

# A Study of the Consumer-Company Identification on Mobile Application's Attributes and Apparel Purchase Intention

**Zui Chih Lee, Ph.D.**

*New Jersey City University*

**Mengsteab Tesfayohannes, Ph.D.**

*Farmingdale State College*

**Min Jon Kuo, Ph.D.**

*National Dong Hwa University*

## **Purpose**

In this demanding and diversified social commerce market characterized by consumers' quickly changing expectations, service quality for mobile-retailing is imperative. Consumer-Company Identification (CCI) is becoming an important tool for building a company's brand. This research examines how mobile application (app) attributes, mobile-service quality and CCI lead to mobile consumers' purchase intention for apparel products through app.

## **Design/methodology/Approach**

An experimental survey was conducted with 300 respondents. Seven hypotheses were examined by a structural equation model to explore the relationships amongst mobile app attractiveness, mobile-service quality, CCI, perceived usefulness, and consumers' intention to purchase products from the mobile app.

## **Findings**

Our findings supported the relationships amongst consumers' perceived usefulness of the mobile app, mobile-service quality attributes, and consumer purchase intention. Our findings also supported CCI's impact on consumers' intention to purchase through the application of the Technology Acceptance Model.

## **Research implications**

Our research finding showed consumers' psychological attachment toward apparel brands and its mobile app. The research further demonstrated the consumer-retailer relationships, and the findings support consumer purchase pattern through mobile app apparel purchase. Retailers' attention to dimensions of mobile-service quality of app design will strengthen consumers' perceived usefulness of their mobile app.

*Keywords:* TAM model, online apparel shopping, identification, mobile-service quality

## **Introduction**

Mobile commerce has, in recent years, gained prominence within the online and e-tailing business. The Department of Commerce indicated that retail e-commerce sales in 2019 grew to

\$365.2 billion, an increase of 15.7% since 2018. Apparel and accessories e-sales totaled \$103 billion in 2019, up 22.6% year-over-year and is expected to be as high as \$194 billion in 2024 (Clement, 2020). Retailers' investments in online technology (e.g., websites, mobile apps) were intended to meet the diversified demands of mobile commerce market. Distinct from general e-commerce, mobile commerce empowers customers to shop anytime and anywhere without location and time limits (Chen, 2018; Wang et al., 2015). A mobile application (app) is a computer program designed to run on a mobile always-on device such as a smartphone/tablet or smartwatch, with features such as a pocket or purse-size case, smaller screen, virtual keyboard, limited processor, and always-connected Internet (Agrebi & Jallais, 2015; Wang et al., 2015). In this demanding and diversified social commerce market characterized by consumers' quickly changing expectations, mobile application design and service quality for mobile retailing is imperative. Therefore, this study examines the correlation amongst consumers' intention of apparel purchase, the consumer-company identification through company's mobile application attributes. We examine attributes based on dimensions of app attributes (attractiveness, informativeness), and service quality attributes (efficiency, system availability). Based the degree of correlation amongst mobile application attributes, we can determine how mobile search can lead to purchase intention.

### **Literature Review**

App technology is gaining its popularity within mobile commerce market given its ability to provide timely information and a more interactive, immediate, and personal shopping experience (Wang et al., 2015). For marketers, apps enhance the effectiveness of transaction security for personal data more than website cookie that is tracked by the competitors (Sarkar, et al., 2019). In comparison to website shopping, mobile apps provide the advantage of accessibilities such as, search convenience, access convenience, and service recovery convenience (Almarashdeh, et al., 2019; Holmes, et al., 2014; Wang et al., 2015). Efficient service recovery procedure highlights the online interaction and procedures communication, which conveys efficiency, efficacy, and timely perceived procedural justice to customers (Almarashdeh, et al., 2019). Mobile innovations support consumers' decision-making at diversified pre-purchase activities, such as product and price search and alternatives comparison, via apps click-only transactions. As compared to direct sales, retail apps are more suitable for promoting clear product information (Holmes et al., 2014). Furthermore, mobile apps also provide channels for customer retention, reinforcement of customers' existing habits or behaviors, and strengthening customers' loyalty. Mobile retailers can integrate other devices (e.g., desktop computer, notebook) or channels with new information, brands, or products (Wang, et al., 2015; Kim, 2017). Hence, this study applied the Technology Acceptance Model to investigate factors that lead to customers' intention to purchase apparel and accessories solely through an app.

### **Technology Acceptance Model**

The Technology Acceptance Model (TAM)-discusses the interconnectedness amongst the characteristics of a particular technology, its users' attitude, and his/her behavior (Davis, 1986). TAM theorizes consumers' perceived ease-of-use (PEOU) and perceived usefulness (PU) of a particular technology. PEOU speaks to the degree of effort people believe that using a particular technology would require, and is presented as an antecedent to PU. PU refers to the extent potential users believe that using a particular technology can meet their objective. In the mobile environment, previous research indicated that PEOU is not significantly positively correlated to the intention to shop via smartphone. This is because users are usually already accustomed to access to unlimited information via Internet emails on their mobile devices. PU plays a more critical role as compared to PEOU during consumers' mobile shopping (Agrebi & Jallais, 2015; Ooi & Tan, 2016). Therefore, PU is applied in this study to examine consumers' intention to purchase apparel or accessories through a mobile app.

As for the antecedents of PU, previous research confirmed that accessibility, convenience of usage (Kim, et al., 2009), perceived enjoyment (Agrebi & Jallais, 2015), mobile perceived compatibility (MPC), mobile perceived security risk (MPSR) (Ooi and Tan, 2016), and decision-

making styles (i.e., quality, novelty-fashion, and price consciousness) are positively correlated to PU in the mobile environment (Sarkar et al., 2019). This study will further investigate the attributes of app design, the attributes of mobile-service quality during the retailer's online transactions, and Consumer-Company Identification (CCI) as potential antecedents to PU of the mobile app.

In this study, we examined users' intention to purchase apparel and accessories through the mobile app. Users' behavioral intention is the crucial dependent variable in TAM. As for its antecedents, except PU, previous research confirmed perceived enjoyment (Agrebi & Jallais, 2015), habitual purchase (i.e., previous product purchase). Mobile shoppers tend to use mobile devices to shop for habitual products that they already have a history of purchasing (Wang, et al., 2015). Mobile perceived compatibility (MPC) MPC, mobile perceived trust (MPT) were applied to assess a new mobile technology acceptance model (MTAM), which consists of mobile usefulness (MU) and mobile ease of use (MEU) to determine SCC adoption (Ooi & Tan, 2016). The platform identifies habit, price comparison preference, and shopping independence preference (Chen, 2018) to be positively correlated to users' behavioral intention in the mobile environment. In this study, we focused on PU and CCI.

### **Mobile Application Design Attributes**

Mobile application (app) is a type of software designed to run on a mobile device, such as smartphone or tablet. App design is a critical factor for developing technology that fits mobile customers' needs and values related to online shopping and purchases. Hedonic value, spurred by positive e-store image, leads to consumer purchase (Chang & Tseng, 2013). By contrast, utilitarian value emphasizes complete information by users who are more task-oriented, safer transactions, and so on (Agrebi & Jallais, 2015; Holmes et al., 2014). An improved mobile design, which contains both hedonic and utilitarian values, enhances the browsing efficiency for consumers' product search (Lee et al., 2015). App and website features are important for customer relationship management (e.g., affective commitment) and e-loyalty (Bilgihan & Bujisic, 2015). Visually appealing features, with cues (e.g., color and size) that facilitate navigation, result in impulsive online purchases (Liu et al., 2013).

Consumers are attracted by web design such as layout, color, complexity, and processing speed (Chen, et al., 2002; Hausman & Siekpe, 2009). Online stores pique consumers' interest with brand personality around browsing and buying (Brown et al., 2003). Fashion design characteristics significantly sustain consumers' expectations and fulfillment based on how an app functions (Hausman & Siekpe, 2009; Parasuraman et al., 2005; Zhang et al., 2007). Järveläinen (2007) emphasized website's importance in consumers' online search and purchase. Positive Word of Mouth (WOM) occurs when consumers perceive a website or app to be innovative and has superior e-service quality. These attributes promote consumers' loyalty and intentions. O'Cass and Carlson (2012) found that a sport team's website operation success depends significantly on fans' positive brand image and trust toward that sport team's website, which further influences fans' website loyalty. This study measures consumer reactions to app design attribute via two constructs: perceived attractiveness and perceived informativeness.

### **Perceived Attractiveness and Informativeness**

The perceived attractiveness of an app depends on the aesthetics of its graphic design – including layout, color scheme, print size/type, as well as the number of videos, photographs, graphics and animation. These dimensions retain consumers' attention for the product advertisements (Hoffman & Novak, 1996; Hoque & Lohse, 1999; Schlosser & Kanfer, 1999). Veryzer and Hutchinson (1998) found that visual style influences website usage frequency and attitudes towards purchase, which promotes users' perceived usefulness of this technology.

The quality of information is critical for online group buying (OGB) websites for high utility-oriented consumers (Wang, 2016). The quality, credibility, and quantity of consumers' reviews are considered a form of electronic WOM, which leads to online repurchase intention (Matute et al., 2016). Website informativeness measures the magnitude of information for a

product/service to accomplish consumers' shopping objectives. Ducoffe's (1996) Extended Use & Gratification Theory indicated that consumers are motivated by psychological needs beyond those that are strictly tied to their functional objectives. Hence, consumers will continue to choose and use the technology that successfully gratifies their psychological and functional needs. Katz et al. (1973) indicated that consumers are more likely to continue using a form of technology when if that technology satisfies their needs.

Hausman and Siekpe (2009) indicated that the usage of familiar language within a website strengthens consumers' ability to quickly access desired information. Hardware requirement, such as mobile devices' screen size, offers enhanced ease for navigating product information. Well-organized app page and layout maximize consumers' search efficiency to receive quality of information during shopping. Venkatesh, et al (2003), Brown and Venkatesh (2005), and Venkatesh (2006) reported that websites or related online/mobile that offer well organized information and well-developed service foster stronger consumer impression (Lee, et al., 2015). In the study of mobile augmented reality (MAR) app, Dacko (2016) verified that the completeness of information received from the app increases users' conviction in what they are buying. Other benefits, not as apparent as purchase certainty, are increased shopping efficiency and better prices. The hypotheses regarding these two mobile app attributes are as follows:

**H<sub>1</sub>:** A mobile app's perceived *attractiveness* is positively related to consumer perceptions of app usefulness.

**H<sub>2</sub>:** A mobile app's perceived *informativeness* is positively related to consumer perceptions of app usefulness.

### **Mobile-Service Quality Attributes**

Mobile-service quality is defined as the assessment of website/app usefulness related to consumer attitudes toward brand preference, choice of channel, and behaviors. Website quality influences repurchase intention through enhanced customer satisfaction, trust, and commitment in online transaction (Shin et al., 2013). Mobile-services should facilitate consumers in efficiently completing all phases of an online transaction: shopping, purchasing, receiving, and return product. Early research determined that the perception of service quality is based on the services that customers expect a company to offer versus the services that the company actually offers (Grönroos, 1982; Lehtinen & Jarmo, 1982; Lewis & Bernard, 1983; Parasuraman et al., 1985; Sasser et al., 1978). E-business can be conducted largely without human intervention but relies heavily on service quality. Globerson and Maggard (1991) found that well-developed service process was designed to meet consumers' quality expectations toward the website (e.g., for an Appropriate greeting, for timely service). Parasuraman et al. (2005) further suggested that companies that focus on Mobile-service quality will sustain brand impression via customized service.

Different dimensions were applied to improve the quality of a website/app. Cronin and Taylor (1992) found that the service quality dimensions of an intangible operation and service process impact attitudes towards a website. Online or mobile consumers can be easily discouraged by low mobile-service quality attributes, such as lack of customer service responsiveness, inefficient navigation, complexity in payment process, and perceived security risk during a transaction (Elliot & Fowell, 2000; Ooi & Tan, 2016).

System efficiency refers to the ease and speed of accessing and using an app for purchase. System availability refers to the reliability of an app's operations. System efficiency speaks to how well the app functions assist consumers' shopping and purchasing, whereas system availability speaks to whether the app functions are working properly.

Weinberg (2000) found that visitors' evaluation of e-service quality is positively correlated to the speed of a website/app. Parasuraman et al (2005) noted that mobile and online consumers rely more on the impressions of service quality (e.g., package tracking, prompt customer service response). Additionally, Yen and Lu (2008) and Chang et al. (2009) and Lee et al. (2015) reported that online consumers' perception of e-service quality is positively correlated to their intentions to future purchase.

Mobile app's flexibility and the ease-of-use prompt consumers' repeat purchase, word of mouth, retention, cross buying, brand loyalty and satisfaction (Wahab et al., 2011). As for business-to-business market, Luo and Lee (2011) recognized business-to-business marketing improvements in airline industry's e-services by reducing waiting time, which enhances consumers' perceived usefulness of and trust in the company's websites. O' Cass and Carlson (2012) found that website e-service quality was a strong determinant of fans' trust and loyalty toward the sports teams with frequent usage. Su et al. (2015) found that tourism companies, which focus on consumers' positive quality feedbacks of e-service, maintain online satisfaction for future usage of the same website. There are numerous, valid measures of e-service quality (e.g., Barnes & Vidgen, 2002; Wolfenbarger & Gilly, 2003; Zhang et al., 2007). For this study, we will focus on two attributes of mobile-service quality: system efficiency and system availability. Hypotheses regarding the two relevant mobile-service quality attributes are as follows:

**H<sub>3</sub>:** A mobile app's mobile-service quality attribute of *efficiency* is positively related to consumer perceptions of app's perceived usefulness.

**H<sub>4</sub>:** A mobile app's mobile-service quality attribute of *system availability* is positively related to consumer perceptions of app's perceived usefulness.

### **Company-Consumer Identification**

Ashforth and Mael (1989) investigated the role of organizations in individual's social identities and coined the term "organization identity." Organization identification happens when people believe an organization to be associated with the characteristics they consider to be self-referential or self-defining (Pratt, 1998).

Consumer-Company Identification (CCI) is derived from Social Identity Theory (Tajfel and Turner, 1979). Social Identity Theory addresses how individuals identify with social groups. Members of a social group (in-group) identify with that group and then make comparisons with out-groups in an effort to enhance the self-esteem status of the in-group, and thereby increase their own personal self-esteem. Tajfel and Turner (1985) found that when individuals perceive themselves to have membership in a group, their self-esteem rises by positively differentiating their in-group as compared with an out-group based on a value important to them. Walther and Tidwell (1995) reported that people in a group were more interested in other group members who displayed the same social cues they portray and have more positive perceptions of those who showed similar social cues (i.e., identities). Loyal members of a group theoretically try to improve their group's standing (Ricketta and Laderer, 2005).

Extending Social Identity Theory into the realm of marketing, Kramer (1991) reported that organizational consumers often have self-categorization based on various social groups (e.g., gender, ethnicity, occupation, religion, and sport teams). Subsequently, the consumers establish strong ties with social groups' self-categorization process, which helps an individual determine "who am I?" through the comparison of one's own defining characteristics (e.g., personality traits, values, demographics) with those of others (Ashforth & Mael, 1989; Dutton et al., 1994). Solomon and Schopler (1982) and Kleine et al. (1993) found that consumers shop for and own identity-related products to express their belongings with a specific brand or company.

Bhattacharya and Sen (2003) applied Social Identity Theory to develop a framework of the antecedents and outcomes of CCI. This group identification is based on the customers' perceptions that a company and its own identities are similar, distinctive or unique, and reflective

of a desired prestige or status. CCI is then theorized to predict several desired outcomes, including company loyalty, company promotion, consumer recruitment, and consumer resilience to negative information.

Goffman (1959) noted the importance of company logos in such a consumer-company connection process. Later, Ahearne et al. (2005) found that CCI perceptions are derived both from an organization overall, as well as the company representative who interacted with the consumers. This was positively correlated to consumers' related product purchase from the organization (e.g., promoting product, recruiting consumers).

Bonabeau (2004) identified the online strategies that suggested social cues offered via a website could motivate consumers' recognition and association with the website/company. Lee and Yurchisin (2011) found consumers' positive perception of a website to be useful when identifying with the company and its owned brands, and in turn experience CCI. Lee et al. (2015) reported that the website attributes of visual attractiveness, perceptions of e-service quality, and CCI lead to significant perceived usefulness of the website.

In the study of mobile augmented reality (MAR) shopping apps, Dacko (2016)' categorization indicated that consumers with higher experiential orientations have higher intention to download and use retail apps. According to Mathwick et al (2001), Dacko (2016) categorized MAR shopping apps into four types: (1) extrinsic-active value: similar to economic value and give emphasis to customers' return on investment (ROI) and shopping efficiency; (2) extrinsic-reactive value: highlighting the value of service excellence; (3) intrinsic-active value: pursuing the intrinsic enjoyment of shopping or the feeling of escapism by shopping; (4) intrinsic-reactive values: underscoring the visual, aesthetic, or entertainment appeal. The MAR shopping app users would select apps that provide one or several of these values and benefits, which would not be provided in other shopping.

Agrebi and Jallais (2015) implied that consumers would go mobile shopping to fulfill their needs for hedonic or/and utilitarian value. Holmes et al. (2014) concluded a relatively ambivalent phenomenon: some consumers deemed hedonic value (e.g., enjoyment, fun, excitement) as important drivers to adopt mobile shopping, whereas others thought the hedonic value might hinder consumers' willingness to mobile-shop and instead emphasized more utilitarian value (e.g., convenience and accessibility). Chen (2018) indicated customers may use mobile shopping apps to reflect their lifestyles, which are fabricated and affected by one's experience, beliefs, values, culture, family, friends, social classes, and other reference groups. In light of aforementioned Social Identity Theory, consumers are orientated to categorize themselves into various social groups based on gender, ethnicity, occupation, etc. In the self-categorization process, individuals compare their own defining characteristics, e.g., values, personality traits, with those of others (Dutton et al., 1994; Kramer, 1991). Therefore, consumers prefer to choose the tools reflecting or fitting their own values or lifestyles in order to acquire their specific objectives or benefits. In other words, consumers would instinctively or deliberately adopt the shopping apps with a high level of CCI and perceive that using the apps can enhance delivery their objectives (i.e., perceived usefulness, PU). Thus, the hypothesis regarding CCI is as follows:

**H<sub>5</sub>:** Consumers' consumer-company identification (CCI) is positively related to consumers' perceptions of app's usefulness.

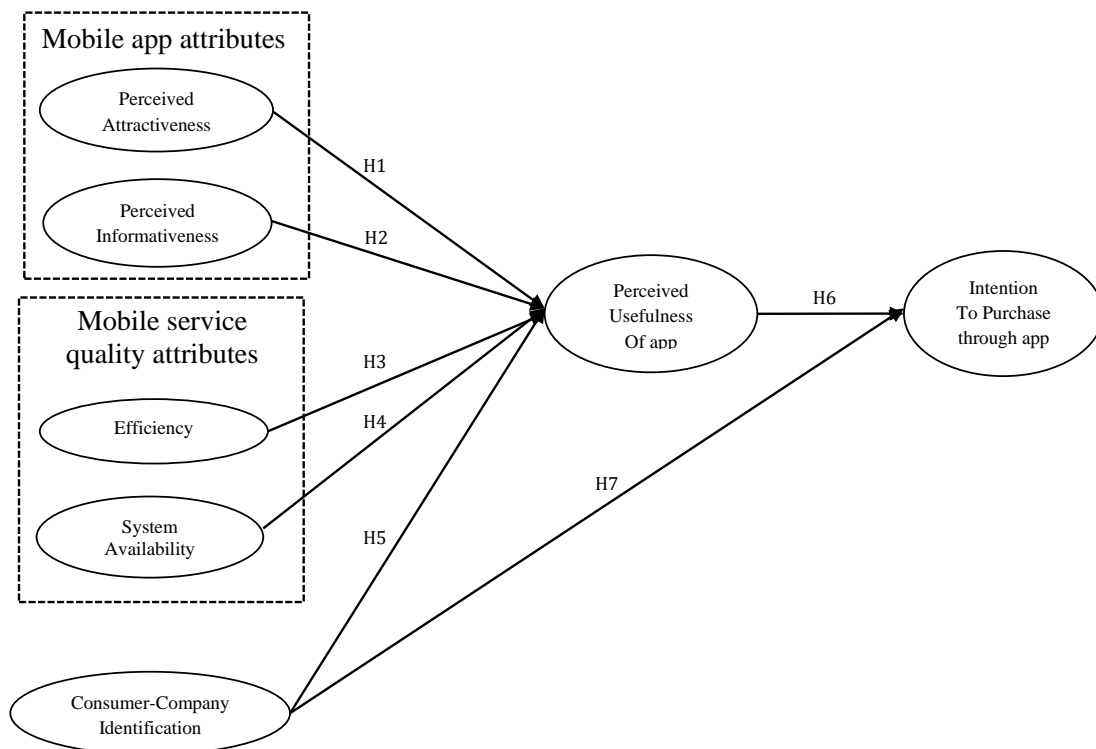
Apparel purchase aims to deliver consumers' self-image in accordance with the personal characteristics of products, such as trendiness, sophistication, level of luxury and self-esteem. App/brand/company attempts to align its image to its consumer's personalities. This emotional and trustful bond provides consumers a natural motive for online shopping (Lee and Yurchisin, 2011). The more consumers perceive the website to be useful, the more likely they will conduct future purchase (Lee et al., 2015). Perceived usefulness of telebanking was proven as a significant driver of behavioral intention (Alalwan, 2016). Therefore, based on TAM, the following hypothesis about the mobile app is proposed:

**H<sub>6</sub>:** Consumers' perceived usefulness of a mobile app is positively correlated to the intention to purchase apparel and accessories from the mobile app.

Store brand identification has significant social influence on consumers' brand loyalty and their store purchase intention (Calvo-Porrall & Levy-Mangin, 2016). Mobile app's identification is theorized to act as a mediating factor that combines purchase search streams with consumer behavior. This new branding strategy is for online retailers to develop a relationship bond with the customer (So et al., 2016). We have inferred that consumers' CCI is positively correlated to their perceptions of app's usefulness and the perceived usefulness is positively correlated to consumers' intention to purchase apparel and accessories from the mobile app. According to Elaboration Likelihood Model (ELM) of persuasion (Petty and Cacioppo, 1984), under the central route, persuasiveness is driven by consumer's level of message consideration and elaboration on the true merits of a subject, for example, consumer consider it useful to purchase apparel and accessories from their mobile app. The CCI here arises from different cues and the CCI itself is also a cue. This study planned to examine the effect of the CCI to purchase apparel and accessories from the mobile app (i.e., the peripheral route) without considering its usefulness (i.e., the central route). Hence, we put forth the following hypothesis:

**H<sub>7</sub>:** Consumers' consumer-company identification (CCI) is positively related to their intention to purchase apparel and accessories from the mobile app.

**Figure 1** - Hypothesis model



## Measurement

### *Questionnaire Development*

A survey was developed to test hypotheses based on participants' previous experience with the mobile app (see Appendix). The questionnaire consisted questions for measuring conceptual constructs. The first section contained a four-item measure adapted from Lee et al. (2015). Participants were directed to think of their favorite mobile app while rating their level of agreement

with each of the items on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

After the pilot study from summer 2016, the “majority” of 30 business major students selected a company’s app. The participants were asked to evaluate the clarity of instrument items. All aspects of the questionnaire were presented, including wording, question content, sequence, form and layout, question difficulty, and instructions. Relevant editorial changes were employed based on the feedback of participants.

#### *Description of Sample and Responses*

The experimental survey was completed by 300 participants, with a total of 250 usable questionnaires, and the demographic information is displayed in Table 1.

**Table 1** – Demographic Information

Characteristics	Frequency / Percentage	
<b>Number of Respondents</b>	Total: 250	
<b>Gender</b>	Total	Percentage
Male	66	26.6%
Female	183	73.4%
Missing	1	0.3%
<b>Age (Mean), Standard Deviation</b>	22	5.06
<b>Ethnicity</b>		
Caucasian	158	62.2%
African-American	48	18.2%
Hispanic-Latino(a)	7	3.1%
Asian-American	3	1.0%
Other	34	12.4%
<b>Year at school</b>		
Freshmen	57	22.8%
Sophomore	50	20.0%
Junior	64	25.5%
Senior	56	22.4%
Graduate level	23	8.6%
<b>Major</b>		
Marketing and consumer studies	104	41.6%
Business Administration and related major	89	35.4%
Other Majors	57	23.0%
<b>Monthly income</b>		
Under \$300	75	28.9%
\$300-\$499	58	23.1%
\$500-\$749	38	15.2%
\$750-\$999	18	7.9%
\$1000-\$1299	29	10.7%
\$1300 or more	32	12.4%

#### *Measurement Model Analysis*

Factor analysis consists of exploring the patterns of relationships among variables. These patterns are represented by what are called factors. Examination of the loadings of variables on each factor helps to identify the character of underlying dimensions. Confirmatory factor analysis (CFA) was conducted to assess the validation of scales for the measurement of specific constructs. Each construct is assessed by its own indicators. The model contains indicators and latent variables (labeled as constructs).

**Table 2** - Descriptive statistics and correlations

Model Variable	Mean	Std. Dev	Correlations							
			1	2	3	4	5	6	7	
1. PA	5.7	0.9	<b>(0.85)</b>							
2. IN	5.7	0.9	0.55**	<b>(0.85)</b>						
3. EF	6.0	0.8	0.58**	0.57**	<b>(0.76)</b>					
4. SA	5.3	1.6	0.38**	0.33**	0.47**	<b>(0.60)</b>				
5. CCI	4.5	1.7	0.48**	0.34**	0.33**	0.41**	<b>(0.88)</b>			
6. PU	5.7	1.2	0.58**	0.55**	0.59**	0.39**	0.48**	<b>(0.91)</b>		
7. IP	4.0	2.0	0.32**	0.23**	0.28**	0.39**	0.72**	0.42**	<b>(0.98)</b>	

Note: \*, if  $p < 0.05$ ; \*\*, if  $p < 0.01$ . The bold diagonal values are the square root of the average variance extracted for each construct.  
1. PA = Perceived Attractiveness; IN = Perceived Informativeness; EF = Mobile-Service Efficiency; SA = Mobile-Service System Availability; CCI = Consumer-Company Identification; PU = Perceived Usefulness; IP= Intention to Purchase through app.

*Reliability and Validity*

First, all standardized factor loadings were greater than 0.50 except the SA-1 and SA-4 of the mobile-system availability construct and the EF-3 of the mobile-service efficiency (see Table 3), which indicates reasonable convergent validity (Nunnally and Bernstein, 1994). Measurement model analysis was used to assess the reliability and validity of measurement items. First, Cronbach's  $\alpha$  was used to assess reliability related to internal consistency between constructs and set an acceptable level that is more than 0.7 (Hair et al., 1998). Cronbach's  $\alpha$  values ranged from 0.86 to 0.96 (excluding the mobile-service quality construct, which has the lowest Cronbach's  $\alpha$ , 0.62), and thus indicate high internal consistency among items.

Second, convergent validity refers to the degree to which the items of a specific construct share a proportion of variance in common (Hair et al., 1998). High convergent validity indicates that measurement scales meet the intended concept. Three standards to measure convergent validity were used: (1) a factor loading value larger than 0.5; (2) Composite reliability (CR) larger than 0.7; (3) Average variance extracted (AVE) larger than 0.5 (Bagozzi & Yi, 1988; Fornell & Larcker, 1981; Hair et al., 1998). CR also tests the internal consistency of the measured items representing a latent construct (Hair et al., 1998). As shown in Table 3, factor loading values ranged from 0.25 to 0.98, with most results above 0.7, therefore meeting acceptable levels. The CR ranged from 0.61 to 0.98, with most in the 0.9 range. AVE values exceeded the threshold of 0.5, from 0.36 to 0.95, indicating the convergent validity of constructs is acceptable and explained a relatively high level of variance in common (Fornell & Larcker, 1981).

Lastly, discriminant validity requires a construct to be distinctive from other constructs. The square root of the AVE must be greater than its correlations with other latent constructs (Fornell and Larcker, 1981). As shown in Table 2, the values of square root of the AVE ranged from 0.60 to 0.98, greater than its correlations with other latent constructs. These results indicate that discriminant validity exists between constructs.

**Table 3 - Factor Loading, Reliability, CFR, and AVE**

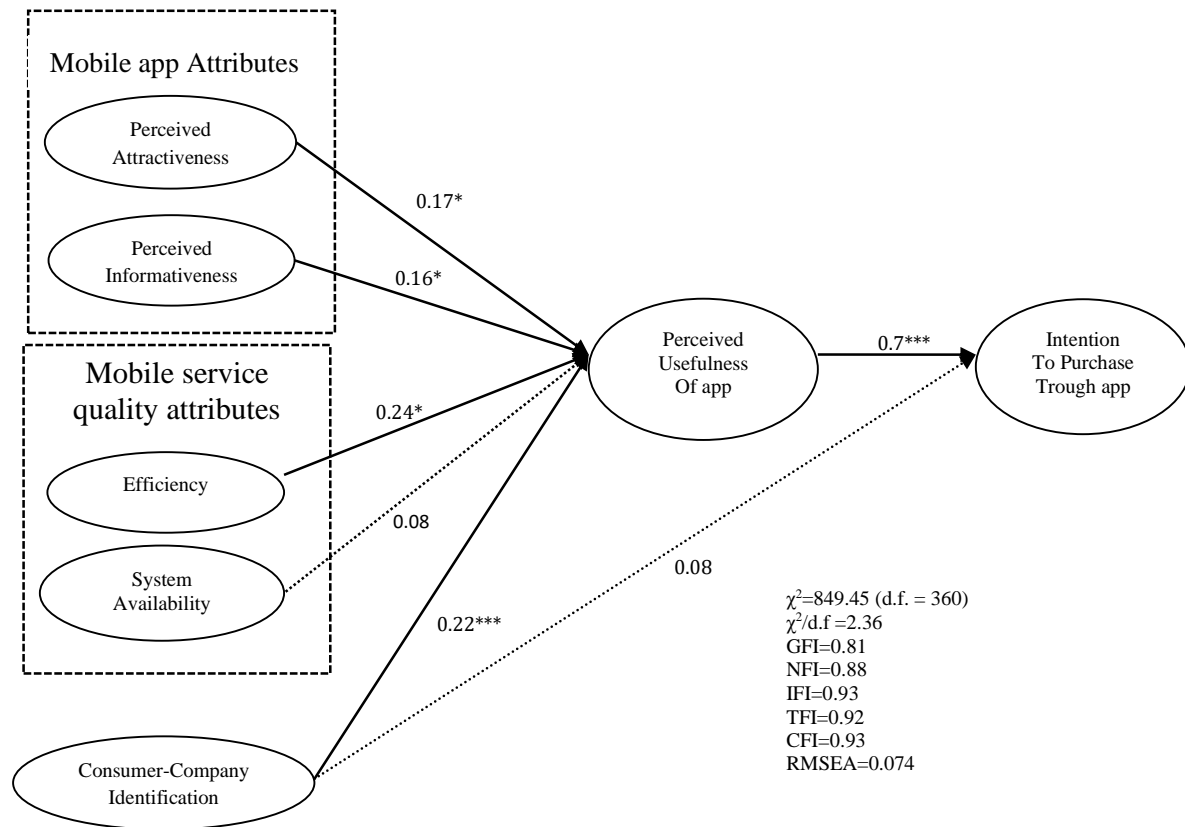
Construct	Standardized Factor Loading	Construct Reliability (Cronbach's á)	Composite Factor Reliability (CFR)	Average Variance extracted values (AVE)	
Perceived Attractiveness (PA)	PA1	0.88	0.91	0.91	0.72
	PA2	0.84			
	PA3	0.86			
	PA4	0.82			
Perceived Informativeness (IN)	IN1	0.89	0.86	0.88	0.72
	IN2	0.83			
	IN3	0.82			
Mobile-Service Efficiency (EF)	EF1	0.76	0.91	0.90	0.57
	EF2	0.72			
	EF3	0.25*			
	EF4	0.76			
	EF5	0.65			
	EF6	0.84			
	EF7	0.73			
	EF8	0.83			
Mobile-Service System Availability (SA)	SA1	0.38*	0.62	0.61	0.36
	SA2	0.79			
	SA3	0.50			
	SA4	0.43**			
Consumer-Company Identification (CCI)	CCI1	0.90	0.93	0.95	0.82
	CCI2	0.85			
	CCI3	0.85			
	CCI4	0.92			
	CCI5	0.85			
Perceived Usefulness of app (PU)	PU1	0.77	0.89	0.98	0.95
	PU2	0.94			
	PU3	0.96			
	PU4	0.95			
Intention to Purchase through app (IP)	IP1	0.96	0.96	0.94	0.76
	IP2	0.98			
	IP3	0.98			
<p>Note:</p> <p>* The standardized factor loading of the item is less than .50. Cronbach's á, CFR, and AVE are calculated after deleting the item.</p> <p>** The item is not deleted for keeping enough indicators although the loading is less than .50.</p>					

## Structural Model Analysis and Hypotheses Testing

### Model Testing

Structural equation modeling (SEM) was conducted using the full information maximum-likelihood estimation procedure through AMOS 26. The full model had a  $\chi^2$  test-statistic of 849.45 (d.f. = 360;  $p < .000$ ), and fit indexes were GFI=0.81, NFI=0.88, IFI=0.93, TLI=0.92, and CFI=0.93. The model's RMSEA index is 0.074, with a 90 percent confidence interval between 0.067 and 0.080, indicating an acceptable model fit for the data (see Figure 2).

**Figure 2 - SEM results**



**Note:** (z-value; two-tailed) \*z-value=1.96 (p< .05), \*\*z=2.58 (p<.01), \*\*\*z=3.45 (p<.001).

1. Indicator variables, correlations among exogenous variables, and disturbances have been omitted for notational simplicity
2. Coefficients from completely standardized solution
3. Dotted lines indicate the hypothesis is not supported

## Discussion

In Figure 2, H<sub>1</sub> was supported. Specifically, the positive and direct relationship predicted in H<sub>1</sub> between perceived attractiveness and perceived usefulness was supported by the data ( $\beta_1=0.17$ ,  $z = 2.16$ ,  $p < .05$ ). This result corresponds with the findings of Chen and Wells (1999), Chen et al. (2002), and Hausman and Siekpe (2009). The Use and Gratification Theory suggests that a high level of informativeness and engagement, along with low level of irritation, are factors that will likely generate a favorable impression of a website (Chen et al., 2002). Perceived usefulness was related to respondents' attitudes toward the app or website, similar to a relationship found by Agarwal and Venkatesh (2002) and Hu et al. (2009). Results supported that users decide whether to use mobile app based on perceptions of its attractiveness (e.g., design, layout, colors). This finding is consistent with a study by Lee et al. (2015). Seock and Norton (2008), which indicated that attractiveness was important to perceptions of a website's usefulness, as well as findings by Chen and Wells (1999), Moon (2004), and Song and Zinkhan (2003). In this study, it is possible that respondents' perceived usefulness was affected by users' familiarity with the store and its carrying product brands.

H<sub>2</sub> predicting a positive relationship between app informativeness and perceived usefulness, was supported ( $\beta_2=0.16$ ,  $z = 2.13$ ,  $p < 0.05$ ). The information offered by the app (e.g., context informativeness) was found to be significant to users' perceptions of app's usefulness.

These findings suggest that in order to increase consumer's perceived usefulness of an app, an informative function and instruction which emphasis on visual design are important.

The positive relationship between mobile-service quality-efficiency and perceived usefulness of mobile app ( $H_3$ ) was supported ( $\beta_3= 0.24, z = 2.00, p < 0.05$ ). The more consumers perceive efficiency from app usage, the more likely it is that consumers will use the mobile app. With an efficient app design (e.g., fast and filter search functions, price comparisons, three-dimensional product presentation, and colorful layout), consumers can assess the specific qualities of the product.

The positive relationship between mobile-service quality-system availability and perceived usefulness of mobile app ( $H_4$ ) was not supported ( $\beta_4= 0.084, z = 0.73, p > 0.05$ ). The download speed and availability may not be a significant consideration for app users because consumers may expect the mobile environment to have different signal strengths. The service should combine online and offline activities. Within the mobile environment, the typical mobile service communication tools such as discussion forums, virtual chats, emails, and FAQs may not be presented in a consistently stable Internet environment, e.g., at home or in the office (Almarachdeh et al., 2019). Customers usually do not distinguish the mobile system availability from the whole service image when they evaluate the mobile-service quality. The relatively unstable mobile connection exacerbates the image, leading to an assessment of decreased usefulness.

Social Identity Theory showed individuals' attempt to fit-in through identification with a group (Tajfel & Turner, 1979). Consumers have a greater tendency to purchase product/service from companies/brands relevant to their self-identity. They prefer to shop at stores whose organizational identities are similar to their own, also known as consumer-company identification (CCI).  $H_5$ , predicting a positive relationship between CCI and perceived usefulness of mobile app, was also supported ( $\beta_5= 0.22, z = 3.66, p < .001$ ), similar to the results of Kleine et al. (1993), Lee et al. (2015), and Solomon and Schopler (1982). Consumers' sense of belongingness facilitates CCI identification with an app and strengthens a positive attitude by enhancing their product or purchase experiences.

Consumers collect information and knowledge through repeated online usage (Alba & Hutchinson, 2000; Koufaris, 2002; Raju et al., 1995). Analyzing consumers' behavioral intentions,  $H_6$  predicted a positive relationship between perceived usefulness of the mobile app and consumers' intention to purchase. This was supported by the data ( $\beta_6= 0.70, z = 12.08, p < 0.001$ ), confirming the theory that perceived usefulness is a predictor of behavioral intention (Venkatesh & Morris, 2000).

Lastly,  $H_7$ , which examined the positive correlation between CCI and users' intention to purchase apparel within the mobile app, was not supported. According to Elaboration Likelihood Model (ELM) of persuasion (Petty and Cacioppo, 1986), a consumer can be persuaded through central route (i.e., via perceived usefulness) or peripheral route. The statistical result evidenced that the effect of persuasion through central route was stronger than the peripheral route. CCI may indirectly influence consumers' intention to purchase apparel and accessories through the perceived usefulness of the app itself. Perceived usefulness of the app acts as a mediator between CCI and consumers' intention for mobile shopping.

Similar to Brown and Venkatesh (2005), this study found that a mobile app is perceived to be useful and increases consumers' intention to purchase apparel and accessory. CCI is a relatively significant factor influencing perceived usefulness ( $H_7$  is not supported) of a mobile app, thus strengthening the gap in the TAM model.

### **Conclusion and Implications**

This study examined the drivers leading to consumers' intentions to use an app to search for information and purchase of apparel products. According to the findings, perceived attractiveness (e.g., color, layout) is a significant attribute that influences the perceived usefulness of an app.

Additionally, the research provided an understanding of how consumers evaluate the mobile app as useful. Online/Mobile advertisement may employ advisors and decision-supporting technologies that interact with their consumers via instant text message to communicate product shipping and payment confirmation through mobile devices.

Thirdly, this study examined the causal relationship of consumers' perceived usefulness of the company's app toward their intention to purchase apparel products from the app. Results of this study support the positive relationship between consumers' perceived usefulness and purchase intentions (Agrebi & Jallais, 2015; Kim et al., 2009; Mathieu & Zajac, 1990; Meyer et al., 2002; Riketta, 2002; Zhang et al., 2007). Our study provides CCI as another variable in Theory of Reasoned Action (TRA) and TAM to predict perceived usefulness and further intention to purchase. Mobile marketing strategies should address brand/image similarities between the company's identity and consumers' personalities, values, and lifestyles to significantly foster stronger CCI.

Previous research has indicated that consumers tend to use apps to conduct habitual products/services purchase from the retailers that they have trading experience before. The products/services that mobile consumers purchase are often the ones with which they are most familiar, have low involvement, and with short consumption cycles (Wang et al., 2015). By contrast, the research also indicated that consumers tend to use mobile device to conduct pre-purchase activities, such as information search and alternatives review.

Consumers require an extended period of time to gain additional information during their planning to purchase products or services, with high or medium-involvement, which experience longer consumption cycles (Holmes et al., 2014). Mobile app supports in-store shopping and post-purchase. On the other hand, an app allows consumers to assess whether the products or services align to what they are seeking (Dacko, 2016). App purchases have the advantages of mobile devices, such as timeliness and convenience. App designers also need to deal with challenges such as smaller screen, unstable processing speed, and reduced security (Wang et al., 2015). In addition to the functionality, consumers also demand a more attractive layout to further satisfy their service needs (including fun, excitement, and enjoyment), as well as utilitarian values (including timely information updates, higher discount).

Retailers and marketers should not view an app as a replication of the Internet, but as a mobile supplement for current Internet-based activities (Holmes et al., 2014). Companies should launch a collection of apps, instead of relying on one single app, to cater to users' diversified expectation of needs and values (Kim et al., 2017). Consumers can comfortably browse apps to assess primary prices/product information and check-out through email or alternative internet platform for the final purchase decision. Apps with timely promotion updates can also facilitate consumers' in-store shopping. It is critical for mobile's seamless experience and more user-efficient browsing environment by integrated Omni-channel stores, websites, and apps to better function and benefit from mobile shopping experience.

Apparel and accessories retailers can consider designing apps for different product features and target segments. The app could focus more on the brand image advertisement, push notification service, and other promotion activities. Perceived attractiveness of an app may be more useful for better customer engagement. In contrast, for consumers who seek lower priced and generic items from apps, the apps should focus more on perceived informativeness and service efficiency to facilitate consumers' comparison and search efficiency.

Consumer-Company Identification (CCI) provides another route to enhance consumers' mobile search and purchase. Apparel retailers and marketers should understand mobile customer expectation, including individual's values, personality traits, and lifestyles. Mobile apps' design and advertisement content should continually enhance the visual presentation and services quality attributes in accordance with the company's target customers' characteristics and brand attitudes. A well-designed mobile app with a high level of CCI, can exude the perception of appeal, trustworthiness, and a sense of belongingness. This will sustain the customer's journey that leads to a strong sense of usefulness toward further intention of purchase, which is the key impact for this study.

## Limitations and Recommendations for Further Research

This study relied on respondents' predisposition to an app. Therefore, limitations result from the individual preference of each respondent. For instance, individuals that were assigned to an app they liked had a more positive or different response than individuals who were assigned to an app of a product that he/she was not familiar. Secondly, the research was limited by the fact that it was a single time survey and carried out in a 15-20-minute period. It is likely that different consumers need varying time durations when browsing and searching through an app. Thus, results may differ if respondents did not have a time limit for completing the survey. Thirdly, respondents may not have been motivated to shop on the assigned app and may prefer an app with products or brands with which they identify more strongly.

## References

- Agarwal, R. & Venkatesh, V. (2002). Assessing a firm's web presence: A heuristic evaluation procedure for the measurement of usability. *Information Systems Research*, 13(2), 168–186.
- Agrebi, S. & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, 22, 16–23.
- Ahearne, M., Bhattacharya, C.B. & Gruen, T. (2005). Antecedents and consequences of customer-company identification: Expanding the role of relationship marketing. *Journal of Applied Psychology*, 90(3), 574–585.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P. & Simintiras, A.C. (2016). Jordanian consumers' adoption of telebanking. *The International Journal of Bank Marketing*, 34(5), 690–709.
- Alba, J.W. & Hutchinson, J.W. (2000). Knowledge calibration: What consumers know and what they think they know. *Journal of Consumer Research*, 27(2), 123–156.
- Almarashdeh, I., Jaradat, G., Abuhamdah, A., Alsmadi, M., Alazzam, M.B., Alkhasawneh, R. & Awawdeh I. (2019). The difference between shopping online using mobile apps and website shopping: A case study of service convenience. *International Journal of Computer Information Systems and Industrial Management Applications*, 11, 151–160.
- Ashforth, B.E. & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20–39.
- Bagozzi, R.P. & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94.
- Barnes, S.J. & Vidgen, R.T. (2002). An integrative Approach to the assessment of e-commerce quality. *Journal of Electronic Commerce Research*, 3, 114–127.
- Bilgihan, A. & Bujisic, M., (2015). The effect of website features in online relationship marketing: A case of online hotel booking. *Electronic Commerce Research and Applications*, 14(4), 222–232.
- Bhattacharya, C.B. & Sen, S. (2003). Consumer-company identification: A framework for understanding consumers' relationship with companies. *Journal of Marketing*, 67(2), 76–88.
- Bonabeau, E. (2004) The perils of the imitation age. *Harvard Business Review*, 82(6), 45–54.
- Brown, M., Pope, N. & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, 37(11/12), 1666–1684.
- Brown, S.A. & Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS Quarterly*, 29(3), 399–426.
- Calvo-Porrall C. & Levy-Mangin, J.-P. (2016). Food private label brands: the role of consumer trust on loyalty and purchase intention. *British Food Journal*, 118(3), 679–696
- Chang, E.C. & Tseng Y.F. (2013). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, 66(7), 864–870.
- Chang, H.H., Wang, Y.H. & Yang, W.Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Management & Business Excellence*, 20(4), 423–443.
- Chen, H.J. (2018). What drives consumers' mobile shopping? 4Ps or shopping preferences?. *Asia Pacific Journal of Marketing and Logistics*, 30(4), 797–815.

- Chen, Q., Gillenson, M.L. & Sherrell, D.L. (2002). Enticing online consumers: An extended technology acceptance perspective. *Information Management*, 39(8), 705–719.
- Chen, Q. & Wells, W.D. (1999). Attitude toward the site. *Journal of Advertising Research*, 39(5) 27–37.
- Clement, J. (2020). U.S. fashion and accessories e-retail revenue 2017-2024. *Statista 2020*, <https://www.statista.com/statistics/278890/us-apparel-and-accessories-retail-e-commerce-revenue/>
- Cronin, J.J. & Taylor, S.A. (1992). Measuring service quality-Reexamination and extension. *Journal of Marketing*, 56(3), 55–68.
- Dacko, S.G. (2016). Enabling smart retail settings via mobile augmented reality shopping apps. *Technological Forecasting & Social Change*, 124, 243–256.
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Ducoffe, R.H. (1996). Advertising value and advertising on the web. *Journal of Advertising Research*, 36, 21–35.
- Dutton, J.M., Dukerich, J.M. & Harquail, C.V. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39(34), 239–263.
- Elliot, S. and Fowell, S. (2000). Expectations versus reality: A snapshot of consumer experiences with Internet retailing. *International Journal of Information Management*, 20(5), 323–336.
- Fornell, C. & Larcker, D. (1981). Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Globerson, S. & Maggard, M.J. (1991). A conceptual model of self-service. *International Journal of Operations & Production Management*, 11(4), 33–43.
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*, Doubleday, Garden City, NY.
- Grönroos, C. (1982). An Applied Service Marketing Theory. *European Journal of Marketing*, Vol. 16, No. 7, pp. 30–41.
- Hair, J.F., Anderson, R.E., Tatham, R.L. & Black, W.C. (1998). *Multivariate data analysis*, Prentice-Hall International, Inc., New York, NY.
- Hausman, A. & Siekpe, J.S. (2009). The effect of web interface features on consumer online purchase intentions. *Journal of Business Research*, 62(1), 5–13.
- Hoffman D.L. & Novak, T.P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, 60(3), 50–68.
- Holmes, A., Byrne, A. & Rowley, J. (2014). Mobile shopping behaviour: insights into attitudes, shopping process involvement and location. *International Journal of Retail & Distribution Management*, 42(1), 25–39.
- Homburg, C., Wieseke, J. & Hoyer, W.D. (2009). Social identity and the service-profit chain. *Journal of Marketing*, 73(1), 38–54.
- Hoque, A.Y. & Lohse, G.L. (1999). An information search cost perspective for designing interfaces for electronic commerce. *Journal of Marketing Research*, 36(3), 387–394.
- Hu, P.J.H., Brown, S.A., Thong, J.Y.L., Chan, F.K.Y. & Tam, Y.K. (2009). Determinants of service quality and continuance intention of online services: The case of eTax. *Journal of the American Society for Information Science and Technology*, 60(2), 292–306.
- Järveläinen, J. (2007). Online purchase intentions: An empirical testing of a multiple-theory model. *Journal of Organizational Computing & Electronic Commerce*, 17(1), 53–74.
- Katz, E., Gurevitch M. & Haas, H. (1973). On the use of the mass media for important things. *American Sociological Review*, 38(2), 164–181.
- Kim, C., Mirusmonov, M. & Lee, I. (2009). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, 26(3), 310–322.
- Kim, M., Kim, J., Choi, J. & Trivedi, M. (2017). Mobile shopping through applications: Understanding application possession and mobile purchase. *Journal of Interactive Marketing*, 39, 55–68.
- Kleine, R., Kleine, S.S. & Kernman, J.B. (1993). Mundane consumption and the self: A social-identity perspective. *Journal of Consumer Psychology*, 2(3), 209–235.

- Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information System Research*, 13(2), 205–224.
- Kramer, R.M. (1991). Intergroup relations and organizational dilemmas: The role of categorization processes. *Research in Organizational Behavior*, 13, 191–207.
- Lee, H.H., Kim, J. & Fiore, A.M. (2010). Affective and cognitive online shopping experience: Effects of image interactivity technology and experimenting with Appearance. *Clothing and Textiles Research Journal*, 28(2), 140–154.
- Lee, Z.C., Hodges, N. & Watchravesringkan, K. (2015). ‘An investigation of antecedents and consequences of consumers’ attitudes toward an Apparel website. *International Journal of Electronic Customer Relationship Management*, 9(2/3), 138–157.
- Lee, Z.C. & Yurchisin, J. (2011). The impact of website attractiveness, consumer-website identification, and website trustworthiness on purchase intention. *International Journal of Electronic Customer Relationship Management*, 5(3/4), 272–287.
- Lehtinen, U. & Lehtinen, J.R. (1982). Service quality: A study of quality demensions. unpublished working paper, Service Management Institute, Helsinki, Finland.
- Lewis R.C. & Booms, B.H. (1983). The marketing aspects of service quality. in Berry L., Shostack, G. and Upah G. (Eds): *Emerging Perspectives on Services Marketing*, 99–107, American Marketing, Chicago, IL.
- Liu, Y, Li, H. & Hu, F. (2013). Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. *Decision Support Systems*, 55(3), 829–837.
- Luo, S. & Lee, T. (2011). The influence of trust and usefulness on customer perception of e-service quality. *Social Behavior and Personality: An international journal*, 39, 825–838.
- Mathieu, J.E. & Zajac, D.M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171–194.
- Mathwick, C., Malhotra, N., & Rigdon, E. (2001). Experiential value: conceptualization, measurement and application in the catalog and Internet shopping environment. *Journal of Retailing*, 77(1), 39–56.
- Matute, J., Polo-Redondo, Y. & Utrillas, A. (2016). ‘The influence of EWOM characteristics on online repurchase intention. *Online Information Review*, 40(7), 1090–1110.
- Meyer, J.P., Stanley, D.J., Herscovitch, L. & Topolnytsky, L. (2002). Affective, continuance and normative commitment to the organization. *Journal of Vocational Behavior*, 61(1), 20–52.
- Moon, B. (2004). Consumer adoption of the Internet as an information search and product purchase channel: Some research hypotheses. *International Journal of Internet Marketing and Advertising*, 1(1), 104–118.
- Nunnally, J.C. & Bernstein, I.H. (1994) *Psychometric theory* (3<sup>rd</sup> Ed.), McGraw-Hill, New York, NY.
- O’Cass, A. & Carlson, J. (2012). An empirical assessment of consumers' evaluations of web site service quality: Conceptualizing and testing a formative model. *Journal of Services Marketing*, 26(6), 419–434.
- Ooi, K.-B. & Tan, G.W.-H. (2016). Mobile technology acceptance model: An investigation using mobile users to explore smartphone credit card. *Expert Systems with Application*, 59, 33–46.
- Parasuraman, A., Zeithaml, V.A. & Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41–50
- Parasuraman, A., Zeithaml, V.A. & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–233.
- Petty, R.E. & Cacioppo, J.T. (1984). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123–205.
- Pratt, M.G. (1998). To be or not to be: Central questions in organizational identification. In Whetten, D.A. and Godfrey, P.C. (Eds.): *Identity in Organizations: Building Theory Through Conversations*, pp.171–207. Sage Publications, Thousand Oaks, CA.
- Raju, P.S., Lonial, S.C. and Mangold, W.G. (1995). Differential effects of subjective knowledge, objective knowledge, and usage experience on decision making: An exploratory investigation. *Journal of Consumer Psychology*, 4(2), 153–180.

- Riketta, M. (2002). Attitudinal organizational commitment and job performance: A meta-analysis. *Journal of Organizational Behavior*, 23(3), 257–266.
- Riketta, M. & Landerer, A. (2005). Does perceived threat to organizational status moderate the relation between organizational commitment and work behavior?. *International Journal of Management*, 22(2), 193–200.
- Sarkar, S., Khare, A. & Sadachar, A. (2019). Influence of consumer decision-making styles on use of mobile shopping applications. *Benchmarking: An International Journal*, 27(1), 1–20.
- Sasser, W.E. Jr., Olsen, R.P. & Wyckoff, D.D. (1978) *Management of Service Operations: Text and Cases*, Allyn & Bacon, Boston, MA.
- Schlosser, A.E., Shavitt, S. & Kanfer, A. (1999). Survey of Internet users' attitudes toward Internet advertising. *Journal of Interactive Marketing*, 13(3), 34–54.
- Shin, J.I., Chung, K.H., Oh, J.S. & Lee, C.W. (2013). The effect of site quality on repurchase intention in Internet shopping through mediating variables: The case of university students in South Korea. *International Journal of Information Management*, 33(3), 453–463.
- Seock, Y.K. & Norton, M.J.T. (2008). College students' perceived attributes of Internet website and online shopping. *College Student Journal*, 42(1), 186–198.
- So, K.K.F., King, C., Sparks, B.A. & Wang, Y. (2016). Enhancing customer relationships with retail service brands: The role of customer engagement. *Journal of Service Management*, 27(2), 170–193
- Solomon, M. & Schopler, J. (1982). Self-consciousness and clothing. *Personality and Social Psychology Bulletin*, 8(3), 508–514.
- Song, J.H. & Zinkhan, G.M. (2003). Features of web site design, perceptions of web site quality, and patronage behavior. *Proceedings of Annual Meeting of the Association of Collegiate Marketing Educators*, Houston, TX.
- Su, L., Huang, S.S. & Chen, X. (2015). Effects of service fairness and service quality on tourists: Behavioral intentions and subjective well-being, *Journal of Travel & Tourism Marketing*, 32(3), 290–307.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In Austin, W. and Worchel, S. (Eds.): *The Social Psychology of Intergroup Relations*, 33–47, Brooks/Cole, Monterey, CA.
- Tajfel, H. & Turner, J.C. (1985). The social identity theory of inter-group behavior. In Worchel, S. and William, G.A. (Eds.), *Psychology of Intergroup Relations*, 6–24, Nelson-Hall, Chicago, IL.
- van der Heijden, H. (2003). Factors influencing the usage of websites: The case of a generic portal in the Netherlands. *Information & Management*, 40(6), 541–549.
- Venkatesh, V., & Morris, M. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *MIS Quarterly*, 24(1), 115–140.
- Venkatesh, V. (2006). Where to go from here? Thoughts on future directions for research on individual-level technology adoption with a focus on decision making. *Decision Sciences*, 37(4), 497–518.
- Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Veryzer, R.W., Jr. & Hutchinson, J.W. (1998). The influence of unity and prototypicality on aesthetic responses to new product designs. *Journal of Consumer Research*, 24(4), 374–394.
- Wahab, S., Zahari, A.S.M., Al Momani, K. & Nor, N.A.M. (2011). The influence of perceived privacy on customer loyalty in mobile phone services: An empirical research in Jordan. *International Journal of Computer Science Issues*, 8(2), 45–52.
- Walther, J.B. & Tidwell, L.C. (1995). Nonverbal cues in computer-mediated communication, and the effect of chromatics on relational communication. *Journal of Organizational Computing & Electronic Commerce*, 5(4), 355–379.
- Wang, R.J.-H., Malthouse, E.C. & Krishnamurthi, L. (2015). On the go: How mobile shopping affects customer purchase behavior. *Journal of Retailing*, 91(2), 217–234.

- Wang, S.T. (2016). The moderating role of consume characteristics in the relationship between website quality and perceived usefulness. *International Journal of Retailing and Distribution*, 44(6), 627–639.
- Weinberg, B.D. (2000). Don't keep your Internet customers waiting too long at the (virtual) front door. *Journal of Interactive Marketing*, 4(1), 30–39.
- Wolfenbarger, M. & Gilly, M.C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, 79(3), 183–198.
- Yen, C.-H. & Lu, H.-P. (2008). Effects of e-service quality on loyalty intention: An empirical study in online auction. *Managing Service Quality*, 18(2), 127–146.
- Zhang, J., Fang, X. & Liu, S.O. (2007). Online consumer search depth: Theories and new findings. *Journal of Management Information Systems*, 23(3), 71–95.

**Appendix:** Adopted measurement items definition and source

Table 4: Sources of Scales

Constructs	Number of Items	Examples	Literature Source(s)
Mobile app attributes	4	Perceived attractiveness <ul style="list-style-type: none"> <li>• The layout of this app is attractive.</li> <li>• The colors on the app are attractive.</li> <li>• The design of this app is eye-catching.</li> <li>• Overall, I find this app looks very nice.</li> </ul>	van der Heijden (2003) Lee, et al (2015)
	3	Perceived Informativeness <ul style="list-style-type: none"> <li>• This app is a good source of product information.</li> <li>• This app supplies relevant information for my purchase decision.</li> <li>• This app function is informative about the company's product.</li> </ul>	Hausman & Siekpe (2009)
Mobile-service quality attributes	8	Efficiency <ul style="list-style-type: none"> <li>• This app makes it easy to find what I need.</li> <li>• It is easy to browse anywhere on the app.</li> <li>• This app enables me to complete a transaction quickly.</li> <li>• Information at this app is well organized.</li> <li>• This app loads its pages fast.</li> <li>• This app is simple to use.</li> <li>• This app enables me to get on to it quickly.</li> <li>• This app is well organized.</li> </ul>	Parasuraman et al. (2005)
	4	System availability <ul style="list-style-type: none"> <li>• This app is always available for business.</li> <li>• This app launches and runs right away.</li> </ul>	

		<ul style="list-style-type: none"> <li>• This app does not crash.</li> <li>• Pages at this app do not freeze after I enter my order information.</li> </ul>	
Perceived usefulness of the app	4	<ul style="list-style-type: none"> <li>• I find this app is useful.</li> <li>• The app improves my shopping performance.</li> <li>• The app enhances my shopping effectiveness.</li> <li>• The app increases my productivity in searching and purchasing products.</li> </ul>	Hausman and Siekpe (2009)
Consumer-company identification	5	<ul style="list-style-type: none"> <li>• I strongly identify with this company/app.</li> <li>• I feel good about being a customer of this company/app.</li> <li>• I like to tell others that I am a consumer of this company/app.</li> <li>• This company/app image fits me well.</li> <li>• I feel attached to this company/app.</li> </ul>	Lee et al. (2015) Homburg et al (2009)
Intention to purchase through the app	3	<ul style="list-style-type: none"> <li>• I intend to purchase through this app in the near future.</li> <li>• It is likely that I will purchase through this app.</li> <li>• I expect to purchase through this app in the near future.</li> </ul>	Hausman and Siekpe (2009)