digital information seeking on health behaviors and health outcomes", *Journal of Consumer Affairs*, Vol. 52 No. 3, pp. 562-594.

Dahl, A.J., Barber, K. and Peltier, J.W. (2019), "Social media's effectiveness for activating social declarations and motivating personal discussions to improve organ donation consent rates", *Journal of Research in Interactive Marketing*, Vol. 13 No. 1, pp. 47-61.

Dahl, A.J., D'Alessandro, A.M., Peltier, J.W. and Swan, E.L. (2018b), "Differential effects of omni-channel touchpoints and digital behaviors on digital natives' social cause engagement", *Journal of Research in Interactive Marketing*, Vol. 12 No. 3, pp. 258-273.

Dwivedi, Y.K., Rana, N.P., Slade, E.L., Singh, N. and Kizgin, H. (2020), "Editorial introduction: advances in theory and practice of digital marketing", *Journal of Retailing and Consumer Services*, Vol. 53, pp. 1-4.

Elsharnouby, T.H. and Mahrous, A.A. (2015), "Customer participation in online co-creation experience: the role of e-service quality", *Journal of Research in Interactive Marketing*, Vol. 9 No. 4, pp. 313-336.

Fernandes, T. and Pinto, T. (2019), "Relationship quality determinants and outcomes in retail banking services: the role of customer experience", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 30-41.

Finsterwalder, J. (2018), "A 360-degree view of actor engagement in service co-creation", *Journal of Retailing and Consumer Services*, Vol. 40, pp. 276-278.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Galindo-Martín, M.-Á., Castaño-Martínez, M.-S. and Méndez-Picazo, M.-T. (2019), "Digital transformation, digital dividends and entrepreneurship: a quantitative analysis", *Journal of Business Research*, Vol. 101, pp. 522-527.

Ghosh, D. and Nilanjan, R. (2017), "Evaluation of customer satisfaction by service dominant logic for banking sector: an indicative study based on HDFC bank", *IUP Journal of Management Research*, Vol. 16 No. 4, pp. 34-47.

Grönroos, C. (2006), "Adopting a service logic for marketing", *Marketing Theory*, Vol. 6 No. 3, pp. 317-333.

Grönroos, C. (2008), "Service logic revisited: who creates value? And who co-creates?", *European Business Review*, Vol. 20 No. 4, pp. 298-314.

Grönroos, C. and Ravald, A. (2011), "Service as business logic: implications for value creation and marketing", *Journal of Service Management*, Vol. 22 No. 1, pp. 5-22.

Gummerus, J., Lipkin, M., Dube, A. and Heinonen, K. (2019), "Technology in use – characterizing customer self-service devices (SSDS)", *Journal of Services Marketing*, Vol. 33 No. 1, pp. 44-56.

Gupta, S., Yun, H., Xu, H. and Kim, H.-W. (2017), "An exploratory study on mobile banking adoption in Indian metropolitan and urban areas: a scenario-based experiment", *Information Technology for Development*, Vol. 23 No. 1, pp. 127-152.

Gustafsson, A., Kristensson, P. and Witell, L. (2012), "Customer co-creation in service innovation: a matter of communication?", *Journal of Service Management*, Vol. 23 No. 3, pp. 311-327.

Hair, J.F., Black, W.C., Anderson, R.E. and Babin, B.J. (2006), *Multivariate Data Analysis*, Pearson Prentice Hall, Upper Saddle River, NJ.

Hallikainen, H., Alamäki, A. and Laukkanen, T. (2019), "Individual preferences of digital touchpoints: a latent class analysis", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 386-393.

Hazarika, B.B., Mousavizadeh, M. and Tarn, M. (2019), "A comparison of hedonic and utilitarian digital products based on consumer evaluation and technology frustration", *Journal of Information Systems and Technology Management*, Vol. 16, pp. 1-16.

Herhausen, D., Binder, J., Schoegel, M. and Herrmann, A. (2015), "Integrating bricks with clicks: retailer-level and channel-level outcomes of online – offline channel integration", *Journal of Retailing*, Vol. 91 No. 2, pp. 309-325.

Hilken, T., Heller, J., Chylinski, M., Keeling, D.I., Mahr, D. and de Ruyter, K. (2018), "Making omnichannel an augmented reality: the current and future state of the art", *Journal of Research in Interactive Marketing*, Vol. 12 No. 4, pp. 509-523.

Hossain, T.M.T., Akter, S., Kattiyapornpong, U. and Dwivedi, Y.K. (2019), "Multichannel integration quality: a systematic review and agenda for future research", *Journal of Retailing and Consumer Services*, Vol. 49, pp. 154-163.

Hu, L.-T. and Bentler, P.M. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6 No. 1, pp. 1-55.

Huang, M.-H. and Rust, R.T. (2018), "Artificial intelligence in service", *Journal of Service Research*, Vol. 21 No. 2, pp. 155-172.

Izogo, E.E. and Jayawardhena, C. (2018), "Online shopping experience in an emerging e-retailing market", *Journal of Research in Interactive Marketing*, Vol. 12 No. 2, pp. 193-214.

Jacobson, J., Gruzd, A. and Hernández-García, Á. (2020), "Social media marketing: who is watching the watchers?", *Journal of Retailing and Consumer Services*, Vol. 53, pp. 1-12.

Jakšič, M. and Marinč, M. (2019), "Relationship banking and information technology: the role of artificial intelligence and FinTech", *Risk Management*, Vol. 21 No. 1, pp. 1-18.

Johnson, V.L., Kiser, A., Washington, R. and Torres, R. (2018), "Limitations to the rapid adoption of M-payment services: understanding the impact of privacy risk on M-payment services", *Computers in Human Behavior*, Vol. 79, pp. 111-122.

Khrais, L.T. and Shidwan, O.S. (2020), "Mobile commerce and its changing use in relevant applicable areas in the face of disruptive technologies", *International Journal of Applied Engineering Research*, Vol. 15 No. 1, pp. 12-23.

Korzeniowski, P. (2017), "Bots should be in your contact center's future", *Customer Relationship Management*.

Kristensson, P. (2019), "Future service technologies and value creation", *Journal of Services Marketing*, Vol. 33 No. 4, pp. 502-506.

Kucharska, W. (2019), "Online brand communities' contribution to digital business models: social drivers and mediators", *Journal of Research in Interactive Marketing*, Vol. 13 No. 4, pp. 437-463.

Laukkanen, T. (2007), "Internet vs mobile banking: comparing customer value perceptions", *Business Process Management Journal*, Vol. 13 No. 6, pp. 788-797.

Laukkanen, T. (2016), "Consumer adoption versus rejection decisions in seemingly similar service innovations: the case of the internet and mobile banking", *Journal of Business Research*, Vol. 69 No. 7, pp. 2432-2439.

Lee, H.-J. (2017), "Personality determinants of need for interaction with a retail employee and its impact on self-service technology (SST) usage intentions", *Journal of Research in Interactive Marketing*, Vol. 11 No. 3, pp. 214-231.

Lee, J., Ryu, M.H. and Lee, D. (2019), "A study on the reciprocal relationship between user perception and retailer perception on platform-based mobile payment service", *Journal of Retailing and Consumer Services*, Vol. 48, pp. 7-15.

Lemon, K.N. and Verhoef, P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of Marketing*, Vol. 80 No. 6, pp. 69-96.

Lin, H.-F. (2011), "An empirical investigation of mobile banking adoption: the effect of innovation attributes and knowledge-based trust", *International Journal of Information Management*, Vol. 31 No. 3, pp. 252-260.

Lin, W.-R., Wang, Y.-H. and Hung, Y.-M. (2020), "Analyzing the factors influencing adoption intention of internet banking: applying DEMATEL-ANP-SEM approach", *PLoS One*, Vol. 15 No. 2, pp. 1-25.

Lusch, R.F., Vargo, S.L. and Wessels, G. (2008), "Toward a conceptual foundation for service science: contributions from service-dominant logic", *IBM Systems Journal*, Vol. 47 No. 1, pp. 5-14.

Manser Payne, E., Dahl, A.J. and Peltier, J.W. (2021), "Multi-actor digital servitization value co-creation framework for AI services: a research agenda for digital transformation in financial service ecosystems", *Journal of Research in Interactive Marketing*.

Manser Payne, E., Peltier, J.W. and Barger, V.A. (2018), "Mobile banking and AI-enabled mobile banking: the differential effects of technological and non-technological factors on digital natives' perceptions and behavior", *Journal of Research in Interactive Marketing*, Vol. 12 No. 3, pp. 328-346.

Markos, E., Milne, G.R. and Peltier, J.W. (2017), "Information sensitivity and willingness to provide continua: a comparative privacy study of the United States and Brazil", *Journal of Public Policy and Marketing*, Vol. 36 No. 1, pp. 79-96.

Marous, J. (2017), *Innovation in Retail Banking. Digital Banking Report*, DBR Media, Brecksville, OH.

Mbama, C.I., Ezepue, P., Alboul, L. and Beer, M. (2018), "Digital banking, customer experience and financial performance: UK bank managers' perceptions", *Journal of Research in Interactive Marketing*, Vol. 12 No. 4, pp. 432-451.

Mistry, D. (2018), "Chatbots in banking can play the role of 'financial concierge'", available at: https://thefinancialbrand.com/72607/banking-ai-chatbot-pfm-personalization/

Mondres, T. (2019), "How Generation Z is changing financial services", *ABA Banking Journal*.

Nijssen, E.J., Schepers, J.J.L. and Belanche, D. (2016), "Why did they do it? How customers' self-service technology introduction attributions affect the customer-provider relationship", *Journal of Service Management*, Vol. 27 No. 3, pp. 276-298.

Parasuraman, A. (2000), "Technology readiness index (TRI): a multiple-item scale to measure readiness to embrace new technologies", *Journal of Service Research*, Vol. 2 No. 4, pp. 307-320.

Park, J. and Ha, S. (2016), "Co-creation of service recovery: utilitarian and hedonic value and post-recovery responses", *Journal of Retailing and Consumer Services*, Vol. 28, pp. 310-316.

Patrício, L., Gustafsson, A. and Fisk, R. (2018), "Upframing service design and innovation for research impact", *Journal of Service Research*, Vol. 21 No. 1, pp. 3-16.

Peltier, J.W., Dahl, A.J. and Swan, E.L. (2020), "Digital information flows across a B2C/C2C continuum and technological innovations in service ecosystems: a service-dominant logic perspective", *Journal of Business Research*, Vol. 121, pp. 724-234.

Piotrowicz, W. and Cuthbertson, R. (2019), "Last mile framework for omnichannel retailing: delivery from the customer perspective", in Piotrowicz, W. and Cuthbertson, R. (Eds), *Exploring Omnichannel Retailing: Common Expectations and Diverse Realities*, Springer.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Püschel, J., Mazzon, J.A. and Hernandez, J.M.C. (2010), "Mobile banking: proposition of an integrated adoption intention framework", *International Journal of Bank Marketing*, Vol. 28 No. 5, pp. 389-409.

Rogers, E.M. (1995), *Diffusion of Innovations*, Free Press, New York, NY.

Sandström, S., Edvardsson, B., Kristensson, P. and Magnusson, P. (2008), "Value in use through service experience", *Managing Service Quality: An International Journal*, Vol. 18 No. 2, pp. 112-126.

Saunila, M., Ukko, J. and Rantala, T. (2019), "Value co-creation through digital service capabilities: the role of human factors", *Information Technology and People*, Vol. 32 No. 3, pp. 627-645.

Sengupta, R. and Dice, J. (2019), "Did local factors contribute to the decline in bank branches?", *Economic Review-Federal Reserve Bank of Kansas City*, Vol. 104 No. 3, pp. 43-64.

Shankar, A. and Kumari, P. (2016), "Factors affecting mobile banking adoption behavior in India", *Journal of Internet Banking and Commerce*, Vol. 21 No. 1, pp. 1-24.

Shen, Y.-C., Huang, C.-Y., Chu, C.-H. and Hsu, C.-T. (2010), "A benefit-cost perspective of the consumer adoption of the mobile banking system", *Behaviour and Information Technology*, Vol. 29 No. 5, pp. 497-511.

Shin, S., Lee, W-J. and Odom, D. (2014), "A comparative study of smartphone user's perception and preference towards mobile payment methods in the US and Korea", *Journal of Applied Business Research (JABR)*, Vol. 30 No. 5, pp. 1365-1375.

Sihi, D. (2018), "Home sweet virtual home: the use of virtual and augmented reality technologies in high involvement purchase decisions", *Journal of Research in Interactive Marketing*, Vol. 12 No. 4, pp. 398-417.

Sklyar, A., Kowalkowski, C., Tronvoll, B. and Sörhammar, D. (2019), "Organizing for digital servitization: a service ecosystem perspective", *Journal of Business Research*, Vol. 104, pp. 450-460.

Souiden, N., Ladhari, R. and Chiadmi, N.-E. (2019), "New trends in retailing and services", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 286-288.

Sripalawat, J., Thongmak, M. and Ngramyarn, A. (2011), "M-banking in metropolitan Bangkok and a comparison with other countries", *Journal of Computer Information Systems*, Vol. 51 No. 3, pp. 67-76.

Srivastava, S.K. (2018), "Artificial intelligence: way forward for India", *JISTEM – Journal of Information Systems and Technology Management*, Vol. 15.

Straker, K., Wrigley, C. and Rosemann, M. (2015), "Typologies and touchpoints: designing multi-channel digital strategies", *Journal of Research in Interactive Marketing*, Vol. 9 No. 2, pp. 110-128.

Swan, E.L., Peltier, J.W. and Dahl, A.J. (2019), "Health-care marketing in an omni-channel environment: exploring telemedicine and other digital touchpoints", *Journal of Research in Interactive Marketing*, Vol. 13 No. 4, pp. 602-618.

Turetken, O., Grefen, P., Gilsing, R. and Adali, O.E. (2019), "Service-dominant business model design for digital innovation in smart mobility", *Business and Information Systems Engineering*, Vol. 61, pp. 9-29.

Vander Schee, O., Peltier, J.W. and Dahl, A.J. (2020), "Antecedent consumer factors, consequential branding outcomes and measures of online consumer engagement: current research and future directions", *Journal of Research in Interactive Marketing*, Vol. 14 No. 2, pp. 239-268.

Vargo, S.L. and Lusch, R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of Marketing*, Vol. 68 No. 1, pp. 1-17.

Verhoef, P.C., Lemon, K.N., Parasuraman, A., Roggeveen, A., Tsiros, M. and Schlesinger, L.A. (2009), "Customer experience creation: determinants, dynamics and management strategies", *Journal of Retailing*, Vol. 85 No. 1, pp. 31-41.

Veríssimo, J.M.C. (2018), "Usage intensity of mobile medical apps: a tale of two methods", *Journal of Business Research*, Vol. 89, pp. 442-447.

Yousafzai, S.Y., Foxall, G.R. and Pallister, J.G. (2010), "Explaining internet banking behavior: theory of reasoned action, theory of planned behavior, or technology acceptance model", *Journal of Applied Social Psychology*, Vol. 40 No. 5, pp. 1172-1202.

Zainuddin, N., Tam, L. and McCosker, A. (2016), "Serving yourself: value self-creation in health care service", *Journal of Services Marketing*, Vol. 30 No. 6, pp. 586-600.

Corresponding author

James Peltier can be contacted at: peltierj@uww.edu