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Understanding the Continuance of Mobile Financial Services in Kenya:
The Roles of Utilitarian, Hedonic, and Personal Values

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ABSTRACT

This study develops an integrated model that extends the means-end theory with customer value research and examines continuance intention towards using mobile financial services. A large-scale online questionnaire targeting M-PESA customers in Kenya was employed to analyze the research model. The results indicate that utilitarian and hedonic values affect continuance intention. Hedonic and personal values impact customer satisfaction, while customer satisfaction influences continuance intention. Customer satisfaction mediates the indirect effects of hedonic and personal values on continuance intention. This study presents a value-based framework to examine the hierarchical influences of customer value on attitudes and outcome behaviors. This study offers several research contributions as well as insights for practitioners to enhance mobile financial services for sustained adoption, use, economic and developmental success.

KEYWORDS

Continuance, Customer Value Hierarchy, Hedonic Value, Means-End Theory, Mobile Financial Service, M-PESA, Personal Value, Utilitarian Value

INTRODUCTION

M-PESA from Safaricom is the dominant mobile financial service (MFS) in Kenya. More than 23 million subscribers have been using M-PESA since 2007 (Omigie, Zo, Rho, & Ciganek, 2017) accounting for about $28 billion in 2015 alone or roughly 44% of Kenya's gross domestic product (Masinde, 2016). MFS consists of mobile banking services and mobile payment services (Lee, Park, Chung, & Blakeney, 2012). MFS is a driving force for financial inclusion in developing countries. Low-income, under-banked, and un-banked customers utilize M-PESA to receive

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and send money, pay for goods and services, and access credit and insurance services (Mazer & Rowan, 2016). As a result, MFS utilization has steadily increased in the banking, commerce, healthcare, agricultural, transportation, insurance, government, and many other industries (Adaba & Ayoung, 2017; Donovan, 2012).

Numerous studies have explored MFS adoption and acceptance (Omigie et al., 2017; Thakur & Srivastava, 2014), MFS business models (Pousttchi & Hufenbach, 2012), and MFS regulatory and contracting issues (Kemp, 2013), but only a few studies have examined MFS post-adoption customer perceptions (Yu & Fang, 2009; Zhou, 2013). Most of these MFS studies employ attitude and adoption models like the technology acceptance model, diffusion of innovation theory, and the unified theory of acceptance and use of technology (Shaikh & Karjaluoto, 2015). MFS studies have also extensively examined the perception of value on customer satisfaction and loyalty, continuance intention, and pre-adoption behavior (Carlson, O'Cass, & Ahrholdt, 2015; Kuo, Wu, & Deng, 2009; Omigie et al., 2017; Thuy & Hau, 2010). Means-end theory has not been applied to examine customers' attitudes and outcome behaviors using MFS.

Means-end theory posits that at a higher level of abstraction, customers' attitudes and outcome behaviors are goal and value-motivated (Gutman, 1997). To connect these goals and value to customer attitude and outcome behaviors, the prior literature is leveraged to propose an integrated research model. This study investigates the impact of perceived and personal values on customers' attitudes and behaviors toward MFS at the post-adoption stage. The study presents an integrated model grounded in means-end theory by utilizing customer value research frameworks like the customer value hierarchy and customer value change frameworks (Flint, Woodruff, & Gardial, 1997; Woodruff, 1997; Woodruff & Gardial, 1996) to link perceived and personal values to customer satisfaction and continuance intention. The customer value research frameworks connect the goals and values in means-end theory to attitude and outcome behaviors at a higher level of abstraction. Customer value attracts new customers, retains existing customers, increases market share, increases profitability, and in the long-run, facilitates long-term service viability and survival (Bhattacherjee, Perols, & Sanford, 2008). Customer value is closely related to customer experience outcomes (Thong, Hong, & Tam, 2006). Customer experience outcomes may offer useful insights for creating and delivering value-based MFS.

The customer value research framework (i.e., customer value hierarchy and customer value change frameworks) provides a growing understanding of means-end theory. The customer value research framework emphasizes customer value perceptions and motivating goals, which are at a higher level of abstraction in the means-end chain (or hierarchy) than service attributes that are at a lower level of abstraction (Sánchez-Fernández & Iniesta-Bonillo, 2007). The decision to use mobile financial services follows a means-ends hierarchical chain in which a customer perceives higher customer value if service use provides desirable outcomes. Greater perceptions of customer value lead to customer satisfaction and outcome behaviors (Stahl, Barnes, Gardial, Parr, & Woodruff, 1999).

This study examines the role that customer perceived and personal values have toward the long-term viability and success of M-PESA services in Kenya. MFS value consequences are operationalized using perceived and desired value attributes. The formative-reflective type hierarchical component model and repeated indicator technique were adapted from the existing literature to operationalize the integrated model (Afthanorhan, 2014). The research model examines the impact of lower-level hierarchy value attributes through secondary or higher-level value consequences on customer satisfaction and continuance intention (i.e., outcome behaviors). PLS 3.0 and a dataset of 366 valid responses were utilized to run the statistical model.

The research has relevance for both practitioners and academics. Findings of the effective positioning of MFS that may enhance customer satisfaction and continuance intention are important for MFS providers. For researchers, a hierarchical development model of customer value perceptions on customer satisfaction and the continuance intention toward MFS is an important contribution. A customer value hierarchy and customer value change framework approach is proposed to link means-

end theory to customer attitude and outcome behaviors. Existing research has largely overlooked MFS post-adoption customer perceptions (Yu & Fang, 2009; Zhou, 2013).

The following describes the organization of the remainder of this paper. The next section reviews the existing literature on the means-end theory and customer value research. The ensuing section develops the research model and hypotheses. The subsequent sections describe the research method, data collection, and research results. The last section provides study implications and limitations and discusses opportunities for future research.

THEORETICAL BACKGROUND

Means-End Theory

Means-end theory (MET) is a value-based hierarchical framework that connects a product or service and its attributes through desirable outcomes to secondary or higher-level goals and values (Gutman, 1982, 1997). The theory conceptually links actual and desired values to customer attitudes and behaviors (Hsiao, Yen, & Li, 2012; Yang & Chang, 2012). MET posits that a customer's choice and decision to use a service follows a hierarchical learning process that is influenced by service attributes, attribute performance, desirable outcomes, and the personal goals and values realized when the service is used (Woodruff, 1997).

Zeithaml (1988) utilized MET to examine relationships between quality, price, and value. She argued that value represents a higher level of abstraction since individual perceptions influence value. Woodruff and Gardial (1996) extended MET to develop a customer value hierarchy framework to assess value in a broader context. Their framework represents value in a hierarchical order of attributes, consequences, and desired end states. Lower-level hierarchy value attributes are necessary to realize secondary or higher-level value consequences. Flint et al. (1997) extended MET to conceptualize the customer value change framework to link a customer's perception of value (e.g., values, desired value, and value judgment) to a customer's satisfaction. According to the authors, values are a customer's personal goals. Values are central, enduring beliefs that guide a customer's behavior independent of the situation in which a service is used. Values represent a customer's desired end-state or higher-order goals that guide their behavior (Rokeach, 1973). Desired value (or consequences) is what a customer wants to happen. Desired value suggests that value is created by a service when the benefit it conveys (i.e., consequences) aide a customer to attain his/her goals in different use situations. Customers need desired value to commit to their values and actualize their desired end-state of existence (Woodruff & Gardial, 1996). Woodruff (1997) argues that desired value is created in a hierarchical framework and that each subsequent layer of abstraction leads to satisfaction when the value received during and after use is desirable. Value judgment is a customer's evaluation of what happened when a service was used. Value judgment is the perceived worth of a service in monetary terms matched with the benefit received compared to the price paid for using the service (Anderson, Jain, & Chintagunta, 1992). Value judgment is based on the perception of a service's performance within specific use situations. Value judgment is a perception formed as a result of what has happened or value received.

Service characteristics are value attributes including a customers' perception of value and desired value. It represents the lowest level or stage of the value-based hierarchical framework. Outcomes and goals that make value attributes desirable and relevant to customers are secondary or higher levels of the value-based hierarchical framework. Chiu, Wang, Fang, and Huang (2014) argued that customers use products or services not only because of their attributes but also for the benefits and value that they convey. Perceived benefits and value are customer value judgments and represent secondary or higher-level goals that motivate customers' choice behavior (Gutman, 1997). Customer value judgments lead to satisfaction and retention (Flint et al., 1997; Gutman, 1982; Woodruff, 1997).

Prior studies have utilized MET to examine customers' attitudes and outcome behaviors. Chiu et al. (2014) utilized MET to examine repeat purchase intention for business-to-consumer e-commerce activities. They hypothesized utilitarian and hedonic value as positive determinants and perceived risk

as a negative determinant of customers' repeat behavior in an online context. Thakur and Srivastava (2014) utilized MET to examine the functional relationship existing between adoption readiness, personal innovativeness, perceived risk, and usage intention across customer groups for mobile payment services in India. Additional studies have examined intention and continuance intention toward mobile payment services and payment technology but did not use MET. Zhou (2013) carried out an empirical examination of continuance intention for mobile payment services. He adapted the success model and flow theory to study the factors that affected continuance intention for mobile payments. Oliveira, Thomas, Baptista, and Campos (2016) utilize the extended unified theory of acceptance and use of technology (UTAUT2) and the diffusion of innovation (DOI) to examine the determinants of customer adoption and intention to recommend mobile payment technology to prospective customers.

Customer Value

Customer values are perceptions of what a customer wants to happen or the perceived consequences of using a service for a desired purpose or goal (Stahl et al., 1999). Customer value is a judgment based on a customers' perception of use (Holbrook, 2005). Customers think about the value of a service based on a customers' desired value and perceived value (Woodruff, 1997). Customer values are important personal beliefs held by themselves and the goals the customer seeks to satisfy. Personal values guide customers' behavior, preferences, and judgment. Every choice and decision to use a product or service is guided by a desire to fulfill perceived value and personal values (Rosenberg, 1956). A customer may simultaneously obtain monetary or utilitarian value and hedonic value like the feeling of joy along with personal value like family safety while using an MFS. Value is directly linked to the benefits that a customer receives from using a service within a series of possible outcomes. Outcomes reflect the nature of the end-state - the wants or goals (i.e., benefits received). The extent to which outcomes are valued is predicated on the degree to which a service is useful, satisfies a need, or solves a problem (Carlson et al., 2015; Higgins & Scholer, 2009).

Utilitarian Value

Utilitarian value reflects the extrinsic utility of using a service. Utilitarian value represents the outcomes resulting from a customers' conscious pursuit of an intended consequence (Babin, Darden, & Griffin, 1994). Utilitarian value is functional, instrumental, task-related, service-oriented, and rational in nature while linked to motivating desires that satisfy psychological and safety needs (Sánchez-Fernández & Iniesta-Bonillo, 2007). MFS utilitarian value is a secondary or higher-level value perceived after an evaluation of the task-related performance of service value attributes. MFS utilitarian value exists at a higher level of abstraction when conceptualized through perceived outcomes like excellence (Holbrook, 2005), monetary (Omigie et al., 2017), transaction (Grewal, Monroe, & Krishnan, 1998), and safety (Smith & Colgate, 2007) values (Turel, Serenko, & Bontis, 2010; Wetzels, Odekerken-Schröder, & Oppen, 2009).

Excellence value is a component of utilitarian value that assesses a customers' perception of MFS quality and the service's ability to perform its function well in all situations (Holbrook, 2005). Excellence value attributes enhance customer satisfaction (Zeithaml, 1988). M-PESA possesses excellent qualities as the service provider (Safaricom) possesses the expertise required to deliver MFS well. Monetary value is a component of utilitarian value, which relates to the value for money, economic value, low price, and the reasonableness of fees for using MFS to send money, pay bills, and pay for goods and services. Monetary value is the utility obtained in a comparison of what is received to what is given (Omigie, Zo, & Rho, 2015; Omigie et al., 2017).

Transaction value is the perceived psychological satisfaction or pleasure received in the form of a good deal for using MFS relative to the price of alternative services (Parasuraman & Grewal, 2000). Efficient transaction processes that trigger psychological satisfaction or pleasure while using MFS is a source of transaction value. Transaction processes include service connectivity, authentication,

authorization, and confirmation (Shon & Swatman, 1998; Vasarhelyi & Greenstein, 2003). An efficient transaction process is when a service provider informs their customers of every financial transaction, account balance, and payment confirmation (C. Kim, Mirusmonov, & Lee, 2010). Transaction value is positive when the perceived reference price of a service is higher than the actual price. Transaction value is negative when the perceived reference price of a service is lower than its actual price.

Safety value is a component of utilitarian value that is linked to safety needs (Keller, 1993). MFS that is reliable, safe, secure, and free from potential danger or fraud is a source of safety value. Perceived safety value increases a customer's sense of safety, beliefs, and confidence in the MFS delivery channel (Smith & Colgate, 2007). Service safety enhances information quality (Alba et al., 1997), which in turn influences the utilitarian value of a service or system (Kim & Oh, 2011). MFS should be designed with adequate security features like transaction confidentiality, authentication, data integrity, and non-repudiation.

Hedonic Value

Hedonic value is the intrinsic benefit attained using a service. Hedonic value represents outcomes arising from spontaneous hedonic responses that capture the basic duality of reward (Babin et al., 1994). Hedonic value refers to the symbolic, aesthetic, and experiential aspects of consumption (Ladeira, Nique, Pinto, & Borges, 2016). Hedonic value is associated with increased arousal, perceived freedom, non-instrumental, and affective worth of using a service (Sánchez-Fernández & Iniesta-Bonillo, 2007). MFS hedonic value exists at a higher level of abstraction when conceptualized through perceived outcomes like aesthetic (Omigie et al., 2017), symbolic, and experiential (Hur, Park, & Kim, 2010) values (Turel et al., 2010; Wetzels et al., 2009).

Symbolic value is the utility obtained resulting from perceived psychological, social, cultural, and ethnic service benefits (Smith & Colgate, 2007). Symbolic value is benefits acquired to satisfy internally generated needs such as the desire to feel a sense of self-concept, self-attainment, self-worth, self-enhancement, and image projection (Hur et al., 2010). Solomon (1983) argued that products and services are evaluated and adopted based on their symbolic qualities. M-PESA possesses such symbolic qualities and promotes Kenya's national identity including language, culture, and lifestyle. The M-PESA brand name promotes the Swahili language ("M" for mobile, "PESA" for money) (Omigie et al., 2017).

Experiential value is the utility received to fulfill hedonic needs such as sensory pleasure, emotional needs, social-relational needs, epistemic needs, and cognitive stimulus (Hur et al., 2010; Keller, 1993; Park, Jaworski, & Maclnnis, 1986). Experiential value includes the feeling of happiness or pleasure obtained during and after the process of making mobile payments, mobile purchases, or mobile fund transfers (Smith & Colgate, 2007). Experiential benefits come from dynamic interactivity, seamless aesthetics, and information symmetry among the service, the service provider, and the customer (Wu & Liang, 2009). Jack and Suri (2011) reported that customers are extremely pleased with M-PESA.

Aesthetic value is a feature that arouses emotion, visual appeal, and conveys a feeling of attraction (Sheth, Newman, & Gross, 1991). Aesthetic value comes from the artistic designs and physical attractiveness of a service brand and represents the tangible feature of service quality as well as the intangible feature of service excellence (Holbrook, 2005). M-PESA aesthetic value is exhibited in the application's aesthetics, color, and brand logo which strongly influence customer pre-adoption choice behavior (Omigie et al., 2017).

Personal Value

Personal values consist of terminal or self-actualization and instrumental or social affiliation values (Shim & Eastlick, 1998). Self-actualization values are desired end-states of existence and represent the beliefs that a customer has about the goals they strive to actualize (e.g., peace of mind). Social-affiliation values (e.g., fun) are desired modes of action that convey a customers' beliefs about the

ways to realize self-actualization values. Self-actualization and social-affiliation values influence customer shopping attitudes and behaviors (Shim & Eastlick, 1998) and online shopping re-patronage intentions (Koo, Kim, & Lee, 2008).

RESEARCH MODEL AND HYPOTHESES

Customer Value, Customer Satisfaction, and Continuance Intention

Utilitarian, hedonic, and personal values influence customer satisfaction and outcomes behaviors. Kim and Oh (2011) found that utilitarian and hedonic values influence the continued usage intention toward mobile data services, while only utilitarian value influences mobile data services behavioral intentions. Pöyry, Parvinen, and Malmivaara (2013) found that utilitarian and hedonic motivations influence browsing behavior while browsing behavior mediates the impact on customer purchase, referral, and continuance intention. Pöyry et al. (2013) also found that only utilitarian motivation influences a customer's desire to participate in online exchange activities. Chiu et al. (2014) found that at a higher level of abstraction, utilitarian and hedonic values influence repeated purchase intentions toward e-commerce systems and services. Ladeira et al. (2016) found that hedonic product value affects retail product customer satisfaction due to the pleasurable performance of product attributes.

Thuy and Hau (2010) show that at a higher level of abstraction, personal and service values strongly influence customer satisfaction and loyalty toward banking, healthcare, and airline services. Durvasula, Lysonski, and Madhavi (2011) report that at a higher level of abstraction, personal values influence service satisfaction, loyalty, re-purchase, and recommendation intentions. Lower-level hierarchy value attributes convey desirable secondary or higher-level value consequences, which influence customer satisfaction and continuance intention toward a service (Stahl et al., 1999). This study hypothesizes that:

H1: Utilitarian value positively influences customer satisfaction.
H2: Utilitarian value positively influences continuance intention.
H3: Hedonic value positively influences customer satisfaction.
H4: Hedonic value positively influences continuance intention.
H5: Personal value positively influences customer satisfaction.
H6: Personal value positively influences continuance intention.

CUSTOMER SATISFACTION AND CONTINUANCE INTENTION

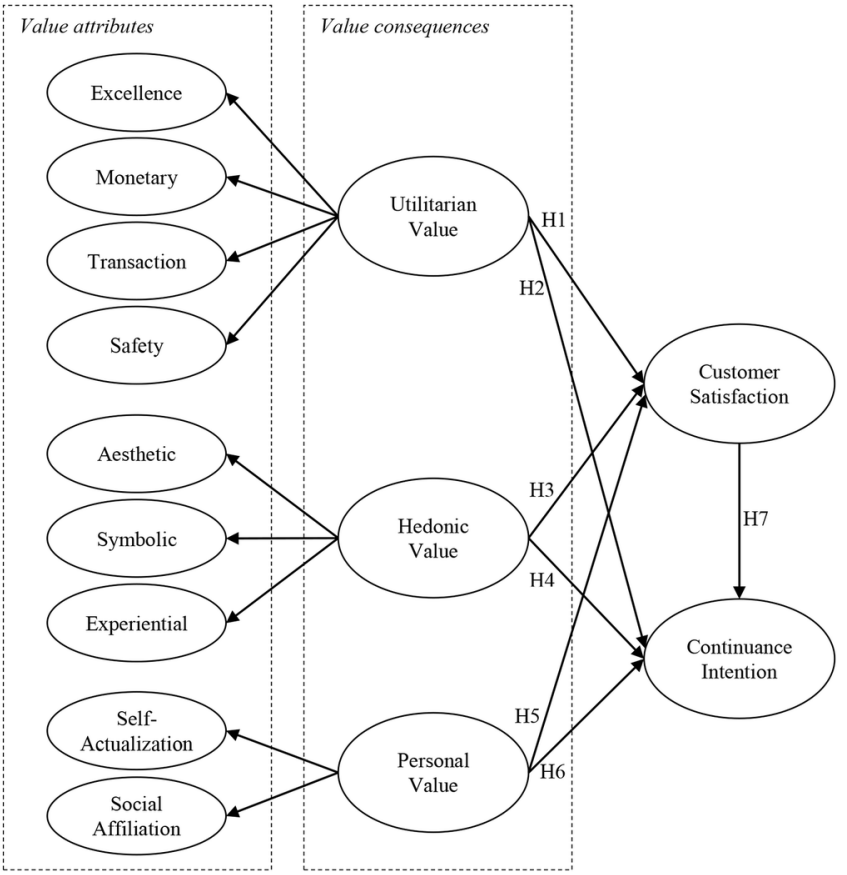
Continuance intention is a customer's choice and action to continue to use a service. Continuance intention is vital for service success, survival, and long-term viability because continuance intention reduces the cost of retaining existing customers (Bhattacherjee et al., 2008). Customer satisfaction is the judgment that a service or its value attributes provide a pleasurable experience that is fulfilling when used (Oliver, 1993; Oliver & DeSarbo, 1988). Customer satisfaction is a positive or negative feeling that a customer has about the value received from using a service (Woodruff & Gardial, 1996). Customer satisfaction signals an attitude change formed when a service meets a customers' expectation and provides a satisfying experience (Bhattacherjee, 2001; Spreng & Olshavsky, 1993). Customer satisfaction influences continuance intention toward MFS (Alraimi, Zo, & Ciganek, 2015; Oghuma, Libaque-Saenz, Wong, & Chang, 2016; Zhou, 2013). This study hypothesizes that:

H7: Customer satisfaction positively influences customers' continuance intention.

Figure 1 presents an integrated research model linking lower-level value attributes and higher-level value consequences to customer satisfaction and continuance intention.

Figure 1. Research model

Figure 1. Research model



RESEARCH METHOD

Measures and Data

All measurement items used in this study were harnessed from the existing literature (see Table 5 in the Appendix). Two pilot surveys were conducted at different times to collect random offline responses from M-PESA customers in Kenya. The pilot surveys were conducted to refine the extracted measures based on internal consistencies, ease of understanding, reliability, and contextual relevance as well as gauge M-PESA customers' understanding of the measurement items. The survey was randomly administered for two separate trials of 50 M-PESA customers in Nairobi and Nyeri County's because they represent urban and rural users of the service respectively. The measurement items that did not meet internal consistency and reliability were eliminated (Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). Aesthetic and monetary value (Omigie et al., 2017), excellence value (Holbrook, 2005), transaction value (Grewal et al., 1998), safety, experiential and symbolic value (Hur et al., 2010; Yang & Chang, 2012), utilitarian and hedonic value (Chiu et al., 2014), and personal values (i.e. self-actualization and social affiliation) (Barrena & Sanchez, 2013; Koo et al., 2008) were adopted. A seven-point Likert scale anchored from "strongly disagree" (1) to "strongly agree" (7) was used to measure each item.

The final survey was randomly administered to seven hundred and fifty (750) users online, which yielded five hundred (500) responses. The final data set was determined after removing invalid responses due to duplication, empty fields, incomplete and over-ambitious evaluation (Yu, Lee, Ha, & Zo, 2015). Three hundred and sixty-six (366) valid responses from five hundred (500) total responses were analyzed for this study. The sample population of M-PESA customers in Kenya was chosen to better understand the uniqueness of such widespread continued use of a specific service. Table 1 lists the study respondents' characteristics. M-PESA was chosen for the study's analysis because

Table 1. Respondents' characteristics

Characteristic	Number (n = 366)	Percentage
Gender		
Male	207	56.6
Female	157	42.9
Prefer not to say	2	0.5
Age		
18-30	216	59.0
31-40	93	25.4
41-50	43	11.7
> 50	14	3.9
Occupation		
Student	172	47.0
Public sector	16	4.4
Private sector	49	13.4
Self-employed	129	35.2

M-PESA has a customer base of over 23 million users making it the dominant player in the Kenyan mobile financial service market (Omigie et al., 2017).

ANALYSIS METHOD

A partial least squares (PLS) technique was employed with SmartPLS 3.0 to test the internal consistency reliability, convergent validity, and discriminant validity (Gefen & Straub, 2005). PLS could be used to establish the reliability and validity of the measurement items, as well as the internal consistency of the model structural relationship (Chiu et al., 2014). PLS was employed because (1) PLS assesses formative and reflective measures as well as complex models; (2) PLS makes no assumption of the underlying data and analyzes the strength and direction of construct relationships relative to their correlation coefficients; and (3) PLS can be used to analyze hierarchical component models (HCM) (Hair et al., 2014). Utilitarian, hedonic, and personal values were modeled as second-order constructs.

RESULTS

Measurement Model

Utilitarian, hedonic, and personal values were analyzed using the repeated indicators technique to address possible issues with correlation, collinearity, and discriminant validity, and focuses on the significance of the indicators (Afthanorhan, 2014; Chiu et al., 2014). The repeated indicators

technique also allows second-order constructs to be directly estimated by the observed variables of the first-order constructs using a standard PLS algorithm (Chin, 1998).

Measurement model accuracy was assessed in a variety of ways. Construct composite reliability was examined to determine internal consistency. The composite reliability for each construct exceeded the conventional threshold of 0.70 (see Table 2). Convergent validity was examined by investigating the value of the average variance extracted (AVE) and conducting a factor analysis. The AVE value is recommended to be no less than 0.5 and each latent variable's factor loading greater than 0.7 to demonstrate convergent validity (Gefen & Straub, 2005). The AVE value was lowest for the monetary variable (0.529), but still exceeded the threshold value of 0.5 (see Table 2). The latent

Table 2. Construct correlations and the square root of AVE

	CR	AVE	AST	CST	CON	EXC	EXP	MON	SAF	SEA	SOA	SYM	TRX
AST	.858	.751	**.805**										
CST	.806	.675	.304	**.815**									
CON	.851	.741	.267	.435	**.784**								
EXC	.861	.674	.341	.373	.368	**.866**							
EXP	.847	.648	.349	.306	.460	.355	**.774**						
MON	.818	.529	.304	.141	.120	.219	.144	**.822**					
SAF	.817	.599	.149	.065	.046	.226	-.013	.363	**.821**				
SEA	.858	.602	.273	.389	.249	.406	.151	.279	.263	**.785**			
SOA	.865	.617	.288	.379	.232	.246	.128	.219	.195	.611	**.776**		
SYM	.856	.664	.316	.426	.316	.403	.304	.252	.194	.425	.472	**.727**	
TRX	.865	.615	.335	.230	.525	.330	.475	.265	.178	.171	.190	.311	**.861**

Notes: CR (composite reliability), AVE (average variance extracted), AST (aesthetic), CST (customer satisfaction), CON (continuance intention), EXC (excellence), EXP (experiential), MON (monetary), SAF (safety), SEA (self-actualization), SOA (social affiliation), SYM (symbolic), and TRX (transaction) values;

variable factor loadings were all greater than 0.7 demonstrating convergent validity (see Table 3). Construct correlations were also below the 0.85 threshold (Kline, 2015). The internal consistency, reliability, convergent validity, and discriminant validity of the measurement model are achieved as all recommended guidelines were satisfied (Chin, 1998; Fornell & Larcker, 1981; Hair Jr et al., 2014; Nunnally, 1978).

The diagonal elements in bold represent the square root of the average variance extracted (AVE).

Structural Model

The predictive accuracy and explanatory power of the structural model were assessed using a PLS algorithm bootstrapped at 5000 iterations to generate the hypothesized relationships among the constructs, the significance of the path relationships, and the coefficient of determinations (R^2) for each of the constructs (Hair Jr et al., 2014). All of the model paths were significant except those from utilitarian value to customer satisfaction and from personal values to continuance intention. The research model accounts for 29.6% and 33.5% of the explained variance of customer satisfaction and continuance intention, respectively. The research model also demonstrates a link between lower-level value attributes and higher-level value consequences. Figure 2 and Table 4 present the results of hypotheses testing.

Table 3. Construct cross-loadings

	AST	CON	CST	EXC	EXP	MON	SAF	SEA	SOA	SYM	TRX
AST1	**0.824**	0.237	0.256	0.281	0.258	0.234	0.151	0.213	0.208	0.266	0.257
AST2	**0.816**	0.213	0.210	0.221	0.299	0.272	0.114	0.206	0.227	0.228	0.314
AST3	**0.775**	0.195	0.268	0.320	0.287	0.228	0.093	0.240	0.260	0.267	0.237
CON1	0.225	**0.783**	0.312	0.253	0.360	0.066	-0.024	0.147	0.108	0.202	0.340
CON2	0.191	**0.820**	0.408	0.358	0.365	0.105	0.017	0.175	0.168	0.285	0.405
CON3	0.193	**0.801**	0.374	0.338	0.366	0.094	0.110	0.297	0.255	0.248	0.425
CON4	0.240	**0.731**	0.252	0.184	0.355	0.109	0.035	0.152	0.187	0.249	0.480
CST1	0.342	0.355	**0.831**	0.320	0.247	0.178	0.087	0.384	0.333	0.363	0.204
CST2	0.280	0.301	**0.834**	0.304	0.235	0.147	0.053	0.290	0.320	0.337	0.200
CST3	0.115	0.404	**0.778**	0.287	0.266	0.016	0.018	0.270	0.270	0.340	0.157
EXC1	0.275	0.316	0.282	**0.883**	0.316	0.286	0.243	0.353	0.194	0.295	0.279
EXC2	0.319	0.322	0.370	**0.849**	0.299	0.081	0.144	0.350	0.236	0.411	0.293
EXP1	0.335	0.367	0.217	0.263	**0.810**	0.071	-0.039	0.125	0.104	0.164	0.359
EXP2	0.217	0.368	0.280	0.321	**0.759**	0.143	-0.023	0.168	0.094	0.201	0.381
EXP3	0.256	0.335	0.217	0.243	**0.751**	0.121	0.032	0.060	0.099	0.338	0.362
MON1	0.274	0.063	0.121	0.184	0.063	**0.847**	0.369	0.238	0.194	0.224	0.249
MON2	0.222	0.139	0.110	0.175	0.182	**0.796**	0.218	0.220	0.164	0.188	0.183
SAF1	0.106	-0.030	0.003	0.073	-0.070	0.278	**0.746**	0.140	0.096	0.155	0.078
SAF2	0.137	0.086	0.086	0.266	0.020	0.316	**0.880**	0.248	0.170	0.169	0.179
SAF3	0.119	0.032	0.055	0.181	-0.004	0.299	**0.833**	0.241	0.199	0.157	0.161
SEA1	0.242	0.161	0.271	0.279	0.077	0.220	0.251	**0.774**	0.513	0.310	0.180
SEA2	0.233	0.226	0.261	0.366	0.139	0.268	0.234	**0.861**	0.535	0.348	0.168
SEA3	0.155	0.240	0.357	0.350	0.151	0.226	0.169	**0.758**	0.369	0.382	0.132
SEA4	0.222	0.157	0.343	0.278	0.106	0.160	0.168	**0.743**	0.494	0.299	0.055
SOA1	0.236	0.231	0.352	0.273	0.103	0.192	0.204	0.521	**0.824**	0.402	0.170
SOA2	0.264	0.189	0.295	0.123	0.125	0.157	0.107	0.410	**0.793**	0.373	0.129
SOA3	0.273	0.132	0.256	0.143	0.116	0.202	0.152	0.420	**0.766**	0.384	0.189
SOA4	0.122	0.159	0.263	0.213	0.054	0.126	0.136	0.537	**0.715**	0.304	0.100
SYM1	0.282	0.250	0.262	0.345	0.330	0.208	0.147	0.231	0.184	**0.703**	0.275
SYM2	0.163	0.118	0.234	0.192	0.171	0.218	0.131	0.313	0.377	**0.742**	0.176
SYM3	0.272	0.196	0.299	0.231	0.125	0.191	0.125	0.325	0.434	**0.733**	0.185
SYM4	0.191	0.326	0.426	0.374	0.234	0.122	0.157	0.368	0.395	**0.730**	0.252
TRX1	0.273	0.477	0.195	0.269	0.393	0.237	0.136	0.111	0.177	0.319	**0.860**
TRX2	0.303	0.428	0.201	0.299	0.424	0.220	0.171	0.184	0.150	0.217	**0.862**

Notes: AST (aesthetic), CST (customer satisfaction), CON (continuance intention), EXC (excellence), EXP (experiential), MON (monetary), SAF (safety), SEA (self-actualization), SOA (social affiliation), SYM (symbolic), and TRX (transaction) values.

Figure 2. Structural model results

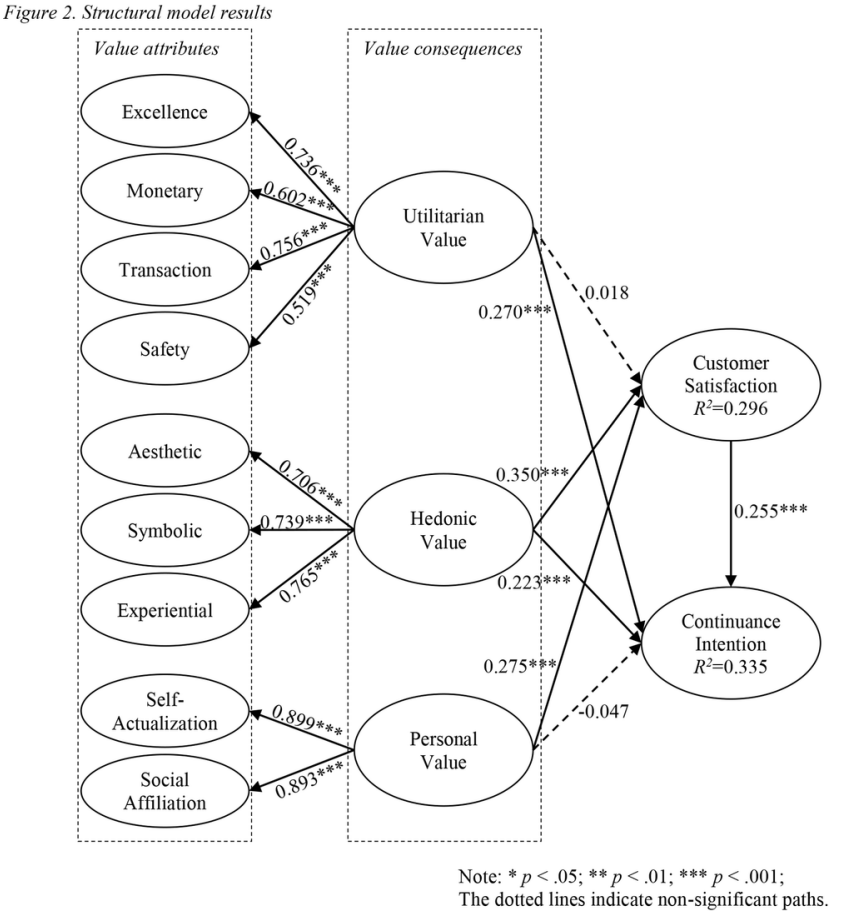


Table 4. Hypotheses testing results

Hypothesis	Coefficient	*t*-Value	*p*-Value	Result
H1: Utilitarian value → Satisfaction	.018	0.233	0.408	Not supported
H2: Utilitarian value → Continuance intention	.270	3.489	0.000***	Supported
H3: Hedonic value → Satisfaction	.350	4.872	0.000***	Supported
H4: Hedonic value → Continuance intention	.223	3.084	0.001***	Supported
H5: Personal value → Satisfaction	.275	3.631	0.000***	Supported
H6: Personal value → Continuance intention	-.047	0.646	0.259	Not supported
H7: Satisfaction → Continuance intention	.255	3.120	0.001***	Supported

* $p < .05$; ** $p < .01$; *** $p < .001$

DISCUSSION AND CONCLUSION

Key Findings

This study examines the roles that customer value perceptions have on the long-term viability and success of M-PESA in Kenya. This study develops an integrated model to explore the impacts of perceived value of M-PESA on customer satisfaction and the continuance intention to use M-PESA. The study model builds upon existing literature using the means-end theory and customer value research (i.e., customer value hierarchy and customer value change frameworks) to examine mobile financial service post-adoption perceptions (Flint et al., 1997; Gutman, 1997; Woodruff, 1997).

The PLS analysis results (Figure 2 and Table 4) indicate that customer satisfaction strongly influences continuance intention toward MFS, and mediates the indirect influences of hedonic value and personal value on continuance intention. These findings suggest that customers will continue to use MFS once they are satisfied with the value-based service attributes. This finding is consistent with prior studies (Yu & Fang, 2009; Zhou, 2013) and confirms that when customers are pleased with the use of M-PESA services, they will continue to use the service. This finding also suggests that customers enjoy satisfying experiences because the service meets their expectations (Spreng & Olshavsky, 1993).

Second, the study shows that utilitarian value strongly influences continuance intention, but has no impact on customer satisfaction. This finding suggests that utilitarian value is extrinsic and is driven by MFS technology-related features (Ladeira et al., 2016). Utilitarian value plays a more significant role in motivating customer post-adoption behavior in the mobile financial service context than it could do on customer satisfaction in other settings. This result could be due to customers that prefer the utilitarian value of MFS and are driven only by the technology-related features of the service (Ladeira et al., 2016). Such customers would continue to use any mobile payment service that provides functional, instrumental, task-related, and service-oriented benefits that can motivate customers to participate in or use the service (Pöyry et al., 2013). The results equally indicate that customer perceptions of the utilitarian value of MFS increases when customers can find value for money, discounts, low prices, good deals, excellence, and expertise in service delivery (Chandon, Wansink, & Laurent, 2000). Utilitarian value increases when a customer's confidence increases resulting from adequate security features for mobile financial transactions and the confidentiality of his information (Hsiao et al., 2012). Utilitarian value alone does not provide a pleasurable experience, hence the need for hedonic value.

Third, hedonic value strongly influences both customer satisfaction and continuance intention. Hedonic value's influence on customer satisfaction is greater than that of personal values on customer satisfaction, and hedonic value's influence on continuance intention is weaker than that of utilitarian value on continuance intention. These results are consistent with the results of prior studies. Ramanathan and Menon (2006) show that hedonic value generates greater satisfaction than utilitarian value, which triggers impulsive behavior. Hedonic value will increase as long as the components of hedonic value (i.e., symbolic, experiential, and aesthetic value of the service) satisfy the psychological, pleasurable, social, cultural, ethnic, emotional, and motivational needs of customers to use M-PESA. The study results suggest that customers are more satisfied and motivated by the intangible and intrinsic attributes of the M-PESA service than the tangible and extrinsic attributes of the service (Babin et al., 1994; Ladeira et al., 2016).

Chiu et al. (2014) show that utilitarian and hedonic value influences repeat behaviors at a higher level of abstraction. The results reveal that the impacts of utilitarian value are higher than those of hedonic value on repeat purchase intentions. Their study found significant relationships with utilitarian and hedonic values, but not in the mobile service context. These implications suggest that at a higher level of abstraction, desirable outcomes of using a service are relatively higher. Utilitarian and hedonic values influence customer attitudes and behaviors (Ladeira et al., 2016).

Fourth, personal values strongly influence customer satisfaction but have no impact on continuance intention. This result is consistent with the results of prior studies. Thuy and Hau (2010) show that at a higher level of abstraction, service personal values influence customer satisfaction and loyalty toward banking services in Vietnam. They show that service personal values and service value strongly impacts customer satisfaction and loyalty toward airline, banking, and healthcare services. The study results show that personal values only influence customer satisfaction. The differences in findings could be attributed to the operationalization of the research model, measures, and study context. This study utilized the list of values (LOV) adapted from Barrena and Sanchez (2013) to measure personal values. Thuy and Hau (2010) utilized items adapted from Lages and Fernandes (2005) to measure service personal values. Social affiliation values (AVE = 0.776) and self-actualization values (AVE = 0.785), with a correlation of ($r = 0.611$) on personal values are better results than reported by Koo et al. (2008). This study demonstrates that the operationalization of personal values offers superior results than simply treating values as a formative construct with reflective measures at a higher level of abstraction (Table 2).

Finally, the general findings suggest that utilitarian, hedonic, and personal values facilitate customer retention or loyalty by fostering customer satisfaction and continuance intention simultaneously (Bhattacherjee, 2001). The study results suggest that customers' choices and actions are value-motivated toward MFS. The higher the level of personal and desired value, the more customers' needs and expectations are satisfied, and the more customers are motivated to continue to use MFS. Higher levels of personal and desired value will lead to customer retention, increased market share, and sustained profitability (Babin et al., 1994; Bhattacherjee, 2001).

Theoretical Implications

This study has several implications for academia. First, this study develops an integrated model that extends the means-end theory to the context of mobile financial services. The model helps to explain how value attributes and desirable value consequences influence customer satisfaction and continuance intention (Woodruff, 1997). The model describes a customer value hierarchy that triggers customer satisfaction and continuance intention (Bhattacherjee et al., 2008; Flint et al., 1997) which increases customers' loyalty and retention.

Second, the study presents a parsimonious value-based model. The model evaluates the performance and impact of perceived and personal values on customers' attitudes and outcome behaviors at a higher level of abstraction (Gutman, 1982, 1997). The model posits that if the use of a mobile financial service conveys desirable value consequences, customers will develop a perception of higher-level customer and personal value consequences. The desirability of these higher-level value consequences conveys higher customer and personal values that facilitate customer satisfaction and outcome behavior toward the mobile financial service (Stahl et al., 1999). The model argues that when personal values and desired value are produced in use situations, and the outcomes (or consequences) are desirable, a value judgment is formed in favor of the service. Desirable consequences convey a perception of higher customer value, which in turn influences customer satisfaction and continuance intention behavior toward the mobile financial service (Flint et al., 1997; Gutman, 1982). A customer's expectation symbolic value attributes are achieved if the use of an MFS promotes customers' beliefs and value, enhances their national identity, and makes life easier for them. The performance of these symbolic value attributes conveys hedonic value consequences at a higher level of abstraction. Desirable hedonic value consequences will deliver higher hedonic value or benefits, which in turn propels the attainment of customer satisfaction and (or) continuance intention.

Third, in contrast to other studies' findings, the study results imply that the impacts of utilitarian, hedonic, and personal values on customers' attitudes and outcome behaviors vary in degree depending on model conceptualization, construct operationalization, the theory upon which the model is grounded, the measures used, and the context of investigation (Ladeira et al., 2016). Hedonic value, at a higher level of abstraction, facilitates customers' retention because of its intrinsic and extrinsic

motivation on customers' attitudes and behavior. Utilitarian value impacts continuance intention and personal values impact customer satisfaction, producing a combined effect to attain customer retention, similar to hedonic value (Bhattacherjee, 2001). Utilitarian, hedonic, and personal values are relevant to achieving customer retention and loyalty.

Finally, the model operationalizes utilitarian, hedonic, and personal values as second-order constructs to capture the impacts of lower-level hierarchy value attributes through secondary or higher-level value consequences on customer satisfaction and continuance intention. The results suggest that formative measures outperform reflective measures regarding criterion validity and are significantly better predictors than reflective measures (Diamantopoulos & Siguaw, 2006). Each second-order construct exposes the relevance that each lower-level hierarchy value attribute has. Formative measures offer the most powerful means of testing and evaluating constructs (Ruiz, Gremler, Washburn, & Carrion, 2008) because formative measures allow omission of measurement items that do not meet sufficient construct validity (Chiu et al., 2014).

Practical Implications

MFS providers and marketing managers can leverage the study findings to reposition their services to attain customer satisfaction and continued usage. The findings suggest that utilitarian, hedonic, and personal values motivate customers to use mobile financial services because of their abilities to convey higher customer benefits at a higher level of abstraction. These benefits motivate customers to form favorable attitudes and outcomes behavior toward mobile financial service. Providing MFS that delivers these customer values will motivate customers to not only use but also to continue to use the service at the post-adoption stage. MFS marketing managers should strive to meet customers' expectations by delivering the customer value attributes represented in this research model to retain existing customers, attract new customers, increase market share, and gain profitability. Customer value attributes can convey desirable customer value outcomes, which can cause positive attitudinal and behavioral changes toward the service.

MFS marketing managers can anticipate desired customer reactions to value-based strategies. MFS marketing managers can estimate the utility that customers will receive when they use their services as well as the corresponding response from customers with regards to their attitudinal change and outcome behaviors. For example, innovative MFS solutions incorporating symbolic, experiential, and aesthetic attributes will convey desirable hedonic value. Hedonic value should be designed to offer greater customer satisfaction and post-outcome behaviors over delivering utilitarian value. Utilitarian value only stimulates continuance intention or personal values, which only influences customer satisfaction (Ladeira et al., 2016). Focusing on providing utilitarian, hedonic, and personal values, provides the greatest benefits that will help to create dual paths to achieving customer satisfaction and continuance behavior. MFS marketing managers designing customer segmentation and differentiation strategies should exploit the study findings and incorporate them into their plans, particularly the specific customer value attributes and value consequences examined in this study.

Second, the simultaneous attainment of customer satisfaction and continuance intention leads to customer retention (Bhattacherjee, 2001; Bhattacherjee et al., 2008). At a higher level of abstraction, the impact of value consequences varies based on context, model, and the measures used. Focusing on providing hedonic value alone, will facilitate attitudinal and behavioral changes that can lead to customer retention and loyalty. The hedonic value of an MFS influences customer satisfaction and continuance intention. The impact of utilitarian value on continuance intention and personal values on customer satisfaction provides complementary effects to attain customer retention. To realize customer retention and loyalty, MFS providers and marketing managers should not only strategize to provide hedonic value alone, but also to provide both utilitarian and personal values because of their impact on customers' attitudes and outcome behaviors. Customer satisfaction strengthens the customer base in different business' contexts, promotes customer retention, increases market share,

and improves profitability for MFS providers. Long-term viability, success, and service survival are reinforced as these values persist.

Third, MFS providers and marketing managers can utilize the study findings to predict customer responses to their MFS offerings by creating and providing innovative value-based MFS as operationalized in the structural model. The model will allow the MFS providers and marketing managers to determine the utility that current and prospective customers are expected to receive when a value-based mobile financial service is offered to them. MFS providers should harness customers' responses to evaluate and predict their attitudinal and behavioral changes toward a mobile financial service offering at a higher level of abstraction. For instance, designing an MFS with symbolic, experiential, and aesthetic value attributes will convey desirable hedonic value consequences. At a higher level of abstraction, a perception of higher customer hedonic value is formed, providing a higher level of customer satisfaction than utilitarian and personal values, and simultaneously influencing continuance intention (Ladeira et al., 2016). MFS providers and marketing managers may utilize the structural model to examine and understand target customer value perceptions, which will allow them to know which components of value attributes and consequences best serve and meet the needs of current and prospective customers.

Finally, the results suggest that when MFS marketing managers strive to provide mobile financial services that have higher levels of hedonic and personal values, stronger perceptions of customer satisfaction are achieved. Customer satisfaction serves as motivation for existing customers to continue to use mobile financial services that are being offered by M-PESA. When a service is created to provide utilitarian and hedonic value, existing customers will not only be satisfied with the service, but they form an intention to continue to use the service being offered. The study results suggest that customer satisfaction serves as a motivation to continue to use mobile financial services. When MFS providers and marketing managers focus on delivering MFS that meets customers' satisfaction, customers will develop loyalty for those services. When MFS providers and marketing managers strategize on providing mobile financial services that can positively generate utilitarian, hedonic, and personal values at a higher level of abstraction, the greater the benefits that are obtainable from service usage to a change in customer's attitude in favor of the service.

LIMITATIONS AND FUTURE RESEARCH

This study extends the means-end theory and proposes a hierarchical approach that explores the impact of hedonic, utilitarian, and personal values on customer satisfaction and continuance intention. M-PESA customers in Kenya were consciously selected as the study population given the unique environment that M-PESA operates in and the widespread acceptance and use of this specific mobile financial service. The study findings are specific to this unique population but should offer insights that extend to other contexts, cultures, and countries. Future research may examine different customers and services (i.e., mobile wallet, mobile healthcare, mobile entertainment, etc.) in different environments to validate the robustness of the study's model and findings.

The data collected and used in the study analysis was cross-sectional. Future studies should obtain and analyze longitudinal data to observe possible dynamism in a customer's continuance intention. Relationships among the study constructs may change as MFS providers execute value-based strategies, which could be fascinating to capture and observe. Additional factors do exist that affect a customer's values, satisfaction, and continuance intention. Future studies should explore those other factors like personality traits to generate a complete understanding of which factors influence customers' attitudes and outcome behaviors.

This study did not consider individual customer differences in customer value-based satisfaction and outcome behaviors. The moderating and mediating roles of individual differences and personality traits could be investigated (Liu, Kauffman, & Ma, 2015; Mohamed, Hussein, Zamzuri, & Haghshenas, 2014). Insights on how individual differences interact with hedonic consumption could provide a solid theoretical foundation for such a study (Jones, Reynolds, & Arnold, 2006).

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APPENDIX

Table 5. Constructs and measures

Constructs	Measurement Items
Utilitarian Value Excellence	1. I value the excellent quality of M-PESA mobile financial services. 2. I value M-PESA provider's expertise in mobile money transfer service.
Monetary	1. I am reasonably charged for using M-PESA mobile financial service. 2. M-PESA mobile financial service offers value for money for using it.
Safety	1. There is adequate security for using M-PESA mobile financial service to make any financial transactions and payments. 2. The confidentiality of my personal information and financial transactions of using M-PESA mobile financial service are securely kept. 3. I believe M-PESA mobile financial service is adequately safe for use because I have transaction confidence in using the service.
Transaction	1. I feel safe using M-PESA mobile financial service to pay for goods and services. 2. I value the pleasure of using M-PESA mobile financial service to make financial transactions from my phone.
Hedonic Value Aesthetic	1. I like M-PESA visual appeal (attraction) attributes. 2. M-PESA mobile financial service phone app (menu) is visually attractive. 3. M-PESA Logo, products, and branding color is attractive.
Experiential	1. I feel happy during and after I use M-PESA mobile financial service to pay for goods and services. 2. I feel good during and after I use M-PESA mobile financial service to make purchases. 3. I enjoy M-PESA mobile financial service during and after I use the service to send and receive money.
Symbolic	1. M-PESA mobile financial service promotes my beliefs and values. 2. M-PESA mobile financial service enhances my national identity. 3. M-PESA mobile financial service makes life easier.
Personal Value Self-actualization	1. M-PESA mobile financial service gives me a sense of belonging (e.g. social, cultural and national). 2. M-PESA mobile financial service gives me a peace of mind, dignity, and self-respect. 3. M-PESA mobile financial service gives me a sense of financial and family security. 4. M-PESA mobile financial service makes me be well-respected and increases my friendly relationship with others (e.g. family, friends, and customers).
Social affiliation	1. M-PESA mobile financial service provides fun, pleasure, and enjoyment of life. 2. M-PESA mobile financial service enhances my quality of life. 3. M-PESA mobile financial service gives me happiness and boosts my emotion. 4. M-PESA mobile financial service makes me feel more successful.
Dependent Variables Customer satisfaction	1. M-PESA meets (fulfills) most of my mobile financial service expectations. 2. M-PESA mobile financial service gives me a satisfying experience. 3. I feel very pleased with M-PESA mobile financial service.
Continuance intention	1. I will continue to use M-PESA mobile financial service. 2. I intend to recommend M-PESA to others. 3. I intend to continue to use M-PESA mobile financial service to pay for goods and services. 4. I intend to continue to use M-PESA mobile financial service to send and receive money.

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