



## Digital banking, customer experience and bank financial performance : UK customers' perceptions

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**Digital Banking, Customer Experience and Bank Financial  
Performance:  
UK Customers' Perceptions**

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FIGURES TO INSERT INTO THE MAIN PAPER BODY

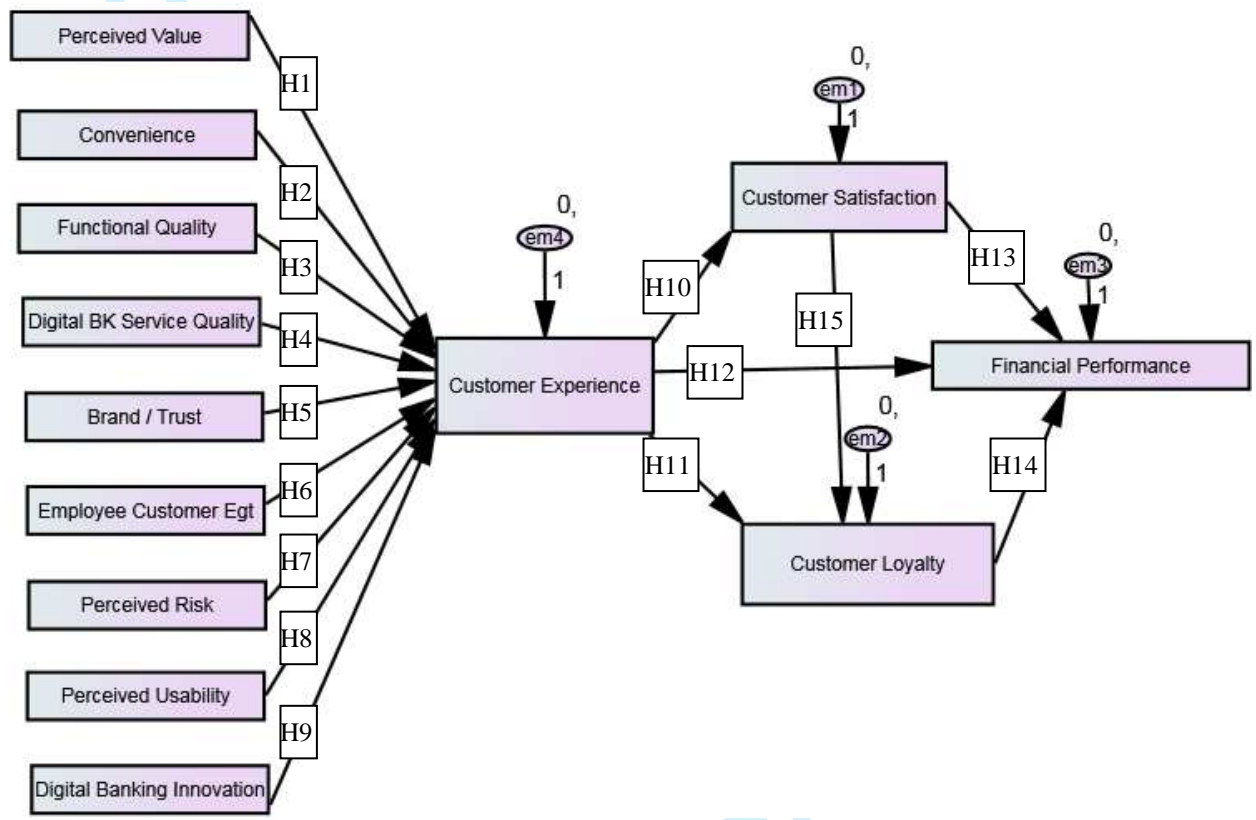


Figure 1. Conceptual Model

Bank Marketing

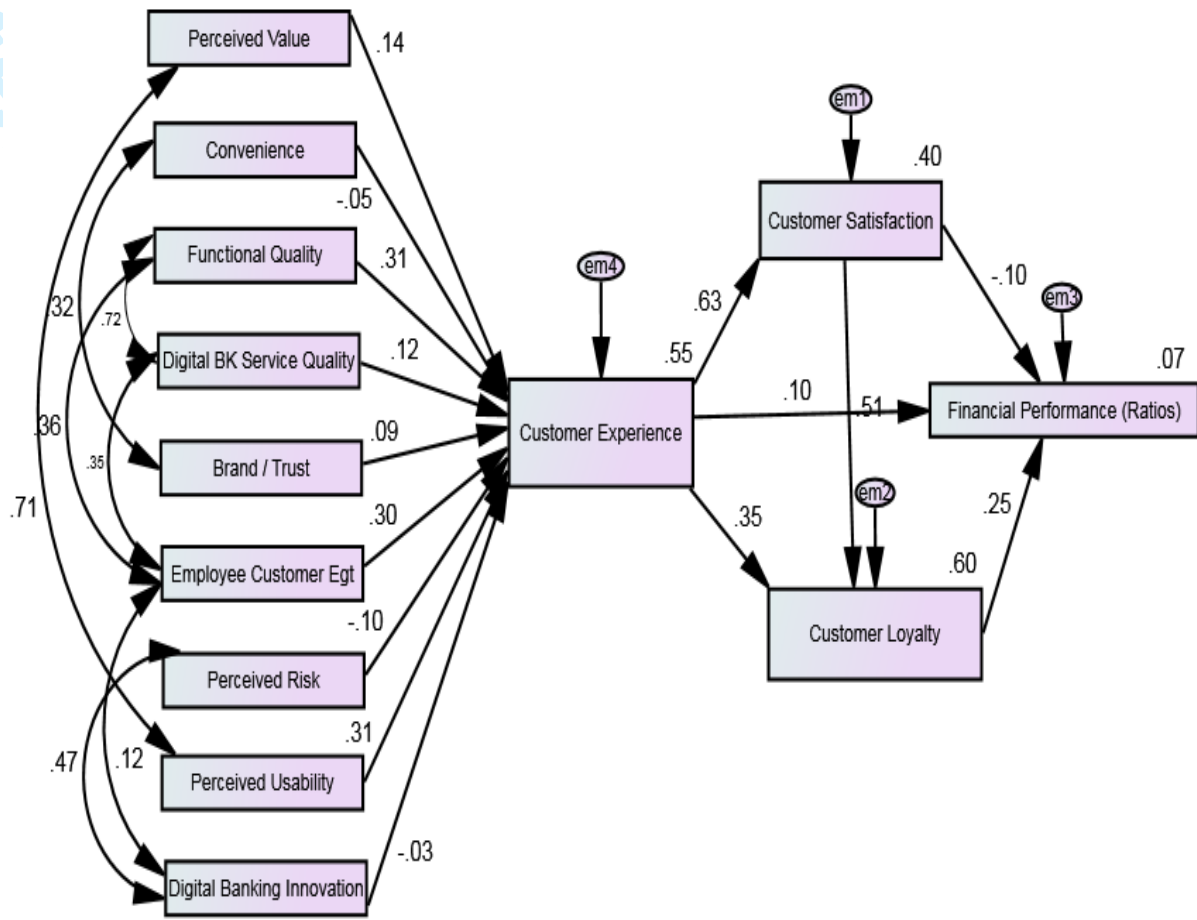


Figure 2. Model of the Factors using FP1

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International Journal of Bank Marketing

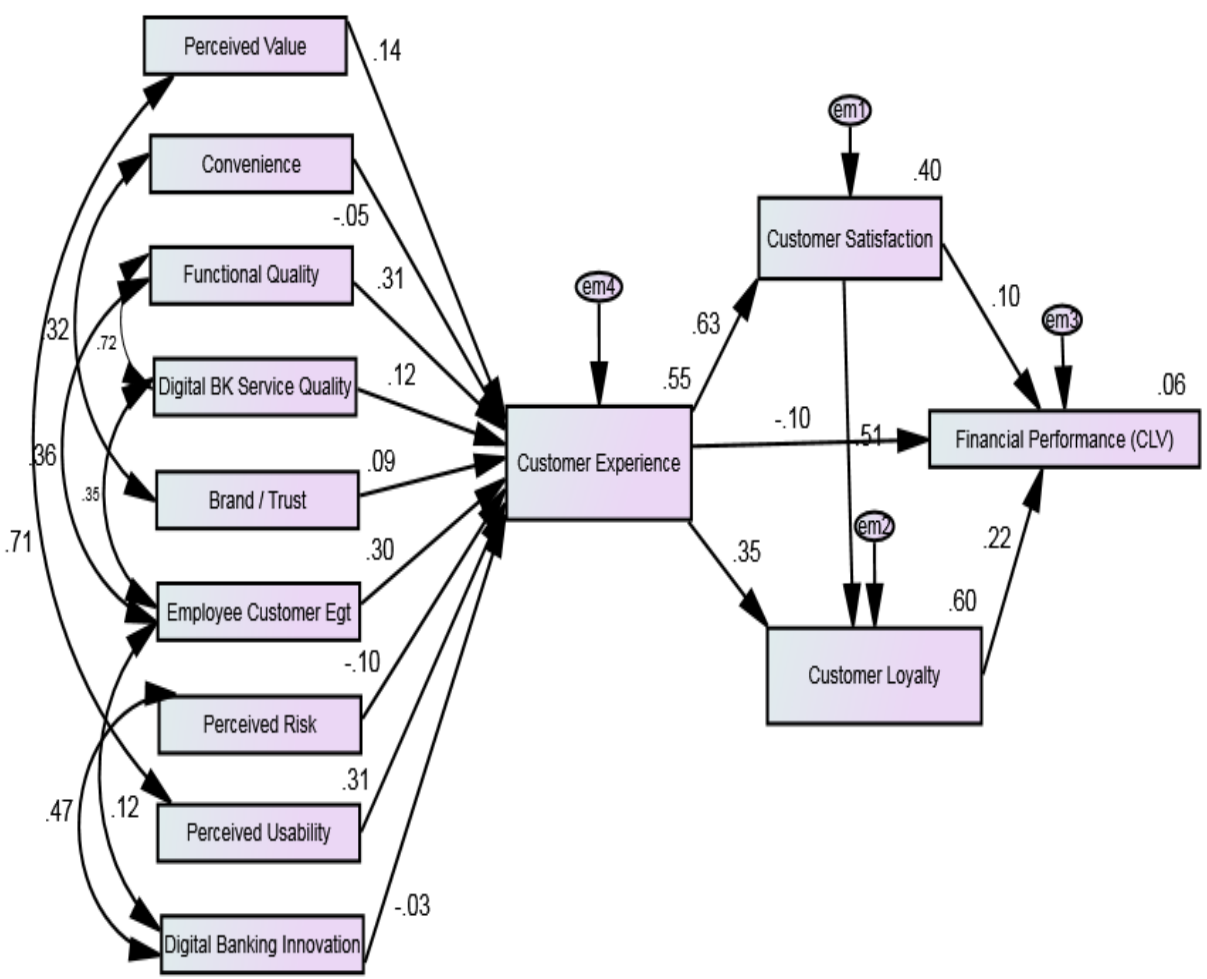


Figure 3. Model of the Factors using FP2

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Of Bank Marketing

## Digital Banking, Customer Experience and Bank Financial Performance: UK Customers' Perceptions

### Abstract

**Purpose** – The study examines customers' perceptions of digital banking, customer experience, satisfaction, loyalty, and financial performance in UK banks.

**Design/methodology/approach** – The research consists of a survey of UK bank customers' perceptions of the above themes; use of banks' financial reports to obtain financial performance ratios; Multivariate Factor Analysis, Structural Equation Modelling, and ANOVA tests to explore research hypotheses on the relationships among the study factors.

**Findings** – The main factors which determine customer experience in digital banking are service quality, functional quality, perceived value, employee-customer engagement, perceived usability and perceived risk. There is a significant relationship among customer experience, satisfaction and loyalty, which is related to financial performance.

**Research limitations/implications** – This study concentrates on UK bank customers which limits its generalisability to other banks globally. However, the fact that banks typically adopt common standards in bank financial management implies that the findings are potentially robust for global bank management. Replicating the study in banks in other countries will further enhance this robustness.

**Practical implications** – Some significant effects of customer characteristics on the study factors were observed, which have useful implications for digital banking, bank marketing services, and bank financial performance.

**Originality/value** – Unlike previous studies, this study uses both Net Promoter Score and financial ratios as dependent variables, to provide a combined study of the relationships among 14 study factors, with implications for bank marketing and financial performance.

**Keywords:** Digital Banking, Service Quality, Customer Experience, Customer Loyalty, Customer Satisfaction, Bank Financial Performance, Bank Marketing

**Paper Type:** Research paper

## 1. Introduction

The development of technology in the banking sector has significant implications for banks' marketing efforts (Dootson et al., 2016), especially in digital banking (DB) as it affects customer interfaces. DB via telephone, internet and mobile has become a major way of delivering multi-channel services to customers, which is challenging traditional banking models (Cortiñas et al., 2010). As customers' expectations increase, capturing and retaining them and improving profitability becomes important, especially after the financial crisis of 2008 (Monferrer-Tirado et al., 2016).

Moreover, increasing DB uptake has made some UK banks reduce branch numbers (BBC, 2016; French et al., 2013). This shift towards DB means that banks' marketing and financial management models are changing, making it crucial for banks to understand the impact of DB on customer experience and financial performance phenomena. This paper, therefore, fills the need for a composite understanding of UK customers' perceptions of the relationships among DB, customer experience, and bank financial performance, and their implications for bank marketing. This perspective has not been explored in literature.

Some previous studies focused on marketing and service quality, the relationship among customer satisfaction and loyalty (Jun and Palacios, 2016; Amin, 2016), financial performance of banks (Keisidou et al., 2013; Liang et al., 2009), and mainly customer experience (Klaus and Maklan, 2013; Garg et al., 2014), giving limited attention to the effect of customer experience on financial performance. Recent research has investigated internet and mobile banking service quality and customer satisfaction (Amin, 2016; Saleem et al., 2016), but DB is not yet treated holistically in bank marketing as pursued in this paper. Additionally, Piyathananan et al. (2015) in their study of the effects of internet experience on customer value perception argue that few guidelines are available on how to improve consumers' digital experience.

Evidently, banks are service providers whose financial success depends on customers' perceived service quality and experience (Andaleeb et al., 2016). The service marketing challenge for banks is to overcome customers' reluctance to use DB due to bad experience. Developing service marketing theory for DB requires an understanding of customers' preferences, and drivers of

customer satisfaction and loyalty (Grönroos, 1984), as in this study. Although DB is ubiquitous among all mainstream banks, there is still a need to understand the impact of DB on bank financial performance, especially for different customer segments (Keisidou et al., 2013; Patsiotis et al., 2012; Garg et al., 2014). This will enable different banks to fine-tune their bank marketing strategies in line with their overarching business model.

This paper presents an integrated understanding of customers' perceptions of the links among DB, customer experience, satisfaction, loyalty, two measures of financial performance (FP), namely traditional financial ratios (FP1) and Net Promoter Scores (NPS) criteria (FP2), and their implications for bank marketing. The specific research objectives are:

1. To perform exploratory data analyses (e.g. descriptive analysis and paired correlations) of the research data on 14 key factors (see Figure 1 below) which relate to DB, customer experience, satisfaction, loyalty, and the FP1-FP2 measures;
2. To use exploratory factor analyses to test the strengths of the relationships among the factors, and their associated loadings on questionnaire items, with a primary focus on how these results underpin FP1 and FP2;
3. To apply confirmatory Structural Equation Modelling (SEM) of these relationships to explore some subsidiary and primary hypotheses on the extent and direction of relationships among the explanatory variables, and triangulate the relationships in the factor analyses; and
4. To use Analysis of Variance (ANOVA) tests to determine which customer characteristics are significantly associated with the study factors, which is crucial for using the research findings in bank marketing.

The rest of the paper consists of a critical literature review (Section 2); a conceptual model linking the study variables (Section 3); methodology (Section 4), measurement development including content validity (Section 5); empirical analysis and results by specific research objectives (Section 6); discussion of the theoretical and managerial implications of the results (Section 7); and conclusion, limitations and suggestions for future work (Section 8).



## 2. Literature Review

### 2.1 Digital Banking

The use of technology such as digital banking (DB) in service innovation to meet client needs is best understood through its relationship to the service users and how they perceive the service (Baba, 2012). A theory in marketing studies is a logically self-consistent model that explains how related phenomena behave (Lee and Greenley, 2008). Marketing theory and models explore how some intrinsic and extrinsic factors shape customers' service perceptions and firms' profitability (Grönroos, 1982); for example, Service Profit Chain (SPC) model (Heskett et al., 2008) and NPS (Reichheld, 2003) indicate that improving customer service attributes can improve profitability. Davis et al. (1989) postulate that perceived ease of use and usefulness factors influence customers' behaviour in using new technology. In Jordanian banks, perceived usefulness, trust, and self-efficacy are predictors of customers' use of telebanking (Alalwan et al., 2016), but generally in DB experience contexts, different factors may be applicable, which need to be explored.

Telephone, internet and mobile have become major DB service channels, making them important for banks' survival, through the advantages of convenience, and anytime, anywhere service access (Sundarraaj and Wu, 2005; Daniel, 1999; Mols, 2001). Some researchers argue that e-banking services facilitate good customer services, which retain customers (Martins et al., 2014). These three digital devices offer different interfaces and choices to customers, with telephone banking being the earliest. There have been fragmented studies in DB, with authors studying individual channels or focusing attention on only few variables among those explored in this paper. Amin (2016) and Raza et al. (2015) study internet banking service quality and its relationship to customer loyalty, while Jun and Palacios (2016) study mobile banking service quality. Although this type of study offers advantages in certain contexts, a comprehensive study is required to understand customers' general view of DB experience and financial performance.

DB enables banks to develop services for customers, cut costs associated with sending statements by post and face-to-face transactions with customers in branches. Nowadays, customers expect to have similar levels of interactions in DB and social media (Dootson et al., 2016). As customers increasingly accept DB, more than six hundred UK bank branches have

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4 closed, with rural areas worst affected (BBC, 2016; French et al., 2013). The impact of DB  
5 becoming dominant on customer experience, operational efficiency and financial performance  
6 and marketing are still not clear, hence this paper.  
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11 Although DB is technology related, it is service-oriented, making service marketing theories  
12 important in its conceptualisation (Van Looy et al., 1998). Previous studies are focused on  
13 factors influencing users' intentions to adopt internet and mobile banking respectively (Martins  
14 et al., 2014 and Zhou, 2012). These studies relate more to DB acceptance than experience and  
15 may not fulfil the current banking marketing needs. Alternative studies note that internet banking  
16 derives from unique service and functional qualities (Kaura et al., 2015; Monferrer-Tirado et al.,  
17 2016). Similarly, Lee and Chung (2009) indicate that good user interface quality affects trust in  
18 and satisfaction with mobile banking. These perspectives are investigated further through  
19 customers' opinions.  
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29 Consequently, Hoehle et al. (2012) note that whilst the utilisation of DB channels has grown  
30 substantially, prior study has not identified all the customer-related issues, and may be limited  
31 due to fragmented findings and methods of study. Hence, this paper presents a more  
32 comprehensive study of the landscape of UK DB linked to customer experience, financial  
33 performance and service marketing. This approach supports more robust theory development  
34 than was possible in previous studies.  
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## 40 41 *2.2 Customer Experience and Financial Performance*

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43 Different theories and models for measuring customer satisfaction and organisational  
44 performance have emerged (e.g. NPS (Reichheld, 2003); SERVQUAL (Parasuraman et al.,  
45 1988); SPC (Heskett et al., 2008)). The SPC model establishes the relationships between service  
46 quality, employee job satisfaction (employee retention and productivity), customer satisfaction  
47 and loyalty, and organisational performance (revenue growth and profitability). Kanyurhi and  
48 Akonkwa (2016) used the SPC model in Congo banks and found a positive relationship between  
49 internal marketing and employee satisfaction, and a positive relationship between internal  
50 marketing and perceived organisational performance, but not between employee satisfaction and  
51 perceived organisational performance.  
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4 The NPS gauges the level of customer satisfaction and loyalty to a firm, using a single question,  
5 while SERVQUAL measures service qualities using reliability, tangibles assurance,  
6 responsiveness and empathy, without demonstrating their direct relationship to profitability. In  
7 DB, new models are required, as customer priorities in contact services may not be applicable,  
8 for example courtesy, friendliness and personal care. Hence, new service quality measures that  
9 moderate customer satisfaction in DB have emerged (Jun and Palacios, 2016; Amin, 2016;  
10 Dootson et al., 2016). Since this study utilises some service quality measures (experience,  
11 satisfaction and loyalty), it will contribute new knowledge on any significant relationships they  
12 may have with digital bank marketing and financial performance.  
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21 Customer experience encompasses a set of interactions (e.g. rational, emotional, sensorial,  
22 physical, and spiritual) between a customer, product and company, the value created through that  
23 set of interactions (Meyer and Schwager, 2007; Verhoef et al., 2009; Klaus and Maklan, 2013),  
24 and customers' purchasing behaviour (Klaus and Maklan, 2013). Customers compare their  
25 service expectations and their experiences interacting with firms' offerings during different  
26 service contacts. By focusing on a few factors at a time, previous studies do not provide a strong  
27 enough evidence base for constructing more robust theories of the links among customer  
28 experience attributes, different financial performance measures (FP1 and FP2), and bank  
29 marketing.  
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39 With regards to customer experience measures, Meyer and Schwager (2007) advocate the use of  
40 NPS, which captures the net result of good experience minus bad experience of what customers  
41 know about a firm. They conclude that customer satisfaction occurs when the gap between  
42 customers' expectations and experiences has been closed. Thus, banks should constantly seek the  
43 opinion of customers about their DB to improve their experience. The above mentioned link  
44 between customer experience and purchasing behaviour suggests that customer experience is  
45 mediated by marketing to improve customer satisfaction and loyalty, and their impacts on an  
46 organisation's financial performance. As argued above, these aspects of DB have not received  
47 detailed attention in the literature on bank marketing and financial management, hence this  
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4 Importantly, Maklan and Klaus (2011) recommend that researchers should explore which  
5 dimensions of customer experience are important for organisational performance. This will  
6 enable bank marketing to maximise financial performance, through customer experience, loyalty  
7 and satisfaction, and share-of-wallet. Their study was conducted in contact services and may not  
8 fulfil the needs of DB. However, it reinforces the need to explore significant relationships among  
9 customer characteristics and the various explanatory and dependent variables used in this study,  
10 since these clarify customer experiences that will support successful digital bank marketing (see  
11 objective 4 above).  
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20 Most research in customer experience explores consumer perceptions (Holbrook, 2000) and  
21 customer experience management (CEM) (Schmitt, 2004). Berry et al. (2002) suggest that the  
22 first step in CEM should be defining all the clues that a firm communicates to customers, to  
23 determine whether the company is meeting them. Findings in this paper could provide clues on  
24 interface design, functionality, usability and quality of service, from customers' experience of  
25 DB, areas that have previously received limited attention.  
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### 32 *Linking Customer Experience to Financial Performance*

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34 Improved customer experience can offer values to both firms and customers, such as enhanced  
35 customer satisfaction and loyalty to organisations' offerings, positive word-of-mouth referrals  
36 (e.g. captured by NPS), improved retention, reduced complaints and fines, all of which can  
37 improve profitability (Reichheld et al., 2000). In sum, using NPS categories to link customer  
38 experience (satisfaction, loyalty, and behavioural intentions, such as how strongly customers will  
39 recommend products to others) to profit, has become popular in measuring organisational  
40 performance, but has not been widely replicated in DB. Dootson et al. (2016) note that perceived  
41 usefulness, economic value, and social value predict overall perceived value, which in turn  
42 predicts a customer's intention to use social media to interact with a bank. However, a major  
43 limitation of previous research in DB is showing how this type of value improves financial  
44 performance, instead of a predominant focus on service quality, satisfaction and loyalty (Jun and  
45 Palacios, 2016; Amin, 2016). This paper fills this gap in knowledge through DB in the UK.  
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4 Recent studies on satisfaction, loyalty and financial performance concentrate attention on  
5 traditional banking. Keisidou et al. (2013) found no relationship between customer satisfaction,  
6 loyalty and financial performance in Greek banks, but Chi and Gursoy (2009) found a  
7 relationship between customer satisfaction and financial performance in USA hospitality sector.  
8 Liang et al. (2009) found that product attributes impact on customer satisfaction,  
9 trust/commitment and customer loyalty, and financial performance in Taiwanese banks, again  
10 not in DB contexts. Given the conflicting evidence of the links between customer experience  
11 variables and financial performance in these various contexts, this paper presents much-needed  
12 evidence of these effects in UK DB.  
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### 21 *Measuring Customer Experience and Financial Performance*

22 Brakus et al. (2009) developed a four-dimensional brand experience scale using measures such  
23 as sensory, affective, intellectual and behavioural, highlighting the positive relationship between  
24 brand experience, brand personality, satisfaction and loyalty. However, Novak et al. (2000)  
25 propose online customer experience instruments with constructs such as web usage, arousal,  
26 challenge, control, exploratory behaviour, flow, focused attention, interactivity, involvement,  
27 playfulness, positive effect, skill, telepresence and time distortion. Although these instructions  
28 are useful, some do not relate to DB (e.g. playfulness). Garg et al. (2014) investigate customer  
29 experience in their model and found convenience to be the most important factor, followed by  
30 customer interaction, employees, speed, servicescape, core service, online functional elements,  
31 presence of other customers, value addition, service process and online aesthetics, while the  
32 marketing-mix, customisation and online hedonic factors are moderately significant. These  
33 findings relate to a prior study (Al-Eisa and Alhemoud, 2009), that focused on measuring  
34 customer satisfaction in Kuwait banks. Garg et al., (2014) consider both online and offline  
35 activities (e.g. Servicescape), which relate to the physical environment of services, while DB  
36 experience should involve direct customer interaction through the online interface. This study  
37 considers factors which are related to online activities only.  
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53 Researchers tend to study customer experience with customer satisfaction and loyalty; Saleem et  
54 al. (2016) note that social influence, market orientation and service quality relate to customer  
55 loyalty, with satisfaction as an antecedent, and advise that banks should invest resources to  
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4 enhance customer satisfaction and loyalty. Similarly, Akhter et al. (2011) indicate that customer  
5 loyalty is positively related to customer satisfaction, product image, trustworthiness and  
6 customer relationship. Both studies were carried out in Pakistan banks, which is different from  
7 the UK context for which the factors affecting satisfaction and loyalty can vary. Fathollahzadeh  
8 et al. (2011) study the online and offline effects of satisfaction, co-operation, trust, commitment,  
9 service quality, complaint handling, image and communication in Iranian banking and find that  
10 all eight variables have a significant relationship with customer satisfaction, which can lead to  
11 customer loyalty. Nevertheless, customer satisfaction is an aggregate of past consumption  
12 experience, and gives a limited prediction of future customer behaviour, while loyalty offers a  
13 better predictor of repeat purchasing intention (Liang et al., 2009). Thus, both variables are  
14 studied in this paper, since they offer different customer perspectives.  
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25 For studies that combine a number of factors, Klaus and Maklan's (2013) measurements of  
26 customer experience comprise six measures, namely convenience, retention, service recovery  
27 (part of service quality), risk perception, satisfaction and loyalty intentions, while Liang et al.  
28 (2009) use three factors which are antecedents of trust, loyalty and financial performance. These  
29 authors' research instruments are not all related to DB. Keisidou et al. (2013) investigate the  
30 relationship between three factors: customer satisfaction, loyalty, and financial performance.  
31 They used financial ratios to measure financial performance of banks (e.g. Return on Assets  
32 (ROA) or Investment (ROI), Net Profit Margin (NPM), and Return on Equity (ROE)).  
33 Methodologically, some of the above measures are not commensurate across the banks when  
34 they are not stated in percentages, which is a limitation; therefore, this study uses percentage  
35 measures of ROE, Net Interest Margin (NIM) and Cost-to-Income ratio. Chang and Lin (2015)  
36 developed a customer experience framework in the Taiwanese leisure industry, using  
37 experiential value which customers derive from services. This study incorporates perceived value  
38 in the analysis of customer perceptions of UK DB.  
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51 In sum, previous studies have not sufficiently integrated customer experience and financial  
52 performance in DB. Instead of the limited factors typically used in previous studies, this paper  
53 uses 14 key factors to provide a more detailed understanding of their relationships and impact on  
54 bank marketing and financial performance. As argued above, this more holistic perspective has  
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not been attempted in previous studies. The following conceptual model summarises the selected variables and notations used.

### 3. Conceptual Model for the Research

Figure 1 illustrates the research conceptual model. In the model, 'em' symbolises the dependent variable while the rest are independent variables, 'BK' means Banking, 'Egt' Engagement and H is Hypothesis. Many of these hypotheses are secondary exploratory hypotheses, whilst the primary research hypotheses relate to the links among customer experience (satisfaction and loyalty), bank financial performance and marketing.

#### **INSERT FIGURE 1 HERE**

In Figure 1, nine independent variables are linked to customer experience through nine exploratory hypotheses, H1-H9; customer experience and the remaining three dependent variables – customer satisfaction, loyalty and financial performance (FP1 and FP2 measures) linked through six primary hypotheses, H10-H15. The model encompasses 14 factors gleaned from the literature to be appropriate for DB and 15 testable hypotheses. Further rationale for the hypotheses development is provided below.

#### *3.1 Research Hypotheses Development*

*Perceived Value:* Perceived value is defined as the trade-off between costs and benefits of performing a behaviour (Dootson et al., 2016). It is an important determinant of behavioural intentions to use e-commerce (Ko et al., 2009; Piyathasanan et al., 2015), and a key factor for banks (Keisidou et al., 2013; Liang et al., 2009; Garg et al., 2014; Fathollahzadeh et al., 2011), and the leisure industry (Chang and Lin, 2015). However, limited attention has been given to it in UK DB. We therefore frame an exploratory hypothesis linking perceived value and customer experience, namely:

*H1.* There is a positive relationship between Perceived Value and Customer Experience.

*Convenience:* Convenience is rarely researched alongside customer experience; however, it has a positive effect on customer satisfaction (Keisidou et al., 2013; Knutson et al., 2007; Kim et al.,

2011; Karatepe et al., 2005) and customer experience (Garg et al., 2014; Klaus and Maklan, 2013) relating to offline and online activities. Jun and Palacios (2016) see convenience as one of the key service qualities of mobile banking in the USA. Wu (2011) investigates the location convenience effect on customer satisfaction, while Keisidou et al. (2013) tested the operational and locational characteristics of convenience. In this study, operational convenience of DB is tested:

*H2.* There is a positive relationship between Convenience and Customer Experience.

*Functional Quality:* This deals with the functionality aspect of online systems, its activities and interactivity components, which affects customer experience (Garg et al., 2014). Functional quality influences users' uptake of mobile banking (Lee and Chung, 2009) and customer satisfaction (Keisidou et al., 2013), and customer satisfaction and trust, and loyalty in Spanish banks (Monferrer-Tirado et al., 2016). These effects need to be tested in UK banks:

*H3.* There is a positive relationship between Functional Quality and Customer Experience.

*Service Quality:* Service quality is widely tested in banks, hotels and insurance companies employing SERVQUAL (Parasuraman et al., 1988), which differs slightly in DB. In banking, service quality is found to increase customer satisfaction (Keisidou et al., 2013; Kaura et al., 2015) and profitability (Ladhari et al., 2011). It mediates overall satisfaction, which is an antecedent of loyalty (Levy and Hino, 2016). Jun and Palacios (2016) study mobile banking service quality in USA, while Amin (2016) and Raza et al. (2015) study internet banking service quality and its relationship to customer satisfaction and loyalty in Saudi Arabia and Pakistan, respectively. The authors found that service quality significantly impacts on satisfaction and consequently leads to loyalty. However, there is limited research on service quality as a concept in DB services marketing in UK, hence the following hypothesis:

*H4.* There is a positive relationship between Digital Bank Service Quality and Customer Experience.

*Brand Trust:* Brand credibility is the level at which the service proposition information is considered to be believable (Keisidou et al., 2013). Brand, trustworthiness and image have been researched in studies and found to affect customers' bank choices (Liang et al., 2009;



Fathollahzadeh et al., 2011; Knutson et al., 2007; Akhter et al., 2011). Levy and Hino's (2016) study found that attachment to brand positively affects bank loyalty. This study explores brand trust in UK banks via the hypothesis:

*H5. There is a positive relationship between Brand Trust and Customer Experience.*

*Employee Customer Engagement (ECE):* Bank employees have interactions with customers and are the most important link in service delivery and complaint handling processes (Karatepe and Aga, 2016). They need to be friendly, competent, capable of sustaining interpersonal distance (Garg et al., 2014; Verhoef et al., 2009), and in building trust and influencing customer behaviour. Employees' attributes influence firms' business performance in non-DB environment (Grace and O'Cass, 2004; Karatepe et al., 2005), and customer satisfaction and profit (Yee et al., 2010). Customer satisfaction is largely influenced by service quality, which depends on employee job satisfaction in contact services (Chi and Gursoy, 2009; Kanyurhi and Akonkwa, 2016). However, the relevance of ECE in DB experience is tested:

*H6. There is a positive relationship between ECE and Customer Experience.*

*Perceived Risk:* Jun and Palacios (2016) found security as one of the key factors that affects service quality of mobile banking, while perceived risk is found to affect DB uptake in other countries (Martins et al., 2014; Akinci et al., 2003; Hanafizadeh et al., 2014). Banks are constantly investing in security to minimise risks; the following hypothesis is explored:

*H7. There is a negative relationship between Perceived Risk and Customer Experience.*

*Perceived Usability:* DB is about customers' electronic interface with a bank. Usability is one of the key elements that determines mobile banking uptake (Gu et al., 2009), and e-commerce business customer experience (Klaus, 2013). A study of Jordanian banks found that perceived usefulness, trust, and self-efficacy are predicting factors to use of telebanking (Alalwan et al., 2016). This is tested in the context of DB experience thus:

*H8. There is a positive relationship between 'Perceived Usability' and Customer Experience.*

*DB Innovation:* Banks benefit from interactive service innovations (Dootson et al., 2016; Berry et al., 2010), which offer better ways of doing things for customers and improve performance

(Hult et al., 2004). Patsiotis et al. (2012) suggest that understanding the impact of innovation on different categories of adopters and non-adopters is of potential value to banks. Similarly, technology innovation focused on customers is important for organisations, because customers need to use the innovation to make it valuable to both parties (Arts et al., 2011). However, there is limited study of customers' perceptions on innovation, and how it impacts DB experience. Baba (2012) notes that focusing on specific innovation contributes more to performance (growth in market share) than adopting different innovations at the same time. The relationship in innovation is tested thus:

*H9.* There is a positive relationship between DB Innovation and Customer Experience.

*Customer Satisfaction, Loyalty and Experience:* Different definitions of customer experience have been given by Klaus and Maklan (2013) and Verhoef et al. (2009), while Liang et al. (2009) suggest that customer satisfaction is overall customer experience. Studies in customer experience and loyalty are limited, but what leads to customer satisfaction has been tested in hospitality (Chi and Gursoy, 2009), internet banking (Amin, 2016; Raza et al., 2015), and mobile banking (Jun and Palacios, 2016) areas. Although these studies were conducted in different countries, the antecedent of customer loyalty has predominantly been tested using customer satisfaction, rather than customer experience. Klaus and Maklan's (2013) framework investigated customer experience, satisfaction and loyalty in high contact mortgage environment in the UK. This research tests the effect of DB experience, which is contactless, through the hypotheses:

*H10.* There is a positive relationship between Customer Experience and Satisfaction

*H11.* There is a positive relationship between Customer Experience and Loyalty.

*Customer Experience, Satisfaction and Loyalty, and Financial Performance:* Keisidou et al. (2013) investigate the relationship between customer satisfaction and loyalty, and financial performance using ROA or ROI; NPM and ROE, while Anderson et al. (1994) used ROI. Chi and Gursoy (2009) asked hotel managers to rate their financial performance in comparison to their competitors in terms of profitability, ROI and net profit. Undoubtedly, different research aims call for different measures; some authors have approximated profitability through loyalty. Reichheld et al. (2000) claim that improving product quality enhances customer loyalty and profit through cross-buying, recommendations and low servicing cost, while Heskett et al. (2008)

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4 suggest that an increase in customer satisfaction and loyalty can boost profitability. This  
5 argument has linked customer loyalty to profit through Customer Lifetime Value (CLV) – profit  
6 attributable to a customer throughout their lifetime with a firm (Reichheld et al., 2003;  
7 Valenzuela et al., 2014). The links between satisfaction and loyalty, and financial performance  
8 have been studied, and need to be tested in DB experience, using financial ratios (ROE, Cost-to-  
9 Income ratio and NIM as FP1) and NPS value (the loyalty effect on profit through CLV as FP2).  
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11 The underpinning hypotheses are:

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16 *H12.* There is a positive relationship between Customer Experience and Financial Performance.

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18 *H13.* There is a positive relationship between Customer Satisfaction and Financial Performance.

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21 *H14.* There is a positive relationship between Customer Loyalty and Financial Performance.

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24 *Customer Satisfaction and Loyalty:* Limited customer loyalty studies have been conducted in  
25 DB. Researchers who study satisfaction and loyalty do not always consider customer experience.  
26 For instance, the effect of service quality on customer satisfaction and loyalty have been  
27 investigated (Levy and Hino, 2016; Kaura et al., 2015; Ladhari et al., 2011), while Saleem et al.  
28 (2016) study the effect of customer loyalty, with customer satisfaction as the moderator. There is  
29 a positive relationship between customer satisfaction and loyalty in Greek banks (Keisidou et al.,  
30 2013) and in other banking studies (Fathollahzadeh et al., 2011; Klaus and Maklan, 2013). These  
31 studies suggest that customer satisfaction can lead to customer loyalty, which needs testing in  
32 DB. Therefore, we propose the hypothesis:

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43 *H15.* There is a positive relationship between Customer Satisfaction and Loyalty.

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#### 4. Methodology

This research used a web-based questionnaire method supported by e-mail (Ritter and Sue, 2007; Kwak and Radler, 2002), and was conducted at Sheffield Hallam University, UK. A web-based tool called Bristol Online Survey (BOS, 2015), developed at Bristol University for higher education research was used to design the questionnaire. Prior to sending out the main questionnaire, a pilot survey to assess validity and correct errors was conducted. The questionnaire URL link was sent to 10 selected respondents from each of the sample strata to get their feedback and ensure the expected data would address the research objectives. Their

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4 feedback was used to reshape the questionnaire, remove ambiguity and make sure the questions  
5 were understandable. A total of 49 questions were asked after the pilot survey.  
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9 A total of 680 participants comprising 50 lecturers and 200 students from Sheffield Hallam  
10 University; 180 staff from two large UK companies known to the researchers; and 250  
11 candidates from the researchers' social media contacts (professional LinkedIn) participated. The  
12 questionnaire's URL was sent to the selected respondents via e-mail and social media messenger  
13 in 2016. The survey was open for three months. The sample profile comprised adults over the  
14 age of 18, living in the UK and having an account with a major UK retail bank. The sample  
15 includes customers from different backgrounds. The questionnaire asked participants about the  
16 nature of customer experience and the impact DB has on their lives. For example, whether they  
17 enjoy it, find it convenient, what makes their experience with digital banking services good or  
18 bad, the quality of DB received from their banks or whether it is reliable and accessible enough.  
19 Table I shows the information on each measurement instrument.  
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30 All questions with the exception of NPS and customer profile were measured on a 5-point Likert  
31 scale and of the questionnaires administered, 206 usable questionnaires were returned giving a  
32 return rate of 30.29%. The data were processed with SPSS and SEM, AMOS software version  
33 23. The customers were asked an 11-point Likert scale question for measuring NPS and  
34 estimating CLV, recommended by Reichheld (2003).  
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41 The research selected six UK banks with public access to their financial status and extracted 3-  
42 year financial ratios from their financial reports. The NPS evidence from customers was used to  
43 test for relationships between DB customer experience and the banks' financial performance  
44 based on their key financial ratios and NPS. For financial ratios, ROE, NIM and Cost-to-Income  
45 ratio were used, with NPS of respondents from the six banks. All banks used are regulated by the  
46 Financial Conduct Authority (FCA, 2015).  
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## 52 53 **5. Measurement Development**

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55 To construct the questionnaire items, the existing literature was studied extensively. This was  
56 complemented with an 'Idea Tournament' exercise, in which the research team conducted a  
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4 debate around the research objectives, to ensure that crucial aspects of the study were covered.  
5 This ensured that enough questions were asked to measure the study factors and support the  
6 hypotheses. Table I shows the items used to measure the model factors.  
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### 10 11 *5.1 Definition of Items and Content Validity*

12 Content validity ensures that the questionnaire items are valid and a thorough review of the  
13 existing literature and a confirmatory pilot test involving another group of respondents was  
14 carried out (Keisidou et al., 2013). This helps to improve framing of the questionnaire items, so  
15 they are understood by different respondents. Factor analysis was used to reduce questionnaire  
16 data into principal components that can produce the information required for the study and  
17 testing the model hypotheses. Table I summarises the dimensions, related literature, items and  
18 definitions of the 14 factors described in the hypotheses development section.  
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27 **INSERT TABLE I HERE**  
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## 30 31 **6. Empirical Analysis Results**

32 The results are presented in line with the research objectives as follows.  
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### 36 37 *6.1 Respondents' Profile and Frequency Results*

38 *Objective 1: To provide exploratory data analyses of the study factors.*

39 Table II presents descriptive analysis of the customer profile data obtained. It shows the results  
40 of some important questions as percentages and frequencies of data distribution, approximated to  
41 the nearest integer percentages as follows.  
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50 The results show a gender distribution of 70% males and 30% females, which enable the results  
51 to accommodate male and female opinions. About 87% of the respondents fall into the 25-54 age  
52 group of active earners. About 96% of the respondents have college and university level  
53 education which makes them literate enough to use DB effectively. The results also indicate that  
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4 88% of participants are customers of one of the six major UK banks, which means that their  
5 responses relate to their experience of UK DB.  
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9 Most of the customers have used DB for between 1 to 5 years (40.80%), followed by 6 to 10  
10 years (37.90%), and then 11 years and above (14.60%). This indicates that DB trend has gone up  
11 in the last 10 years, showing the change in customers' behaviour. Overall, about 93% of the  
12 respondents have used DB at least one year and 15% at least 11 years, which shows high uptake  
13 of DB noted in the literature. In terms of customer loyalty, 28% of the respondents have stayed  
14 loyal to their banks for 1-5 years, 67% for more than 6 years and 5% for less than a year.  
15 Conservatively, banks that significantly enhance their customers' banking experiences can attract  
16 less loyal customers, especially those 28% in the first category.  
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25 In terms of DB channels usage, the order of prevalence is internet (51%), mobile (33%) and  
26 telephone (15%). Other types of DB accounted for 6%. The use of telephone banking therefore  
27 seems to be on the decline, while internet and mobile banking are on the increase. Many  
28 customers use DB on a weekly basis (49.50%), followed by daily (34.00%) and monthly  
29 (12.10%). The result also shows that customers use DB to carry out various services: check  
30 balance (16%); fund transfer (15%); current account (14%); pay bills (13%); direct debit (12%)  
31 and standing order (10%). A cross tabulation between Frequency of Use, Age Groups, Length of  
32 Usage, and DB experience (suppressed in this paper) showed there are significant dependencies  
33 among them; this means that bank marketing using these results can target the needs and  
34 preferences of specific customer segments.  
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45 Among the customers surveyed from the UK banks, NPS values consist of 21% Detractors, 41%  
46 Passives and 38% Promoters. These scores were in response to the question '*Based on your*  
47 *experience with DB, how likely is it that you would recommend your bank's DB to a friend or*  
48 *colleague? Mark on a scale of 0 to 10?*' These results show a 62% potential for converting  
49 (digital) bank customers in the UK to the ultimate loyal promoters, if individual banks pay  
50 attention to the customers' needs, and devise appropriate bank marketing strategies (digital and  
51 offline) for exceeding customers' expectations.  
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### *Correlation Analysis of the Factors*

To gauge the nature of relationships among pairs of variables in the study, the 14 factors were cross-correlated as shown in Table III below.

#### **INSERT TABLE III HERE**

The results show strong positive correlations among the factors. For instance, there is a significant positive relationship among 'Perceived Value' and all the remaining variables, namely 'Convenience', 'Functional Quality', 'DB Service Quality', 'Brand Trust', 'Employee Customer Engagement', 'Perceived Risk', 'Perceived Usability', 'DB Innovation', 'Customer Satisfaction', 'Customer Loyalty', and 'Customer Experience'. All factors are significant.

Moreover, the four dependent variables in the study: Customer Experience Quality (CEQ), Customer Satisfaction (CSAT), Customer Loyalty (CLY), and Financial Performance measures (FP1 and FP2) show that they are also strongly correlated with most of the other variables. These results mean that the 14 factors are important mediators of customers' perception of the value they derive from DB, and its impact on financial performance. There is no significant relationship between 'Customer Experience' and 'Financial Performance (FP2)'. This result may mean that the information on Customer Experience is implicit in the strong positive correlations among Customer Experience, Satisfaction and Loyalty (0.68 and 0.72 respectively). In sum, the above results partially confirm most of the research hypotheses earlier developed, but this requires objective tests of significance using Factor and SEM analyses presented below.

### *6.2 Exploratory Factor Analysis Results*

#### *Objective 2: Factor analyses of the data*

Exploratory Factor Analysis (EFA) is performed to assess construct validity, with regard to convergent and discriminate validity (Liang et al., 2009). EFA summarises information from a group of variables into a smaller manageable number by allocating them into distinct factors without significant loss of content and meaning (Hair et al., 1998). It is performed with the method of Principal Component Analysis (PCA) and the Varimax rotation for extracting factors, which assumes factors are not related to each other. Minimum value criteria for deleting items

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4 not meeting criteria are factor loadings (0.50) (Karatepe et al., 2005), cross loadings (0.40) or  
5 communalities (0.30) (Garg et al., 2014). For good factor analysis and sampling adequacy, the  
6 value of Kaiser-Meyer-Olkin (KMO) statistic must be at least 0.60 (Tabachnick and Fidell,  
7 2001).  
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#### 11 *Unidimensionality, Reliability, Convergent and Discriminant Analyses*

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13 The two methods of assessing unidimensionality of factors are EFA and Confirmatory Factor  
14 Analysis (CFA). The CFA is necessary where the structure model does not incorporate  
15 previously examined literature information (Keisidou et al., 2013; Sharma, 1996). EFA was  
16 performed. From the 43 items used, 13 factors were produced. The cross loadings and  
17 communalities > 0.4. The overall KMO is 0.866 and significant with  $p < 0.05$ , showing that  
18 factor analysis is possible on the sample. The KMOs of all composite factors are all greater than  
19 0.6. The result justifies using EFA since all the criteria are met. Table IV shows the factor and  
20 reliability analysis results. Total Variance Explained (TVE).  
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#### 30 **INSERT TABLE IV HERE**

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34 Columns 1-3 of Table IV show how the study factors are loaded on the questionnaire items that  
35 significantly describe them with factor loadings greater than 0.50. This gives a clue to the  
36 customer experiences and expectations, which determine the factors. For example, the 'Perceived  
37 Value' variable is significantly associated with Qs 3, 6, 8 and 36 in the questionnaire, namely  
38 'saves money', 'saves time', 'usefulness', 'enjoyment', and 'better deal online'. Table I  
39 summarises these descriptors as useful evidence for bank marketing strategies.  
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47 *Reliability item analysis* refers to the internal consistency of the factors (Chu and Murrmann,  
48 2006), which is measured using Cronbach's coefficient  $\alpha$  (Fornell and Larcker, 1981; Churchill,  
49 1979). For all factors, coefficient  $\alpha$  was computed and all values range from 0.706 to 0.893. The  
50 values of  $\alpha$  exceed the minimum 0.7 score (Nunnally, 1978) and 0.6 reported in Garg et al.  
51 (2014). The result shows a construct reliability which indicates internal consistency. Therefore,  
52 improving the value of  $\alpha$  for each cluster of items is not required. The results show the  
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4 unidimensionality of the measures, as each item is related to only one fundamental construct  
5 (Garg et al., 2014; Gerbing and Anderson, 1988).  
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9 *Convergent validity* is the degree to which several methods of measuring a factor provide the  
10 same output (Keisidou et al., 2013). The acceptable value of convergent validity is 0.5 for all  
11 items loading, while Garg et al. (2014) added that all items should load to only one factor with an  
12 eigenvalue  $> 1$ . All items loaded to their predestined factor with an eigenvalue  $> 1$ . In Table IV,  
13 all items bear loadings  $> 0.5$ , which complete the criteria for convergent validity. Convergent  
14 validity is also examined by identifying whether the maximum likelihood loading of each  
15 indicator is significant for its underlying construct (Peter, 1981). Results also show that all  
16 loadings  $> 0.5$ , KMO is significant ( $p < 0.05$ ) and TVE values ranges from 50.80 to 82.42. This  
17 means that more than half of the variance is extracted. All items in Table IV are significant ( $p <$   
18  $0.05$ ). The NPS Detractors, Passives and Promoters range from 15.29 to 17.49, 34.63 to 38.73  
19 and 32.68 to 36.93 respectively for the 6 banks. The TVE values, factor loadings above 0.5,  
20 coupled with the range of t-values also prove convergence of factor items (Garg et al., 2014).  
21 All these indicate good convergence validity between the items within the instruments.  
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34 *The discriminant validity* is about dissimilar constructs and items used in factor analysis being  
35 different (Keisidou et al., 2013). Table III was also constructed for meeting these criteria, so the  
36 correlation coefficients of the factors along the diagonal are compared with Cronbach's  $\alpha$  values.  
37 Churchill (1979) and Keisidou et al. (2013) state that Cronbach's values of the factors should be  
38 higher than the correlation values, indicating that the correlation among the factors is lower than  
39 Cronbach's  $\alpha$ . The correlation values are below the maximum Cronbach's  $\alpha$  of 0.893. The result  
40 confirms discriminant validity criterion.  
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### 48 6.3 Structural Equation Modelling

49 *Objective 3: SEM of factors links and test of subsidiary and primary hypotheses.*

50 The factor-related data were analysed using Multivariate techniques (e.g. Correlation and SEM  
51 analyses). They have the ability to simultaneously examine a number of dependent linear  
52 relations, where one or more constructs (variables) are both dependent and independent (Hair et  
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4 al., 1998). Most of the variables depend on each other as shown in the correlation analyses, for  
5 which reason each can serve as a predictor of the other.  
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9 SEM technique was used to examine the model factors, as it has the ability to test and draw  
10 relationships on the paths of a model. The most commonly used model fit measures in SEM are:  
11 Chi-square/degree of freedom ( $\chi^2/df$ ), Goodness of Fit Index (GFI), Comparative Fit Index  
12 (CFI), Tucker Lewis index (TLI), Normed Fit Index (NFI), Incremental Fit Index (IFI) and Root  
13 Mean Square Error of Approximation (RMSEA) (Keisidou et al., 2013; Garg et al., 2014). Table  
14 V presents the overall fit values of the model obtained by examining the causal relationships  
15 among the factor variables, which indicates a moderately good fit for both PF1 and PF2. All  
16 demonstrated good fit except  $NFI < 0.9$ . Table V shows the SEM parameters for the model fit  
17 for FP1 and FP2.  
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30 Table V shows the path loadings for the SEM model fit for FP1 ( $\chi^2/df$ ) = 2.11, P = 0.00, CFI =  
31 0.907, TLI = 0.901, NFI = 0.862, and RMSEA = 0.068. The model fit for FP2 ( $\chi^2/df$ ) = 2.09,  
32 p = 0.00, CFI = 0.911, TLI = 0.906, NFI = 0.864 and RMSEA = 0.065.  
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37 Figure 2 shows SEM of the factors using financial ratios as FP1 indicators, along with path  
38 coefficients.  
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46 Figure 3 shows the SEM of the factors using NPS (CLV) as FP2 indicators.  
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54 Table VI shows the SEM test results for all the factors against Customer Experience as the  
55 dependent variable while other factors are independent variables for FP1 and FP2. There are two  
56 types of financial performance tests in the Model, hence (a) and (b). H = Hypothesis  
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4 **INSERT TABLE VI HERE**  
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7 Table VI shows, for instance, there is a significant positive relationship between ‘Perceived  
8 Value’, ‘Functional Quality’, ‘DB Service Quality’, ‘Employee Customer Engagement’,  
9 ‘Perceived Risk’, ‘Perceived Usability’, and ‘Customer Experience’. ‘Convenience’, ‘Brand  
10 Trust’ and ‘DB Innovation’ were not significant predictors. There is a significant positive  
11 relationship between ‘Customer Loyalty’ and both ‘FP1’ and ‘FP2’ respectively. These types of  
12 relationships generate the list of accepted and rejected hypotheses. These accepted hypotheses  
13 are the significant results that should inform bank marketing strategies. For example, to improve  
14 Customer Experience, banks should consider the factors listed above, especially the sets of  
15 accepted hypotheses on factors which influence ‘Customer Experience’. This applies to other  
16 hypotheses in the table.  
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#### 25 26 27 *6.4 Customer Experience Factors against Customer Demographics*

##### 28 *Objective 4: ANOVA tests on study factors and customer characteristics*

29 The section applies a one-way ANOVA test to identify the relationship between respondents’  
30 profile variables and 12 factors in the model. These tests help to identify how the factors are  
31 affected by different bank types and customer profiles. Table VII shows the results.  
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37 **INSERT TABLE VII HERE**  
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41 For Perceived Value (PV), for example, Table VII shows that it is significantly affected by  
42 customers’ age, type of bank, frequency of DB usage, and NPS value. All the factors are  
43 generally affected by most customer characteristics, apart from Educational Level and Gender.  
44 This shows that all the influencing customer characteristics are potential inputs into bank  
45 marketing strategies aimed at influencing customers’ perceptions of the study factors, with the  
46 factors linked to accepted hypotheses above probably more important to focus on.  
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## 53 **7. Theoretical and Managerial Implications of Results**

54 This section summarises the results in light of the research objectives and implications for bank  
55 marketing. The results in objective 1 show that digital banking (DB) experience in the UK differs  
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4 by customer characteristics, hence bank marketing strategies aim to satisfy the customers need  
5 by targeting specific segments. Objective 2 results show the different questionnaire items and  
6 underpinning customer expectations, which moderate DB variables, thereby providing further  
7 evidence base for constructing appropriate bank marketing strategies referred to above. Objective  
8 3 results provide the sets of positive hypotheses linking Customer Experience to the first nine  
9 factors, and importantly Customer Experience and other dependent variables in the study:  
10 Customer Satisfaction, Loyalty and Financial Performance (FP1 and FP2). New SEM Path  
11 analyses generated additional hypotheses linking some of the explanatory factors to each other.  
12 These provide handles on plausible bank marketing strategies to consider in order to enhance  
13 customers' DB experience. Finally, objective 4 ANOVA test results show how different DB  
14 experience factors are affected by different customer characteristics. This reinforces the evidence  
15 base for future bank marketing approaches suggested above.  
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27 Theoretically, the research produces FP1 and FP2 from SEM and Factor-based models which  
28 will support further research in DB, customer experience and financial performance, in the UK,  
29 given that no such studies were previously done along these lines, with few outside the UK  
30 (Keisidou et al., 2013; Amin, 2016; Kaura et al., 2015; Jun and Palacios, 2016). Specifically,  
31 while there are other studies in contact service marketing from different perspectives and  
32 countries (Liang et al., 2009; Ladhari et al., 2011), and customer experience (Klaus and Maklan,  
33 2013), the results in this paper provide UK-based influences on DB customer experience through  
34 the relevant hypotheses. Furthermore, the research established the factors that affect 'Customer  
35 Experience', namely 'Functional Quality', 'Employee Customer Engagement', 'Service Quality',  
36 'Perceived Usability', 'Functional Quality' (e.g. better interfaces), 'Perceived Risk' (e.g.  
37 security), 'Perceived Value' (e.g. being useful, cost savings) and the 'Perceived Usability' (e.g.  
38 ease of use) of DB. The managerial implication is that to improve DB experience, banks should  
39 pay attention to these factors, while theoretically they can serve as building blocks for further  
40 research.  
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53 The research established links between these factors and customer profile data, for example,  
54 'Perceived Value', 'Perceived Usability' and 'Convenience' have relationships with customers'  
55 'Frequency of DB Usage', showing the three factors can determine whether customers use DB  
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4 very often or not. Full results are demonstrated in Table VII. This result will help banks in  
5 customer acquisition and retention, and strategic marketing of products, so certain customer  
6 segments can be targeted, based on the factors that are significant to them.  
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11 There are contextual similarities and differences between some findings elsewhere and this  
12 study, which show the need for location-specific studies of DB in support of bank marketing and  
13 financial performance. For instance, Garg et al.'s (2014) results from Indian banks showed that  
14 gender, marital status, age, education level and income have significant relationships with some  
15 factors of customer experience, but this research result shows that customers' DB experience in  
16 the UK does not depend on Educational Level and Gender.  
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23 Result in 'Perceived Value' is consistent with service marketing theory and corresponds to  
24 Dootson et al's (2016) finding that expected value draws customers towards performing an  
25 action. Similar results were found in Greek banks (Keisidou et al., 2013), and in e-commerce  
26 marketing in India (Piyathasanan et al., 2015) and Korea (Ko et al., 2009). This shows that  
27 generally customers are looking for value and therefore managers should be mindful of this.  
28 'Convenience' positively affects customer satisfaction (Keisidou et al., 2013; Jun and Palacios,  
29 2016) and customer experience (Garg et al., 2014; Wu, 2011) in locational activities. This  
30 research finding differs from Jun and Palacios (2016) and Garg et al. (2014), but coheres with  
31 Keisidou et al.'s (2013) finding. There is no consensus among the authors on convenience; it  
32 may be associated more with acceptance and location than operation of DB, as customers can  
33 access it from anywhere.  
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44 'Functional Quality' affects UK customers' DB experience, and customer satisfaction and  
45 loyalty in Spanish (Monferrer-Tirado et al., 2016) and Greek (Keisidou et al., 2013) banks by  
46 incorporating offline activities. Studies on 'Service quality' effect on customer experience are  
47 limited except ones conducted in customer satisfaction and loyalty (Kaura et al., 2015; Levy and  
48 Hino, 2016), and in contact services (Keisidou et al., 2013). Previous studies showed that service  
49 quality affects customer satisfaction and loyalty on internet banking in Saudi Arabia (Amin,  
50 2016) and Pakistan (Raza et al., 2015), and on mobile banking in the USA (Jun and Palacios,  
51 2016). Meanwhile, this research highlighted that service quality affects customer experience,  
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4 and consequently leads to customer satisfaction and loyalty. These results offer further  
5 theoretical and marketing insights across countries in DB.  
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9 Bank employees' attributes were found to be an important link in customer service delivery in  
10 non-DB environments (Karatepe and Aga, 2016; Karatepe et al., 2005; Verhoef et al., 2009; Yee  
11 et al., 2010). In this research, employee customer engagement influences their ability to design  
12 DB that improves customer experience, hence highlighting the relevance of customer feedback  
13 in influencing positive customer behaviour in DB. 'Perceived Risk' result showed a negative  
14 impact on DB experience. Jun and Palacios (2016) also found security to affect service quality of  
15 mobile banking. Perceived risk affects customers' DB behaviour, and should be minimised  
16 through enhanced security. 'Brand Trust' affects customer choices and improves customer  
17 satisfaction and loyalty (Liang et al., 2009; Levy and Hino, 2016), suggesting that brand relates  
18 to satisfaction and loyalty more than DB experience, which is about customers' perceptions  
19 within the application interfaces. Therefore, 'Brand Trust' and customer experience need to be  
20 explored further.  
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32 'Perceived Usability' affects telebanking experience in Jordanian banks (Alalwan et al., 2016)  
33 and e-commerce experience (Klaus, 2013). Similarly, in UK DB, this factor affects bank  
34 customer experience, which extends knowledge in the area. Banks benefit from interactive  
35 service innovations (Dootson et al., 2016), but findings on 'DB innovation' through customers'  
36 perceptions contradict this. Although innovation is important in service development, customers  
37 are more interested in the benefits than the innovation itself. It suggests that DB innovation  
38 should focus on the perceived value customers derive from innovation, and confirms Patsiotis et  
39 al.'s (2012) study which suggests that understanding the impact of innovation on customers is of  
40 potential benefit to banks.  
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49 'Customer Experience' is positively related to 'Satisfaction' and 'Loyalty', as well as  
50 'Satisfaction' being related to 'Loyalty'. The result between customer satisfaction and loyalty  
51 alone relates to Jun and Palacios's (2016) finding on mobile banking study in the USA, and  
52 Amin (2016) and Raza et al.'s (2015) studies of internet banking in Saudi Arabia and Pakistan,  
53 hence showing similarity of customers across countries in terms of customer satisfaction and  
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4 loyalty. Klaus and Maklan (2013) found similar results in UK high contact services using  
5 questionnaires distributed to mortgage and luxury goods customers, but this research  
6 demonstrated customer experience, satisfaction and loyalty moderators in DB, which extends  
7 theory.  
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12 The managerial implications of the results hinge on the above customer experience factors. Bank  
13 managers will know the factors that make a customer accept one bank's DB over another, which  
14 should be considered when implementing DB. Improving these factors can help capture and  
15 retain customers; making them accept DB and stay loyal, leading to financial performance  
16 improvement. Perceived values (e.g. cost saving, better deals, online interaction, enjoyment and  
17 time saving) play a crucial role. To improve customer experience, banks should offer value-  
18 added services, improve service quality, functional quality and security. Bank employees should  
19 constantly engage with customers through feedback to be attuned to their requirements.  
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29 More customers access services through internet banking than other channels, and mobile  
30 banking demand is on the increase while telephone banking demand is declining. This emerging  
31 trend indicates that managers should invest in and focus more on mobile banking services.  
32 Therefore, as more mobile banking technologies emerge, banks will have to balance customer  
33 needs with design and security issues, and ensure that different customers' needs are fulfilled to  
34 improve loyalty. For major services offered through DB channels, checking balance accounted  
35 for the highest transaction, followed by funds transfer, as illustrated in Table II. This helps banks  
36 to know the digital channels to focus on and value-added services to provide, helping them in  
37 strategic service marketing.  
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46 Methodologically, the research uses ROE, Cost-to-Income ratio and NIM as indicators on FP1,  
47 and uses NPS loyalty effect of CLV on FP2. Results showed a significant positive relationship  
48 between 'Customer Loyalty' and 'Financial Performance' on both FP1 and FP2. This indicates  
49 that banks can improve financial performance through offering good DB experience, which  
50 improves loyalty. Loyal customers pay premiums, recommend friends, and require less service  
51 costs and effort to retain. Keisidou et al. (2013) used ROI/ROA, NPM and ROE to test financial  
52 performance. While NPM is good, the measure is not consistent when banks report in different  
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4 currencies. This research used financial indicators reported in percentages, which are consistent  
5 across the six banks. Cost-to-Income ratio was also used due to the impact DB can make on  
6 efficiency savings. Most studies investigated financial performance using financial ratios  
7 (Keisidou et al. 2013; Chi and Gursoy, 2009).  
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12 This research also tested NPS effect on banks' performance in DB, hence contributing to studies  
13 that have attributed loyalty to financial performance (Reichheld, 2003; Valenzuela et al., 2014;  
14 Liang et al., 2009), and offering theoretical link between customer relationship and bank  
15 marketing. Unlike this study, some studies stopped at customer experience, satisfaction and  
16 loyalty, excluding financial performance (e.g. Klaus and Maklan, 2013; Garg et al., 2014; Jun  
17 and Palacios, 2016). The research offers a broader linkage of phenomena in DB experience  
18 which can serve future study.  
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27 The research showed that 'Frequency of Use', 'Age Group', 'Length of Usage' positively affect  
28 DB experience. This implies that customers who use DB frequently are the ones enjoying it,  
29 having a good experience and using it for a long time. The research showed that the uptake of  
30 DB has improved in the last few years due to benefits to both banks and customers. More  
31 customers are using DB than going to the branches, and banks are closing branches as a result  
32 (BBC, 2016; French et al., 2013). That said, banks should consider why some customers do not  
33 use DB frequently and some of the factors that affect customers have been highlighted.  
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## 41 **8. Conclusion**

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43 This paper presented an integrated understanding of customers' perceptions of the links among  
44 digital banking (DB), customer experience, satisfaction, loyalty, two measures of financial  
45 performance, namely financial ratios (FP1) and NPS criteria (FP2), and the implications of these  
46 links for bank marketing. The research demonstrated that banks can improve financial  
47 performance using DB. The overall customers' NPS is positive (16.99), however Passive  
48 customers are more than Promoters. UK banks need to target Passive customers and turn them  
49 into Promoters to improve their NPS using the identified factors, which can help improve  
50 customer experience and financial performance. Customers are looking for value and demanding  
51 more mobile banking services, so banks should be delivering these. The methods and the type of  
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analysis undertaken show the robustness of the developed DB models, which can be used to explore customer experience and financial performance in future studies.

### 8.1 Limitations

This study provides thorough theoretical foundations and robust empirical results, however, it is not free from limitations. There are general issues with the questionnaire research such as a low response rate (Ritter and Sue, 2007). The web-based approach has enabled the research to maintain anonymity and prevent respondents submitting incomplete questionnaires, which is an advantage. There was a 30.29% response rate, which is not unexpected for web-based questionnaires (Kwak and Radler, 2002). The financial data used was taken from the banks' annual reports. Quite often information reported in them is targeted towards shareholders, however previous researchers have found them useful. The research concentrates on UK bank customers.

### 8.2 Future Research

The research needs to be replicated in banks and extended to other countries, for example developing countries in Africa. Africa is one of the up-and-coming continents where mobile payments and DB are beneficial due to the large population living in remote areas. Further research is needed to understand whether there are other factors that affect bank's customer experience and financial performance in those contexts. Extending the research to specific banks and bank employees' perceptions will triangulate the results with those from customers' perceptions. Covering all these additional lines of research will help to develop more robust digital bank marketing theory in future.

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## TABLES TO INSERT INTO THE MAIN PAPER BODY

Table I

Dimensions	Definitions and Literature Evidence	Items
Perceived Value (PV)	Saves money and time, usefulness, enjoyment, better deal online (e.g. Keisidou et al. (2013); Liang et al. (2009); Garg et al. (2014); Fathollahzadeh et al. (2011); Chang and Lin (2015), Dootson et al. (2016))	4
Convenience (CONV)	Comfort, convenience, hassle-free (e.g. Keisidou et al. (2013); Knutson et al. (2007); Karatepe et al. (2005); Garg et al. (2014); Klaus and Maklan (2013); Jun and Palacios (2016); Wu (2011))	3
Functional Quality (FQ)	Interactive, easy to navigate, simple and intuitive (e.g. Keisidou et al. (2013); Garg et al. (2014); Monferrer-Tirado et al. (2016); Lee and Chung (2009))	3
DB Service Quality (DBSQ)	Meeting and exceeding expectations, accessibility, reliability (e.g. Keisidou et al. (2013); Kaura et al. (2015); Levy and Hino (2016); Parasuraman et al. (1988); Ladhari et al. (2011); Amin (2016))	3
Brand Trust (BT)	Staying loyal due to trustworthiness and brand (e.g. Keisidou et al. (2013); Liang et al. (2009); Fathollahzadeh et al. (2011); Knutson et al. (2007); Akhter et al. (2011); Levy and Hino (2016))	3
Employee Customer Engagement (ECE)	Customer Engagement, feedback, interactive support online, understanding requirements (e.g. Karatepe and Aga (2016); Verhoef et al. (2009); Garg et al. (2014); Yee et al. (2010); Karatepe et al. (2005); Chi and Gursoy (2009); Kanyurhi and Akonkwa (2016))	3
Perceived Risk (PR)	Security, cyber attack, fraud (e.g. Martins et al. (2014); Akinci et al. (2003); Hanafizadeh et al. (2014); Jun and Palacios (2016))	3
Perceived Usability (PU)	Ease of use, user-friendly, flexible and simple (e.g. Alalwan et al. (2016); Gu et al. (2009); Klaus (2013))	3
DB Innovation (DBI)	Better services, R&D, improving experience through innovation (e.g. Hult et al. (2004); Patsiotis et al. (2012); Dootson et al. (2016); Arts et al. (2011); Baba (2012))	3
Customer Experience (CEQ)	Overall customer experience, meeting service needs and requirements (e.g. Klaus and Maklan (2013); Garg et al. (2014); Verhoef et al. (2009); Liang et al. (2009))	3
Customer Satisfaction (CSAT)	Overall satisfaction with interface, product and services (e.g. Fathollahzadeh et al. (2011); Keisidou et al. (2013); Klaus and Maklan (2013); Amin (2016); Jun and Palacios (2016))	3



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3	Customer	Staying longer, recommending friends and giving high NPS	3
4	Loyalty (CLY)	(e.g. Keisidou et al. (2013); Liang et al. (2009); Klaus and	
5		Maklan (2013); Reichheld et al. (2003); Levy and Hino	
6		(2016); Amin (2016))	
7			
8	Financial	Financial ratios effect (e.g. Keisidou et al.(2013); Chi and	3
9	Performance	Gursoy (2009); Anderson et al. (1994))	
10	(FP1)		
11	Financial	NPS effect via loyalty and CLV (e.g. Reichheld (2003);	3
12	Performance	Valenzuela et al. (2014); Reichheld et al. (2000); Liang et al.	
13	(FP2)	(2009))	
14			

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Table I. Past studies on Items for Factor Analysis

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Table II

Measure	Customer Data	Frequencies	%
Gender	Male	145	70.40
	Female	61	29.60
Age Group	15-24	14	6.80
	25-34	51	24.80
	35-44	70	34.00
	45-54	59	28.60
	55-64	11	5.30
	65+	1	0.50
Educational Level	O Level/GCSE	8	3.90
	College	34	16.50
	University	164	79.60
Customers by Bank	Lloyds/Halifax	59	28.60
	RBS/NatWest	29	14.10
	HSBC	31	15.00
	Barclays	39	18.90
	Santander	18	8.70
	Virgin Money	6	2.90
	Others	24	11.70
Length of DB Usage	Less than 1 year	14	6.80
	1 to 5 years	84	40.80
	6 to 10 years	78	37.90
	11+ years	30	14.60
Customers' Years of Bank Loyalty	Less than 1 year	11	5.30
	1 to 5 years	58	28.20
	6 to 10 years	45	21.80
	11+ years	92	44.70
Frequency of DB Usage	Daily	70	34.00
	Weekly	102	49.50
	Monthly	25	12.10
	Less Often	9	4.40
Most used DB Channels	Telephone Banking	53	14.90
	Internet Banking	180	50.60
	Mobile Banking	117	32.90
	Others	6	1.70
DB and Financial Services	Savings	108	9.40
	Check Balance	181	15.80
	Pay Bills	147	12.80
	Print Statement	52	5.00

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3		Transfer Funds	172	15.00
4		Standing Order	105	9.50
5		Current Account	165	14.40
6		Buy Insurance	27	2.40
7		Stock/Shares	21	1.80
8		Direct Debit	134	11.70
9		Mortgages	28	2.40
10		Others	5	0.40
11				
12				
13				
14	NPS	Detractors (0-6)	43	20.87
15		Passives (7-8)	85	41.26
16		Promoters (9-10)	78	37.86
17				
18	Note: n = 206	Overall Bank NPS		16.99

Table II. Bank Customer Profile and Frequency Information

Table III

Mean	SD	PV	Conv	FQ	DBSQ	BT	ECE	PR	PU	DBI	CSAT	CLY	CEQ	FP1	FP2
17.49	2.30	PV													
14.12	1.58	Conv	0.768**												
12.27	1.98	FQ	0.704**	0.630**											
11.55	2.11	DBSQ	0.651**	0.558**	0.720**										
11.00	1.94	BT	0.467**	0.324**	0.469**	0.617**									
11.93	1.73	ECE	0.509**	0.401**	0.421**	0.400**	0.430**								
10.41	2.24	PR	0.471**	0.349**	0.520**	0.641**	0.554**	0.351**							
12.54	2.00	PU	0.706**	0.596**	0.802**	0.793**	0.488**	0.360**	0.493**						
11.99	1.99	DBI	0.660**	0.535**	0.702**	0.666**	0.499**	0.451**	0.481**	0.668**					
12.15	1.97	CSAT	0.685**	0.551**	0.806**	0.804**	0.520**	0.351**	0.492**	0.847**	0.679**				
12.05	2.20	CLY	0.698**	0.593**	0.730**	0.783**	0.581**	0.481**	0.479**	0.783**	0.703**	0.761**			
11.59	2.12	CEQ	0.663**	0.538**	0.715**	0.659**	0.504**	0.564**	0.427**	0.713**	0.597**	0.682**	0.718**		
192.96	78.70	FP1	0.298**	0.311**	0.228**	0.214**	0.149*	0.205**	0.145*	0.211**	0.341**	0.169*	0.262**	0.230**	
18.42	14.42	FP2	0.174*	0.192**	0.227**	0.296**	0.167*	0.089	0.251**	0.216**	0.247**	0.212**	0.239**	0.130	0.570**

Note: n=206, \* p<0.05, \*\*p<0.01

Significance (2-tailed)

Table III. Correlation Analysis of the Factors

Table IV

Factors	Items	Loadings	KMO	TVE	Bartlett's Test Significance	Communi- alities	Cronbach $\alpha$
PV	Q3	0.774	0.744	57.888	0.000	0.714	0.736
	Q6:	0.584				0.617	
	Q8:	0.568				0.602	
	Q36:	0.538				0.631	
CONV	Q4	0.790	0.732	82.423	0.000	0.791	0.893
	Q5:	0.780				0.802	
	Q7:	0.680				0.699	
FQ	Q11:	0.590	0.689	70.140	0.000	0.588	0.786
	Q19:	0.650				0.678	
	Q26:	0.684				0.665	
DBSQ	Q21:	0.748	0.690	66.760	0.000	0.777	0.749
	Q25:	0.576				0.670	
	Q27:	0.599				0.663	
BT	Q32:	0.550	0.615	54.400	0.000	0.504	0.754
	Q33:	0.718				0.686	
	Q34:	0.640				0.696	
ECE	Q12	0.586	0.606	50.799	0.000	0.628	0.706
	Q13:	0.768				0.659	
	Q31:	0.501				0.582	
PR	Q28:	0.706	0.648	70.577	0.000	0.647	0.778
	Q29:	0.788				0.744	
	Q30:	0.739				0.747	
PU	Q9:	0.767	0.691	72.486	0.000	0.770	0.803
	Q17:	0.736				0.721	
	Q22:	0.668				0.704	
DBI	Q10:	0.727	0.622	62.712	0.000	0.764	0.712
	Q37:	0.783				0.745	
	Q38:	0.598				0.735	
CEQ	Q14:	0.771	0.667	66.022	0.000	0.699	0.736
	Q15	0.568				0.591	
	Q16	0.680				0.589	
CSAT	Q18	0.671	0.714	76.267	0.000	0.668	0.844
	Q20:	0.783				0.774	
	Q35:	0.765				0.670	
CLY	Q23:	0.797	0.689	64.362	0.000	0.767	0.710
	Q24:	0.616				0.595	

	Q39:	0.553				0.593	
FP1	ROE	0.795	0.704	81.025	0.000	0.710	0.882
	NIM	0.893				0.861	
	Cost-to- Income Ratio	0.863				0.839	
FP2	Q44: NPS						
	Detractors	0.718	0.690	71.853	0.000	0.668	0.764
	Passives	0.859				0.818	
	Promoters	0.742				0.649	

Note: n =206, \*p<0.05, \*\*p<0.01

Table IV. Exploratory Factor and Reliability Analysis Results

**Table V**

**Overall fit of the model**

Parameters	PF1 Value	PF2 Value
$\chi^2/df$	2.11	2.09
CFI	0.907	0.911
TLI	0.901	0.906
NFI	0.862	0.864
RMSEA	0.068	0.065

Table V: Model Fit for Financial Performance FP1 and FP2

Table VI

Research Hypotheses	Path Coefficient	Remark
H1 Perceived Value has a positive relationship with Customer Experience	0.14*	Accept
H2 Convenience has a positive relationship with Customer Experience	-0.05	Reject
H3 Functional Quality has a positive relationship with Customer Experience	0.31**	Accept
H4 DB Service Quality has a positive relationship with Customer Experience	0.12*	Accept
H5 Brand Trust has a positive relationship with Customer Experience	0.09	Reject
H6 Employee Customer Engagement has a positive relationship with Customer Experience	0.30**	Accept
H7 Perceived Risk has a positive relationship with Customer Experience	-0.10*	Accept
H8 Perceived Usability has a positive relationship with Customer Experience	0.31**	Accept
H9 DB Innovation has a positive relationship with Customer Experience	-0.03	Reject
H10 Customer Experience has a positive relationship with Customer Satisfaction	0.63**	Accept
H11 Customer Experience has a positive relationship with Customer Loyalty	0.35**	Accept
H15 Customer Satisfaction has a positive relationship with Customer Loyalty	0.51**	Accept
H13a Customer Satisfaction has a positive relationship with FP1	-0.10	Reject
H14a Customer Loyalty has a positive relationship with FP1	0.25*	Accept
H12a Customer Experience has a positive relationship with FP1	0.10	Reject
H13b Customer Satisfaction has a positive relationship with FP2	0.10	Reject
H14b Customer Loyalty has a positive relationship with FP2	0.22*	Accept
H12b Customer Experience has a positive relationship with FP2	-0.10	Reject
<b>New SEM Path</b>		
Functional Quality has a positive relationship with DB Service Quality	0.72**	Accept
Employee Customer Engagement has a positive relationship with Functional Quality	0.36**	Accept
DB Innovation has a positive relationship with Perceived Risk	0.47**	Accept
Employee Customer Engagement has a positive relationship with DB Service Quality	0.35**	Accept
Brand Trust has a positive relationship with Convenience	0.32**	Accept
Perceived Value has a positive relationship with Perceived Usability	0.77**	Accept



DB Innovation has a positive relationship with Employee  
Customer Engagement 0.12\* Accept

Table VI. Hypothesis Test Results for FP1 and FP2

Table VII

Factors	Age Group	Educational Level	Gender	Banks	Frequency of DB Usage	Length of DB Usage	Length of Bank Loyalty	NPS Value
	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>	<i>F-Value</i>
PV	5.41**	0.49	0.09	5.22**	35.95**	12.29**	1.99	39.68**
Conv	2.88**	0.03	0.18	5.33**	30.98**	12.08**	0.51	22.02**
FQ	2.77**	0.19	0.01	2.73**	25.73**	6.85**	0.65	42.72**
DBSQ	3.27**	0.72	0.69	4.84**	18.82**	6.81**	0.78	54.02**
BT	2.98**	1.73	1.10	1.57	8.03**	4.56**	2.54**	19.19**
ECE	1.62	2.22	0.56	2.27*	5.13**	2.15	3.00**	7.22
PR	0.64	0.58	0.55	3.19**	8.33**	1.29	1.33	13.32**
PU	6.48**	0.66	0.02	2.47*	19.98**	11.62**	0.23	44.83**
DBI	2.47*	0.35	0.03	4.78**	27.81**	4.28**	0.34	48.26
CSAT	3.71**	0.64	0.29	2.09*	18.19**	11.85**	0.65	82.98**
CLY	5.04**	1.47	0.03	3.31**	31.20**	11.17**	1.70	80.29**
CEQ	4.17**	2.15	0.04	2.86**	19.03**	13.14**	0.33	35.29**

Note: n=206, \*p<0.05, \*\*p<0.01

Table VII. Analysis of Variance between Factors and Customer Data

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Figure 1

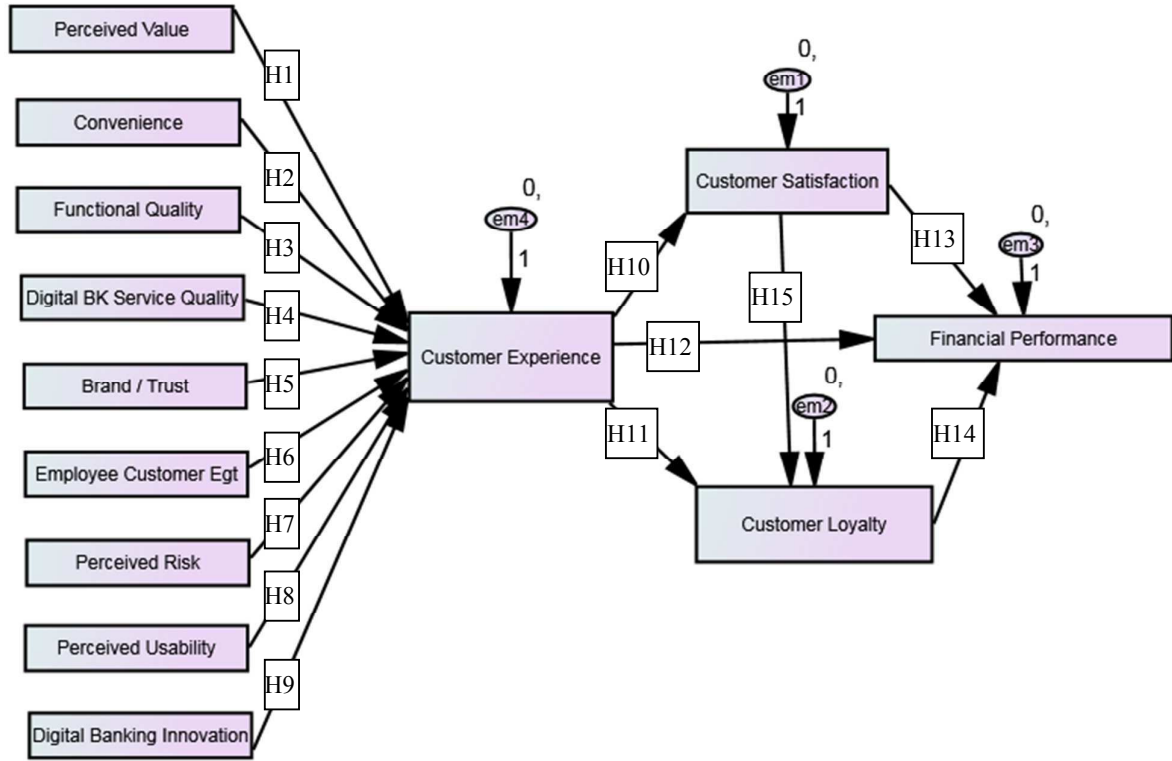


Figure 1. Conceptual Model

Figure 2

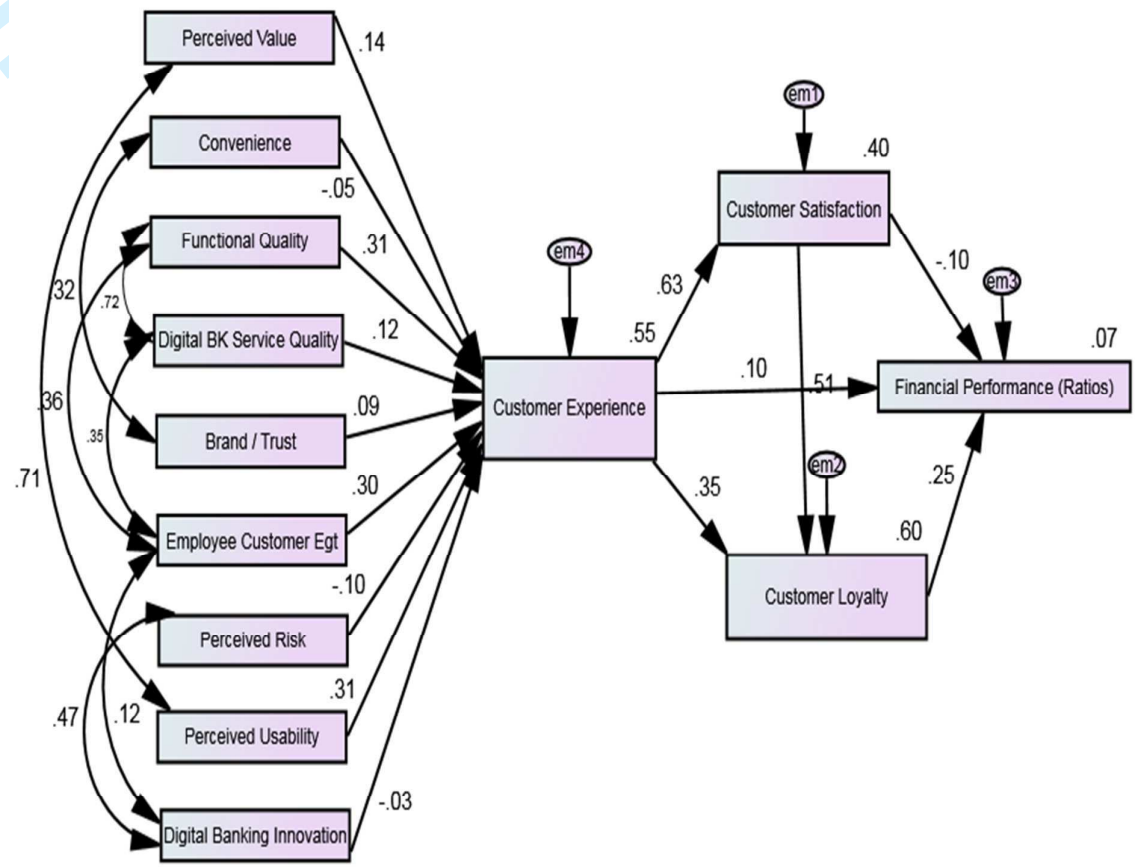


Figure 2. Model of the Factors using FP1

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Bank Marketing

Figure 3

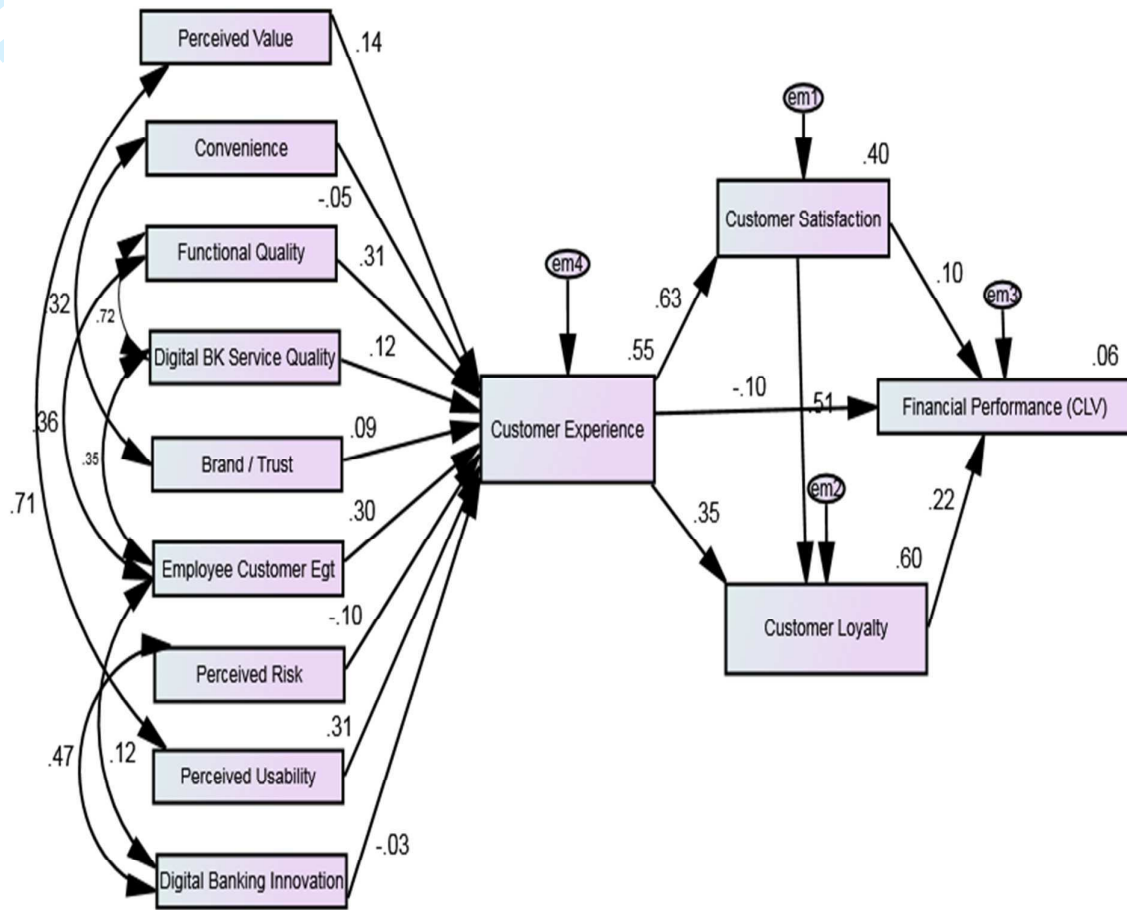


Figure 3. Model of the Factors using FP2

Bank Marketing

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