How Do Consumers Perceive Mobile Self-checkout in Fashion Retail Stores?
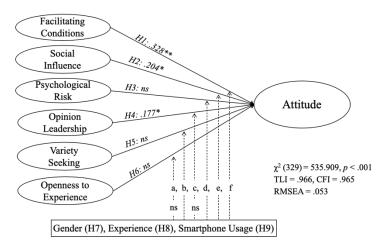
Yuli Liang, Texas State University, USA
Seung-Hee Lee and Jane Workman, Southern Illinois University, USA

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Background and Purpose: With increasing use of smartphones, retailers encourage consumers to use checkout functions on their apps (Ahuja, 2018). As well as shopping through mobile apps, retailers also began offering mobile self-checkout in brick-and-mortar stores. Mobile self-checkout refers to ordering products using a mobile device inside a brick-and mortar store and completing the checkout process on mobile devices. Serving as one of the new generations of self-service systems, mobile self-checkout is becoming widely adopted by fast-moving consumer goods retail companies and grocery stores (Aloysius et al., 2019; Andriulo et al., 2015). To enrich consumers' shopping experience and enable instant checkout, fashion retailers such as Macy's and Nike have implemented mobile self-checkout in their stores (Alvarez, 2018; CBS Denver, 2018). Even though mobile self-checkout has been used in other industries for several years, it is a new application in the fashion industry. Literature is deficient concerning consumers' attitudes and guidance for fashion retailers. *The purpose of this study* is to understand consumers' acceptance of mobile self-checkout by analyzing determinants of using a new system. Results will provide suggestions for fashion retailers about adopting and improving acceptance of mobile self-checkout. Results will lead to theoretical and managerial implications for future technology development.

Conceptual Framework: The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) was used as a guideline to conceptualize research constructs. Specifically, two items from UTAUT: facilitating conditions and social influence were adopted. Facilitating conditions refer to consumers' perceptions of the resources and support available to help them use mobile self-checkout (Venkatesh et al., 2012). Social influence is the extent to which consumers perceive that important others believe they should use or not use mobile self-checkout (Venkatesh et al., 2003). Psychological risk

Note: **$p < .001$, *$p < .05$. Dash arrow lines indicate moderating effects and ns indicate non-significant.

Figure1. The Conceptual Framework and Testing Results

refers to individual mental stress of using mobile self-checkout as being inconsistent with the personal or self-image of the consumer (Pires et al., 2004). Opinion leadership (Batinic et al., 2016), variety seeking (Donthu & Garcia, 1999), and openness to experience (Thompson, 2008) were also added to the model. Gender, consumers' experience of using (or not using) mobile self-checkout in fashion retailers, and smartphone usage were tested for moderating effects across different groups. H1: Facilitating conditions will positively influence attitudes toward mobile self-checkout. H2: Social influence will positively influence attitudes toward mobile self-checkout. H3: Psychological influence will positively influence attitudes toward mobile self-checkout. H4: Opinion leadership will positively influence attitudes toward mobile self-checkout. H5: Variety seeking will positively influence attitudes toward mobile self-checkout. H6: Openness to experience will positively influence attitudes toward mobile self-checkout. H7: The salience of the path will be different across consumers of different gender. H8: The salience of the path will be different across consumers with (vs without) experience using mobile self-checkout in fashion retailers. H9: The salience of the path will be different across consumers of more frequent and less frequent smartphone usage.

Method: Participants in this study were recruited via Qualtrics Panel services. An online self-administered questionnaire was created using Qualtrics and sent to potential participants who lived in the top 20 metropolitan areas in the US. Participants watched a short video about mobile self-checkout and completed the questionnaire, which included measures from established research of opinion leadership, psychological influence, facilitating conditions, variety seeking, openness to experience, social influence, and attitudes. A total of 229 valid responses was obtained over one-week period. The majority of respondents were male (55.99%), 57.2% live in the top 5 metropolitan areas, and 76.3% ranged between 19 and 45 years old (range=18 to 65), 115 participants had experience using mobile self-checkout in fashion retailers. Participants were categorized as less frequent (n=107) and more frequent (n=122) smartphone users. Data analysis included descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), path analysis, moderation test with linear regression, and independent samples T test.

Results: EFA and CFA were conducted to ensure construct validities. Items with low loadings or high-cross loadings were removed in the EFA. Varimax rotation resulted in 29 items that measured 7 factors, with 81.01% of total variance explained; item loadings ranged from .673 to .909. Cronbach's alpha ranged from .903 to .968. In CFA, one item of high modification indices was dropped, all other items within seven factors remained, with the reliability and validities achieved. Path analysis with a good model fit (χ^2/df = 1.629, p < .001, RMSEA = .053, CFI = .965, and TLI = .966) was used to test hypothesized relationships (see Figure 1). Moderation tests with linear regression (Frazier et al., 2004) were conducted to examine moderation effects of gender, consumers' previous experience using mobile self-checkout, and consumers' smartphone usage. Results indicated significant p-values for the interaction terms between variety seeking and attitude (moderated by gender, p < .05), between facilitating conditions and attitude (moderated by gender, p < .05), between facilitating conditions and attitude (moderated by experience, p < .001), between social influence and attitude (moderated

by experience, $p < .001$), and between psychological influence and attitude (moderated by experience, $p < .05$). There was no significant interaction by smartphone usage and there was no moderation effect for smartphone usage frequency. Results of independent samples T tests indicated that men rated variety seeking and facilitating conditions significantly higher than women and participants who have used mobile self-checkout in fashion retailers rated facilitating conditions, psychological influence, and social influence significantly higher than those who had not used mobile self-checkout. Hypotheses H1, H2, and H4, were supported; H7 and H8 were partially supported; H3, H5, H6, and H9 were not supported (see Figure 1).

Discussion/implications: Research findings suggested consumers value the facilitating conditions provided in using this system and social influence of whether to use this system. Also, consumers who were stronger opinion leaders had a more favorable attitude toward using this system. Men had more favorable attitudes than women and customers who had experience using mobile self-checkout had more favorable attitudes than customers without experience. Therefore, for retailers who want to adopt this system, upscale shopping malls or flagship stores in top metropolitan areas would be ideal locations to first implement the system because there are likely to be consumers who have experience. Also, it would be easier for retailers who target male customers to implement the system. Further, providing facilitating conditions such as in-store signage and guidance from sales associates would generate a higher acceptance level from consumers. Theoretically, this study contributed to the UTAUT model by extending this model to a new technology system in fashion. Moreover, opinion leadership was incorporated within the UTAUT framework and test results indicated positive influences on attitude toward a new technology system in fashion.

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