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U.S. consumer m-commerce involvement: Using in-depth interviews to propose an acceptance model of shopping apps-based m-commerce

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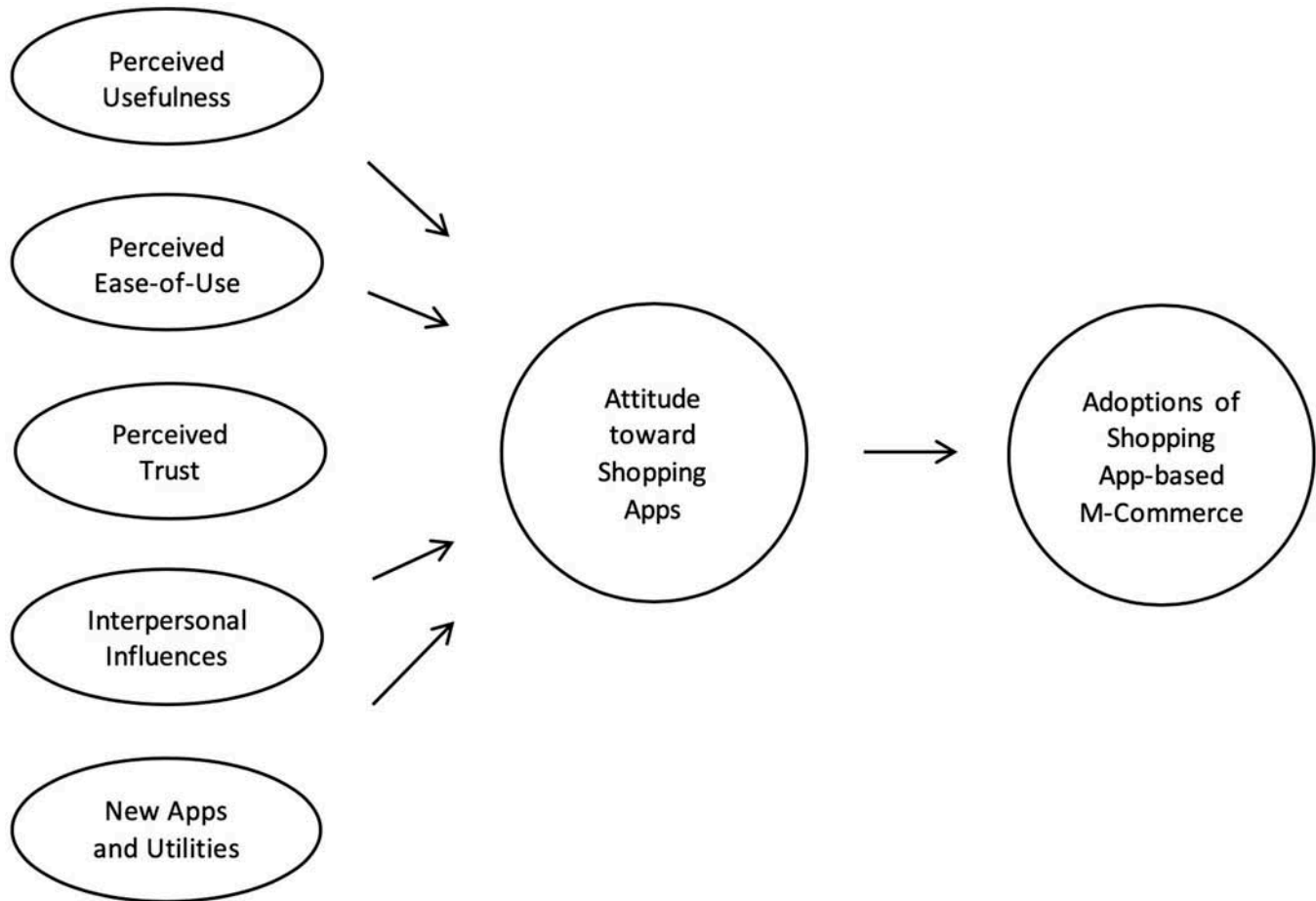
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[Shopping App-Based M-Commerce Acceptance Model]

MARKETING | RESEARCH ARTICLE

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MARKETING | RESEARCH ARTICLE

U.S. consumer m-commerce involvement: Using in-depth interviews to propose an acceptance model of shopping apps-based m-commerce

Hyuk Jun Cheong¹ and Sufyan Mohammed-Baksh^{1*}

Abstract: M-commerce refers to electronic commerce (e-commerce) using mobile devices such as smartphones. M-commerce takes two different forms: one using mobile web browsers, and the other, using smartphone shopping apps. Conducting in-depth interviews with fourteen different smartphone users who regularly purchase products and services using shopping apps, this study explored motivational factors that drive consumers to use shopping apps. Based on themes that the interviews discovered, the authors propose shopping app-based m-commerce acceptance model (MAM) that incorporates components of Technology Acceptance Model and Consumer Acceptance of Technology. We also propose ways in which MAM can be used by practitioners as well as scholars to enhance mobile app-based marketing, and open up a new area of academic research.

Subjects: Services Marketing; Marketing Research; Consumer Behaviour; International Marketing; Internet / Digital Marketing /e-Marketing; Marketing Communications; Marketing Management

Keywords: M-commerce; mobile marketing; lived experiences; technology acceptance model; consumer acceptance of technology; qualitative research; in-depth interviews

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PUBLIC INTEREST STATEMENT

M-commerce refers to electronic commerce (e-commerce) using mobile devices such as smartphones. For this study, authors conducted in-depth interviews on fourteen participants to evaluate their smartphone-based shopping behavior, and the motivational factors that affect shopping app use. Based on the interviews, the authors uncovered five themes that influence customers' smartphone-based shopping behavior. As part of the findings, the study also proposed a new shopping app-based m-commerce acceptance model (MAM) that is different from existing e-commerce models as it exclusive to smartphone based shopping. The study notes implications for researchers and practitioners of m-commerce, qualitative research, and consumer behavior.

1. Introduction

With the widespread use of smartphones, Americans have rapidly adopted them as a major communication device (Hinarejos, Isern-Deya, Ferrer-Gomila, & Huguet-Rotger, 2019; Lane, Miluzzo, Lu, Peebles, & Choudhury, 2010). A recent Pew research study found that 96% of Americans own cellphones of some type. Of this, 81% own smartphones (Pew Research Center, 2018), which is a dramatic increase in a span of just a few years. In fact, according to a report by the Pew Internet & American Life Project, around 55% of mobile phone users accessed the Internet using their mobile phones in April 2012 (Smith, 2010). Among Millennials, almost 100% of young adults in the U.S. own a cell phone and 94% of the group own a smartphone (Pew Research Center, 2018). Almost 77% of U.S. adults download apps (Olmstead & Atkinson, 2015).

Mobile commerce or m-commerce has four unique components that make it an effective marketing platform. The utility of m-commerce lies in its flexibility and mobility of service objects. M-commerce is most useful for people desiring instantaneous or on-demand services while on the move. Most m-commerce based apps work within the parameters of the mobile device's physical restraints, as well as within the cultural norms related to privacy and user's personal utility requirements. Whereas e-commerce is based around a static transactional model, m-commerce is ubiquitous to on-the-move interactions and transactions. Additionally, customers using m-commerce are perceived to be more empowered than e-commerce because mobile technologies enable users to voice their beliefs and preferences instantaneously and continuously (Khansa, Zobel, & Goicochea, 2012; Lin, Wang, Wang, & Lu, 2014).

Along with the increased number of smartphones, owners and users of mobile Internet, U.S. consumers have increasingly adopted mobile commerce (m-commerce) as one of their major shopping methods (Ko, Kim, & Lee, 2009). In 2019, approximately 80% of shoppers used smartphones to research products and 79% of smartphone users made purchases using their mobile devices (Smith, 2019). This is a dramatic increase from around only 11% of the U.S. consumers participating in m-commerce since as recently as 2010 (Smith, 2010), while only 26% had used their mobile devices to research and browse goods and services during the same year (Oracle, 2011). M-commerce is emerged to be a huge trend in retailing, as most online retailers (e.g., Target, BestBuy, Amazon) offer free smartphone shopping apps. However, the motivational factors that drive consumers to download and use shopping apps still remain in question, this study attempted to fill this gap by interviewing smartphone owners who have used shopping apps about why and how they engage in m-commerce, and how they engage in m-commerce, by exploring their experiences with mobile devices (McCracken, 1988).

Finally, to explore consumers' use of mobile technology for m-commerce, we used Davis (1989) Technology Acceptance Model (TAM) as the theoretical underpinnings guiding this study. TAM is a very popular model used to better understand information technology from the consumer-use context. TAM has also been widely used to explore the why and how consumers adopt various technological innovations (Davis, Bagozzi, & Warshaw, 1989).

2. Literature review

We conducted an in-depth study of existing literature on four major topics we found useful to explain consumers' use of, and interactions with mobile technology in general and m-commerce based shopping apps in particular. The initial part of this literature review focused on existing research on consumer interactions with e-commerce, mobile phones, and m-commerce. We then explored Davis (1989) Technology Acceptance Model (TAM) to better understand the motivations behind consumers' use of technological innovations. Finally, exploring TAM led us some more theories that explain various aspects of consumers' interactions with technologies, and may be useful for future researchers exploring similar topics. Some of these theories include, Consumer

Acceptance of Technology (CAT) (Kulviwat, Bruner, Kumar, Nasco, & Clark, 2007) and Mehrabian and Russell (1974) theory of PAD (*Pleasure, arousal, and dominance*).

2.1. M-commerce & e-commerce

The existing literature provides several definitions of m-commerce (Khalifa & Shen, 2008), with some being broader than others are. In a broad sense, m-commerce refers to “the use of mobile devices (particularly mobile phones) to conduct electronic business transactions, such as product ordering, electronic banking, and stock trading” (Khalifa & Shen, 2008, p. 111). By this definition, m-commerce includes both business-to-business (B2B) and business-to-consumer (B2C) commerce. However, the current study focuses primarily on B2C m-commerce because a major purpose of this research is to investigate individual consumers’ experiences and use of m-commerce. Typical activities of B2C m-commerce include finding stores, comparing prices, researching product reviews and recommendations, researching product information using QR code-scanning applications, finding coupons and deals using smartphone apps, and purchasing products (Hinarejos et al., 2019; Khalifa & Shen, 2008; Ko et al., 2009).

Several research studies have suggested that m-commerce is a subset of electronic commerce (i.e., e-commerce), because it is a type of e-commerce that uses mobile phones for similar purposes (Coursaris & Hassanein, 2003; Lin et al., 2014). However, academic research pertaining to m-commerce is essential because the existing literature regarding e-commerce has not fully explored the nature and the implications of e-business via mobile phones (Hinarejos et al., 2019; Kim, Lee, & Lee, 2004; Lin et al., 2014). A major characteristic of m-commerce that differentiates it from e-commerce using personal computers is the mobility of the transaction devices (Kao, 2009; Lin et al., 2014); utilizing m-commerce, people can engage in e-business in real time via their mobile devices (Hinarejos et al., 2019; Nagi & Gunasekaran, 2007).

Consumers can engage in m-commerce via two different ways. First, they can visit online shopping malls and make purchases using mobile Internet browsers such as Apple Safari, Google Chrome, and Mozilla Firefox for Mobile (Cox, 2009; Lin et al., 2014). This type of m-commerce uses the phone’s native or downloaded web browsers, and can be conducted using smartphones as well as feature phones (i.e., low-end mobile phones that include fewer computing abilities than smartphones). The second type of m-commerce uses shopping apps (i.e., mobile shopping tools, mostly free of cost, distributed by online retailers to smartphone owners) which consumers can download using their smartphones (Chang, Lin, & Chi, 2015; eMarketer, 2010). Shopping apps offer owners several benefits because they are customized to the computing abilities and the screen sizes of smartphones as well as the businesses they represent. For example, the Domino’s Pizza app allows users to track the making to delivery process of their pizza (*Pizza Tracker*) in addition to allowing users to customize and order pizza. This shopping app-based m-commerce is a more advanced version of m-commerce, and has been adopted at a rapid pace by smartphone owners. However, due to the recency and rapid evolution of the technologies associated with shopping apps, scholars have not studied m-commerce extensively.

Largely, consumer behavior in the context of m-commerce can be studied using traditional frameworks of the consumer decision-making processes (Heijden, Verhagen, & Creemers, 2003). Decision-making frameworks describe how consumers reach purchase decisions through multiple steps—problem recognition (i.e., awareness of need), pre-purchase information search, evaluation of alternatives, purchase decision, purchase, and post-purchase evaluations (Arens, Schaefer, & Weigold, 2008)—, and consumers go through all of these steps when they are engaged in m-commerce activities (Hinarejos et al., 2019).

2.2. Differences between mobile apps and shopping apps

Apple was the first company to launch its app store in July 2008 followed by Google’s Android Market in September 2008 and Blackberry’s App World in 2009 and later joining the App store in 2014 (Linnhof & Smith, 2017). A report by ASSOCHAM (2016) found that mobile platforms are used for

almost 60-65% of all online sale transactions. The report also found that first-time users of m-commerce apps tend to worry about credit card fraud (ASSOCHAM, 2016). On the other hand, consumer retention is one of the most significant challenges faced by shopping app providers (Nielsen, 2015). Lu (2014) found that continually increasing users' satisfaction and continuous use are the two most important determinants of m-commerce based apps. Unlike traditional mobile apps, mobile shopping apps involve security and privacy issues because m-commerce transactions involve financial and personal information. This results in elevated consumer concerns for privacy and security issues when using shopping apps (Yang & Forney, 2013). In addition, more specifically for new users, mobile shopping provokes anxiety due to its newness and uniqueness, which sometimes becomes a barrier for m-commerce (Yang & Forney, 2013).

2.3. Technology acceptance model (TAM)

Looking more closely at smartphone owners' intentions to adopt m-commerce technology, and the formations of their attitudes toward it, researchers of this study found Davis (1989) Technology Acceptance Model (TAM) useful because it describes well the process of consumers adopting new technologies (Ko et al., 2009).

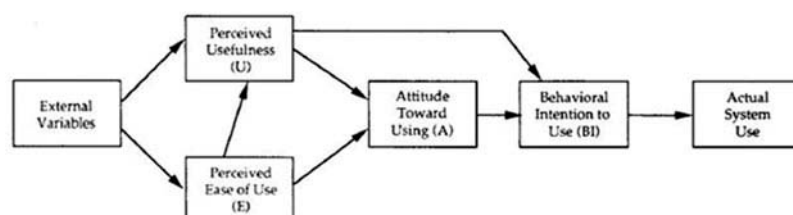
TAM is one of the most widely used information system models. It provides explanations of the cognitive determinants of the adoption of a wide range of technology innovations (Davis et al., 1989). According to the TAM, an individual's intention to adopt a new technology is determined by his/her attitude toward the use of technology, which is in turn, determined by two cognitive aspects: *perceived usefulness* and *perceived ease-of-use* (Kulviwat et al., 2007). The TAM model is shown in the Figure 1.

According to the TAM, an *actual use* of a new technology is determined by *behavioral intention to use*, which is also determined by both the *person's attitude toward using the technology*, and the *perceived usefulness of that technology*. Even though the model presents the *perceived usefulness-behavioral intention to use* relationship, the relationship was not considered for the purposes of this study. The main reason for this was that the relationship building process was based in an organizational/work productivity setting. A basic assumption of the relationship was that, even if people do not have positive attitudes toward using a new technology, they often use the technology if it increases their job performance (Davis et al., 1989).

Perceived usefulness: Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). This perceived usefulness is positively associated with the intentions to adopt a technology innovation, because it influences consumers to have favorable attitudes toward using the new technology. These attitudes eventually lead the consumers to the *behavioral intention to use* and *actual use* of the technology (Davis, 1989; Davis et al., 1989; Heijden et al., 2003).

Perceived ease-of-use: Although perceived ease-of-use and *perceived usefulness* are closely associated, they are two different dimensions (Davis et al., 1989). *Perceived ease-of-use* means, "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). This is also positively related to the adoption intentions and the attitudes

Figure 1. Technology Acceptance Model (TAM, Davis et al., 1989).



toward a new technology, because it reflects the amount of effort that a person needs to make in order to learn and use a technology innovation (Ko et al., 2009), and difficulty of use can create a huge barrier to adopting a new technology (Heijden et al., 2003).

The external variables provided in the TAM were also not used for the current study, because the original studies of the TAM included external variables in an organizational/productivity context, such as task characteristics, organizational structure, training, user involvement in design, etc. (Davis et al., 1989; Venkatesh & Davis, 1996).

2.4. Consumer acceptance of technology (CAT)

Affective determinants such as *perceived enjoyment* also play an important role in consumers' formation of attitudes toward, and intentions to accept a new technology (Davis, 1989; Heijden et al., 2003; Ko et al., 2009). *Perceived enjoyment* is defined as "the extent to which the activity of using the technology is seen as enjoyable in its own right, aside from any performance consequences resulting from system usage" (Ko et al., 2009, p. 675). This is very influential on attitude formations toward e-commerce and online purchase intentions, along with cognitive determinants such as *perceived usefulness* and *perceived ease-of-use* (Zhou, Dai, & Zhang, 2007). This is supported by the theory of the Consumer Acceptance of Technology (CAT) (Kulviwat et al., 2007), which was developed by incorporating TAM's *perceived usefulness* and *perceived ease-of-use* with Mehrabian and Russell (1974) theory of PAD (*Pleasure, arousal, and dominance*). The CAT model is illustrated in the Figure 2.

In summation, most of the literature in m-commerce, app-based shopping, and consumer acceptance and experiences with mobile shopping deals with the topics in singularity. Several models and theories have been proposed in this space, but none of them address consumers' experiences specifically with m-commerce. A new model is required that explores and connects several important constructs related to consumer motivations and behavior as it relates to mobile

Figure 2. Consumer Acceptance of Technology (CAT) model (Kulviwat et al., 2007).



shopping and m-commerce. We conducted fourteen in-depth interviews to propose the new M-commerce Acceptance Model (MAM).

3. Research questions

Existing literature pertaining to people's adoption of a new technologies has explored both cognitive factors such as *perceived usefulness* and *perceived ease-of-use*, and affective factors including *pleasure*, *arousal*, and *dominance* (Davis, 1989; Davis et al., 1989; Kulviwat et al., 2007). Existing research has not closely explored consumers' adoption of a shopping app-based m-commerce, because shopping apps, the core idea of this study, are a relatively new concept.

The current study attempts an in-depth investigation into how and why smartphone owners engage in shopping app-based m-commerce, by exploring consumers' lived experiences with their use of smartphone shopping apps. Three major research questions were proposed to guide the study:

RQ1. What motivating factors influence shopping behavior using mobile apps?

RQ2. How do smartphone owners experience the shopping app-based m-commerce?

RQ3. Are there any new apps or new utilities in m-commerce that are different from the traditional ways in which m-commerce shopping has been conducted?

4. Methodology

To gain an in-depth understanding of consumers' adoption of shopping app-based m-commerce, and experiences interacting with their smartphones for shopping, open-ended in-depth interviews were used for data collection for the current study. In-depth open interviews allow researchers to see the essence of participants' experiences concerning a phenomenon (Creswell, 1998), by providing a great "opportunity to step into the mind of another person" (McCracken, 1988, p. 8).

The researchers conducted fourteen in-depth interviews. Participants of the interviews were recruited by a purposive sampling and snowball sampling methods, the most widely used sampling methods in qualitative research (Patton, 1990). Smartphone owners who have not experienced shopping apps, or who have not made any purchase using their apps were excluded from the interviews. Most of the questions in the interview were designed to better understand participants' motivations for adoption of shopping app-based m-commerce and their experiences with the app-based mobile shopping.

All participants were recruited from two large universities. One was a large public university located in the Southeastern United States while the other was a large private university based in Northeastern United States. The sample included four graduate students, six undergraduate students and four university employees. More students were included in the study because using student samples is more effective than random samples when studying a fairly new technology, which is heavily used by the student population in the United States (Lee, Lee, & Eastwood, 2003). In addition, student samples may provide early signals associated with m-commerce (Jih & Lee, 2003–2004) because college students adopt smartphone technologies faster than any other group (Lepp, Barkley, & Karpinski, 2014). However, we recruited four non-student adults to find out if there were any overwhelming differences based on age. The investigators proceeded recruiting and interviewing until the interview data reached a point of saturation and redundant data emerged (Creswell & Creswell, 2018; Saunders et al., 2017) (See Table 1 for demographic characteristics of the interviewees).

An interview guide was developed, based on the review of the literature, and was utilized for the interviews. It included four "grand-tour" questions with associated probes (McCracken, 1988). Grand tour questions are designed to ask the interviewee to give a verbal tour of something with which they are extremely familiar. The major benefit of grand tour questions is that they get the interviewees comfortable about talking to the interviewer and the idea of divulging

Table 1. Study Participant Characteristics (fictitious names used)

| Pseudonym | Gender | Age | Occupation | Type of Smartphone | Average Time Spent on Smartphones (daily) |
|-----------|--------|-----|------------------------------|--------------------|---|
| Christina | Female | 29 | Grad student | iPhone | 1.5 hours. to 2 hours |
| Wendy | Female | 30 | Video Engineer/ Grad student | iPhone | 2 hours |
| James | Male | 23 | Grad student | iPhone | 1.5 hours to 2 hours |
| Andrea | Female | 54 | Secretary | iPhone | 2 hours |
| Bob | Male | 21 | UG Student | Samsung Galaxy | 2 hours to 3 hours |
| Gabby | Female | 21 | UG Student | iPhone | 2 hours |
| Mike | Male | 24 | Grad Student | Samsung Galaxy | 1 hour to 2 hours |
| Peter | Male | 46 | Film Producer | iPhone | 1 hour to 1.5 hours |
| Colleen | Female | 22 | UG Student | iPhone | 3 plus hours |
| Brian | Male | 21 | UG Student | iPhone | 2 hours to 3 hours |
| John | Male | 45 | Blogger | iPhone | 4 hours to 5 hours |
| Christine | Female | 39 | Counsellor | Samsung Galaxy | 2 hours |
| Abigale | Female | 21 | UG Student | iPhone | 1 hours to 2 hours |
| Ben | Male | 24 | UG Student | Samsung Galaxy | 1 hour |

information (Leech, 2002). The grand tour questions we included explored each respondent's tendencies to use their mobile device, their major mobile activities, and their thoughts about shopping using their mobile phones. Even though the interview guide includes associated probes, the follow-up questions depended on the initial information provided by the participants; that is, a participant's responses to the "grand-tour" questions determined which probes followed (McCracken, 1988). The interview guide is included in the Appendices of this study (See Appendix A).

The interviews were conducted in comfortable surroundings in which the participants would not be distracted, and all interviews were audio-recorded with a digital voice recorder or a smartphone voice recorder. Upon the completion of each interview, the audio files were reviewed several times and transcribed verbatim by a hired outside agency. Notes were taken regarding new apps or new utilities in m-commerce, which provided the basis of the results. The interviews ranged from 21 to 42 minutes.

4.1. Data analysis

Two primary investigators conducted data collection and analysis. Both researchers were trained in conducting in-depth interviews and analyzing qualitative data. All fourteen interviews were voice recorded and transcribed verbatim. Following established guidelines for conducting and analyzing in-depth interviews (Leech, 2002), each researcher analyzed the data using the interview transcripts. Once analysis was complete, the researchers had several meetings and together, identified themes, compared findings against existing literature and then made conclusions.

To prevent researcher bias, i.e., any misinterpretation of research data to draw certain research findings, "member-checking" (also known as "respondent/participant validation") was performed (Birt, Scott, Cavers, Campbell, & Walter, 2016; Lincoln & Guba, 1985). In particular, the investigators had several meetings with three interviewees and reviewed the research manuscript and analysis. The interviewees confirmed that the investigators did not misinterpret their interviews nor misreport their analyses in the research manuscript.

5. Findings

The in-depth interviews revealed why the participants have engaged in shopping app-based m-commerce, their perceptions toward m-commerce, and their unique experiences with it. The major findings reveal several themes that emerged from the data analysis. A model describing consumers' acceptance of shopping app-based m-commerce is presented by comparing the emerged themes with the cognitive and affective determinants of technology acceptance presented by Davis's (1989) TAM and Kulviwat et al.'s (2007) CAT.

Before presenting the answers to the three proposed research questions, participants' general usages of smartphones are provided to illustrate their everyday experiences with mobile phones. Almost all participants considered themselves heavy users of their smartphones; they used their mobile phones between one hour and five hours per day. They also indicated that they use their mobile phones for almost "everything." The activities mentioned by the participants include calling, texting, checking and updating various social media accounts, emailing, web browsing, listening to music, taking photos, checking news/weather, watching videos with the YouTube app, social networking, sending and receiving money, and shopping. In addition, the participants indicated that they use their mobile phones predominantly for entertaining themselves more than for communicating with others:

- Wendy:* It's very rare that I actually use it as a phone; I text a lot, and I use the internet a lot. I Google things randomly. I use it for the GPS, the Google maps a lot and just different apps—just fun, silly things.
- Christina:* ... I use the camera a lot. I take photographs; I check up on twitter. I guess I use the twitter app a fair amount. Anytime I want to buy a Groupon, I will now use my Groupon app to buy it because it's so much easier than going to the website. I have a bank app here for my banking, so I can log in and see my bank account.
- Andrea:* I use my phone mostly to talk to my husband and text my daughter. I will play some games when I am bored. I also spend a lot of time checking my Facebook, Instagram and Snapchat accounts but it is mostly to see what is going on in my daughter's life. I also use Dominos app a lot because it is cheaper to buy pizza using the app.
- John:* I use my phone for my blogging and I buy and sell quite frequently on eBay. I like buying things for my wife and kids and eBay has great deals and products from all over the world.

After asking participants what kinds of activities they perform with their smartphones, another question regarding what kinds of apps they have downloaded was asked. All the participants indicated that they have downloaded a variety of apps, including mobile radios, photo-resizing apps, navigations, weather news apps distributed by the Weather Channel, news apps (e.g., CNN and USA Today mobile), barcode-scanning apps, coupon apps (e.g., Groupon), gaming apps, social networking apps (e.g., Facebook, Snapchat, Instagram and Twitter), money transfer/banking apps (Venmo), and shopping apps (e.g., eBay, Amazon, and Target). Eight participant had downloaded the Netflix app. The researcher asked shopping app-related questions and probes after the participants answered the question on whether they used any types of shopping apps. Take the conversation between the researcher and Wendy, Mike and Colleen for example:

i.) Researcher: Okay, what kind of apps have you downloaded?

Wendy: Let's see, lots of games, and I have the weather channel, Sun Trust banking, Facebook, a couple of blogs that I look at a lot, eBay, Trip Advisor, and quiz game.

Researcher: How many apps are actually related to shopping?

Wendy: Probably just eBay.

ii.) Researcher: What kind of apps have you downloaded?

Mike: I have Fortnite, and some other game apps, I have Venmo to send and receive money from my parents and friends. I have Facebook, Snapchat, Instagram and GroupMe for social networking and I have Amazon, eBay and Priceline for shopping. I also use the Uber app a lot when I am in the city and going out drinking.

iii.) Researcher: Tell me about the apps you have downloaded.

Colleen: Besides the social media apps like Facebook, Insta(gram) and Snap(chat), I have the Nordstrom and Saks (Fifth Avenue) app because I look for trendy clothes and shoes there and then I have eBay and Amazon to buy clothes I find on Nordstrom and Saks.

Since the interviews focused more on the interview questions and probes regarding shopping apps and m-commerce, several themes emerged from the interviews. Figure 3 provides the shopping app-based m-commerce acceptance model, which was generated by analyzing the emerged themes.

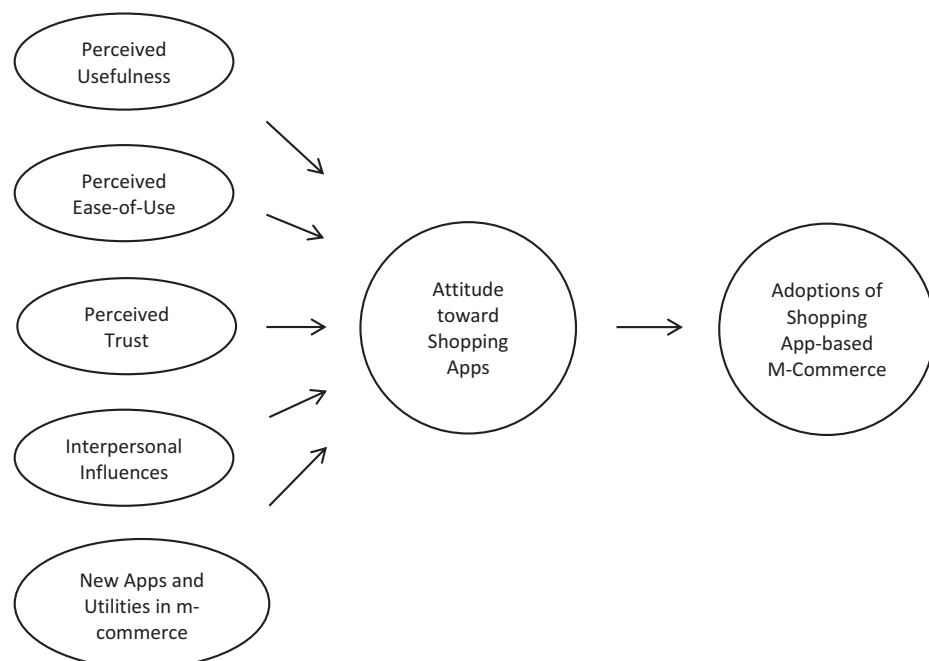
5.1. Perceived usefulness

The participants indicated that they decided to download shopping apps when they thought the apps were useful. Existing literature supports this idea by providing evidences indicating that *perceived usefulness* is largely influential on people's intentions to adopt a new technology (Davis, 1989; Heijden et al., 2003). Bob, Gabby, Wendy, and Christine noted:

Bob: I use the Amazon app all the time. I have Amazon Prime so it is free shipping always. I buy everything from Amazon, even the smallest things like toilet paper or pencils. It is cheap and it gets delivered the next day. Plus, because I have access to Prime Videos, I get to watch many movies and shows for free. I think my second favorite app is Dominos. Pizzas cost like five or six bucks when you use the app. My friends and I will order Dominos at least three times a week.

Wendy: When you're trying to win something on eBay, you sort of have to wait until it's about to end, until you can put in that final bid. Otherwise, it's just the strategy there is to it, so it's really helpful that you can be anywhere and you can still be checking. Because

Figure 3. Shopping App-Based M-Commerce Acceptance Model.



sometimes you come home and you're like," Oh I didn't win," because you weren't there, so it's just a convenience thing.

Gabby: I think I transact the most money on Venmo. I go out with my friends at least four times a week and we end up spending money on each other. Every Sunday we settle accounts and money gets transferred to my Venmo account and I pay out money if I owe it to anyone also using Venmo. Even my parents send me emergency money using Venmo. Otherwise they just deposit money every month into my checking account. I also go out with my friends at least two nights every weekend and we all use the Uber app because it's safer and it sucks walking in heels.

Christine: I use Uber whenever I am out and planning to drink. I also use Amazon because I have Prime and I get everything in a day or two. For me, the most important thing is speed, I am very impatient.

These findings seemed consistent with existing literature. Technology innovations like mobile apps are more likely to be adopted by consumers when they feel the new technology is useful and convenient (Ko et al., 2009). The interviews also revealed another interesting way in which apps are diffused. At least five participants indicated that the only reason their parents have certain m-commerce apps is to help their children. The parents of Bob, Mike, Gabby, Colleen, and Ben installed Venmo exclusively to send money to their children and Andrea installed Venmo to send money to her daughter.

5.2. Perceived ease-of-use

Perceived ease-of-use, another cognitive factor determining consumers' intentions to adopt a new technology, does not seem to have been critical when the participants considered downloading shopping apps. However, it played an important role when the participants decided whether or not they would keep the apps:

James: I'm, like, just get [sic] used to it; it's just one of those things that, you know, and it does take some getting used to. I mean, if you turn it horizontally, then it's a little bit bigger, so it's not too bad that way ... so I decided not to delete it [Amazon mobile].

Bob: I love the usefulness of the Amazon app because it gives you customer reviews for all the products they sell. If I don't see great reviews, I just move on because they have great selection for the smallest of products. I also find the Uber app very good because it gives you real time information about where your ride is and when is it going to get to you, so you don't leave the house or bar until the car is not right outside, especially in the winter. Also, with Uber, you can pay through the app so I don't have to worry about carrying cash or credit cards.

Peter: I use online shopping apps all the time, especially for work. I buy all my video equipment from B&H Photo and their app is very good. I also like using the B&H photo app because it is very easy to keep track of my business expenses and I can easily download the expense spreadsheet to my QuickBooks app so it helps when I am filing taxes. I also use Uber a lot especially when I am out with my friends and we don't have to worry about having a designated driver or parking.

Abigale: I download any app that my friends suggest if they say they like them. But if I find them difficult, or if I don't use the apps for more than like a month or two, I delete them. I check my phone every month to make sure all the apps I have are being used somehow, or I delete them. As for shopping apps, I have used several apps but now only use Amazon and Target.

5.3. Perceived trust

Another determinant the interviewees mentioned was *perceived trust* in the technology of smart-phones, which is positively associated with favorable attitudes toward and intentions to adopt a new technology. Four participants commented:

Andrea: For many years, I never bought anything on my cell phone. I used to look at products and read reviews but I did not trust giving my credit card information on my cell phone. I used to either go to the store to buy products or ask my husband to order it using my home computer. Now I am starting to buy things on my cell phone but I am always nervous.

Peter: I have used my cellphone for shopping since the early 2000s even before Apps were invented. I have never had any major issues and I know my credit card transactions are protected so I don't worry about trust issues. However, I will only do financial transactions on my cell phone with companies I know and trust from before.

Brian: I am very cool about using my cell phone to buy stuff. I mean yes, all apps store your credit card information but aren't all credit card companies required by law to reimburse you any money that is spent if your information is stolen? That is it then, I buy and let the credit card companies worry about fraud.

Existing literature also supports this idea with diverse evidence which shows that *perceived trust* in a new technology is negatively associated with *perceived risk*, which refers to "a consumer's subjective function of the magnitude of adverse consequences and the probabilities that these consequences may occur if the product is acquired" (Heijden et al., 2003, p. 43).

5.4. Interpersonal influence

It seems that *interpersonal influence* played a significant role when the participants decided to download shopping apps. Five participants (Christina, Bob, Andrea, Wendy, and Brian) answered that they downloaded the shopping apps that they use because some of their friends and acquaintances recommended the apps. Also, several participants noted that their parents downloaded money transferring apps like Venmo only to send them money because others recommended the app. Andrea and Mike noted:

Andrea: I had no idea about shopping apps until some store clerks started telling me about how you could get coupons on these apps. I asked my daughter about them and she helped me with recommendations and the actual downloading of apps. I also downloaded Venmo because my daughter insisted I use it to send her emergency money.

Mike: I am downloading shopping apps all the time because my friends recommend it. I recently downloaded the NY Yankees app because I am a huge fan of the Yankees and my brother told me that you can get merchandise cheaper using the app. I also downloaded Etsy recently because my friends use it and they buy some cool t-shirts and hard to find sneakers.

These findings are somewhat similar to a previous research study conducted by Wei, Govindan, Chong, Ooi, and Seetharam (2009). They found that *interpersonal influence*, along with several cognitive determinants such as *perceived usefulness* and *perceived financial cost* was significantly associated with positive consumer intentions to use m-commerce.

However, a few participants indicated that they were not only influenced by others, but also influenced their friends to download shopping apps. Bob, Ben and Wendy commented:

Bob: I love the BestBuy app because I am a huge techie. Whenever my friends are looking for electronic products, I will always ask them to download the BestBuy app. It has the best coupons and sales, so I go there often and recommend it to my friends and family.

Ben: Since I am the oldest senior in my class, many of my classmates tend to look up to me. Every time I have spoken positively about an app, many of my friends have downloaded it and tried it. Last time it was Lyft. Most of my friends have Uber but when I said I like Lyft better, few of them downloaded Lyft and even told me that they found Lyft cheaper and faster than Uber.

Wendy: I said, "I'm sorry; I have to check my eBay; I'm trying to win this thing." Then we started talking about it, and I said, "It's great; you should get it." I don't know if they did or not, and then I think, other times, someone complimented my shoes or something, and I said, "I got them on eBay; I used my phone"

The interpersonal influence is one of the most important findings of this study because existing models of technology acceptance such as Davis (1989) TAM and Kulviwat et al.'s (2007) CAT do not provide any kind of indication of social influences as a determinant of technology diffusion and acceptance.

5.5. New apps and new utilities

In addition to using apps to purchase products (e.g. Dominos) or services (e.g. Uber), several participants spend a lot of money on money transfer apps, namely Venmo. All the undergraduate students and at least one graduate student interviewed were active users of the Venmo app. They used the app primarily to transfer small amounts like \$5 and \$10 several times a week, and almost all of them influenced their parents to download the app to send them money, especially for emergencies. Venmo charges for many type of transactions, including charging a 3% fee to all credit card transactions. In many cases, Venmo is the app where some of these participants (and in some cases their parents) are spending the most money. Mike, Gabby and Bob were heavy users of Venmo, Uber and Dominos. Their views about Venmo are listed below:

i.) Mike: Oh, I use Venmo all the time. The fees don't bother me because they are like 25 cents, so you don't even miss it, plus, its only for outgoing. Its free to receive money.

Interviewer: Who else do you know who has and uses Venmo?

Mike: All my friends have and use Venmo. All of us use it for everything, whether it is settling accounts after a night out, or contributing money to purchase joint products like hotel rooms or video games.

ii.) Gabby: I use Venmo every week. But for me it is mostly to get paid. I work part time as a waitress, so I have cash which I like to not keep in my room because it may get stolen. So, when I go out with my friends, I spend all the cash for my friends, and they just Venmo me back the money at the end of the week, which goes to my bank account which saves me many trips to the bank and a lot of paperwork. I also like that it is free to receive money, so it really doesn't cost me anything.

iii.) Bob: I used to use PayPal sometimes to send and receive money with some friends but it was not very popular, so I used it very rarely. But Venmo changed everything. Everyone has it so everyone uses it all the time. I use it at least 2-3 times a week to send money and at least once a week to get money.

Although the interviews revealed a lot of interesting information about the way in which participants interacted with, and utilized m-commerce and shopping apps, the most prominent trend that we identified was the overwhelming use of apps that increase convenience to everyday activities of users and afforded some level of social interaction with users' peer groups. Several participants spent money on transfer charges on Venmo on more occasions than any of the other shopping apps. The second and third most utilized apps for several participants were Uber and Dominos. Marketers of products and services, especially services that enable some level of social interaction, must create apps, or modify their existing apps to add significantly higher levels of convenience, especially if they want to successfully appeal to a younger generation.

6. Discussion and implications

The current study attempts an in-depth investigation into how and why smartphone owners engage in shopping app-based m-commerce, by exploring consumers' experiences with their use of smartphone shopping apps. Additionally, based on our deep dive into existing literature, and

fourteen in-depth interviews, we also proposed a shopping app-based m-commerce acceptance model (MAM) that incorporates components of Technology Acceptance Model and Consumer Acceptance of Technology.

In-depth interviews of fourteen individual smartphone users, with experience with m-commerce yielded significant information about how consumers are using mobile apps for purchasing goods and services on a regular basis. We believe interviewing four non-students and ten undergraduate and graduate students was an appropriate sample size because the purpose the study was not to generalize any research findings (Creswell & Creswell, 2018). Additionally, by the ninth interview, we started seeing redundant information, signaling saturation.

Because of the explorative nature of the study, a phenomenological approach was used to answer the proposed research questions. With the use of this phenomenological approach, six themes emerged (i.e., *perceived usefulness*, *perceived ease-of-use*, *perceived trust*, *interpersonal influence*, and *new apps and new utilities in m-commerce*), and each theme is described in the findings section of this study. Further, we also compared our findings to previously emerged themes within the context of existing literature. We also included the more telling excerpts from our interviews verbatim in the findings section of this paper to illustrate the kind of rich information our interviews provided.

Based on these comparison processes between the new and the existing themes, a new model describing consumers' acceptance of m-commerce using smartphone shopping apps is presented. The M-Commerce Acceptance Model (MAM) provides a useful framework for explaining consumers' attitudes and intentions related to using shopping-related technologies specific to smartphones. The model also provides future researchers with a solid starting point to further investigate the exploratory side of m-commerce utility, especially in terms of upcoming or developing technologies, apps and utilities, and their role in peoples' lived experiences.

This study presents several implications for both scholars and practitioners in relevant fields such as information systems, marketing, and communication. First, the study provides practitioners and corporations with information on how to improve their m-commerce offerings. For example, the developers of shopping apps should provide consumers with an easy-to-navigate user interface (UI) and a high level of security. Also, all app developers in general should try to increase the convenience and social interaction value propositions within their app service offerings.

This study can also help practitioners better understand the motivations and uses of m-commerce from a consumer perspective. Since this is one of the few studies that conducted in-depth qualitative research to better understand the consumer perspective of m-commerce use, practitioners can utilize the study to design apps and processes that enhance user experience and loyalty. For example, some respondents said that they preferred shopping apps that also included additional features such as consumer reviews, comparison information, etc. In addition, analysis revealed new apps and utilities that are gaining popularity among customers, especially the young demographic. For example, most young participants indicated that they do not consider transaction fees, especially fees below \$1 to be even a minor consideration when making purchase decisions, and that convenience and speed were considerations that are more important. Findings such as these can have significant implications for practitioners and businesses and hence require further investigation.

In addition, practitioners and marketers in the field of m-commerce should focus on word-of-mouth marketing to encourage consumers to try their services, because smartphone owners who feel satisfied with their experiences with apps are more likely to recommend those apps to their peer groups and families.

7. Limitations and future research

As with any qualitative research study, this study is limited in terms of generalizing findings to the larger population. We did increase the validity of our findings by interviewing people from two different institutions, and of two different age groups. Although we could not uncover any additional themes after we interviewed nine participants because they were all from institutions of higher education, it is possible that future researchers can find additional themes by interviewing non-college related participants from a larger geographic area and additional demographic groups. In addition, a similar study can be conducted cross-culturally.

The focus of this study was to evaluate the motivational factors influencing the use of smartphone-shopping apps. However, some factors that we uncovered may have negative impact on app-based shopping behavior or motivation. For example, perceived trust (e.g. identity theft) and interpersonal influences (e.g. negative word-of-mouth) may in fact hinder the process of engaging in m-commerce. Future researchers can focus on the negative motivations of m-commerce engagement, and its effects on businesses that participate in app-based m-commerce.

Future researchers can also empirically test the relationships between the variables presented in the m-commerce acceptance model proposed in this study. The main purpose of this study is to find themes relevant to how consumers use smartphones shopping apps. We made our observations by conducting one-on-one in-depth interviews rather than generalizing the relationships amongst the variables using quantitative research techniques. In addition, to the best of the authors' knowledge, this research is one of the first qualitative studies pertaining to shopping app-based m-commerce, as it relates to peoples' motivations while smartphone-based shopping experiences. It may thus provide useful frameworks for future studies investigating consumers' use of other smartphone apps, as previous m-commerce research did not evaluate shopping apps-based motivations and behavior qualitatively.

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Appendix A—Interview Guide

Date of the Interview: _____

Interviewee Information

Gender: Male/Female

Age: _____

Occupation: _____

Race: White/African American/Asian/Hispanic/Multiracial/Other Race(s)

The Purpose of the Study

The purpose of the current study is to explore how smartphone owners experience their mobile devices and why they feel/do not feel compelled to shop with their mobile phones.

Topics

- (1) Tell me about yourself.
- (2) Tell me about your mobile phone.
 - (a) What kind of mobile phone do you have?
 - (b) Do you consider your mobile phone a smartphone?
 - (c) If so, please describe when you decided to buy a smartphone.
- (3) Please describe how and when you use your mobile phone.
 - (a) What activities do you do other than calling or texting with your smartphone?
 - (b) How long do you use your smartphone per day?
 - (c) Have you downloaded apps?
 - (d) If so, what kind of apps did you download?
 - (e) Have you downloaded shopping apps?
 - (f) If so, how did you know about the shopping apps?
 - (g) Please describe how you downloaded them.
- (4) How have you used your mobile phone while shopping?
 - (a) Do you use shopping apps or mobile web browsers such as Safari when you buy things?
 - (i) How do you use them?
 - (ii) What do you do when you shop using your mobile phone?
 - (iii) [If the respondent uses shopping apps]
 - (1) What kind of shopping app do you use?
 - (2) What other shopping apps do you download?
 - (3) Do you like the apps? Why? Why not?
 - (iv) [If the respondent uses mobile web browsers]
 - (1) How do you shop when you use your mobile phone?
 - (2) Please describe your [last/most memorable] mobile shopping experiences.
 - (3) Have you heard about shopping apps?
 - (a) If so, please tell me how you feel about the shopping apps.
 - (5) Are there any new or recent shopping apps you have downloaded and used?



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