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EXAMINING THE INFLUENCES OF COGNITIVE AND CONATIVE PERSPECTIVES ON INDIVIDUAL ADAPTIVE BEHAVIOR

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ABSTRACT

High percentage of mobile app users uninstall downloaded apps without continuing the usage. Moreover, empirical literature provides evidences on the importance of conative perspectives on adaptive behaviour. However, in light with Theory of Mind (TOM), Innovation Diffusion Theory (IDT) focuses only about cognitive perspectives and lacks incorporation of conative perspectives in understanding adaptive behaviour. Accordingly, the purpose of the study is to examine how cognitive and conative perspectives influence adaptive behaviour. Accordingly, quantitative research approach was adopted taking a sample of individual mobile app users who are in the age group of 21 to 30 years and use more than 60% of their digital time on mobile apps. The findings have revealed that cognitive, and conative perspectives of an individual user influence adaptive behaviour positively. Further, it can be identified that conceptualization of mobile app adaptive behaviour and developing a scale based on cognitive and conative perspectives to measure this construct is a significant research and theoretical implication of the current study.

Key Words: Mobile apps, adaptive behaviour, cognitive perspectives, conative perspective and individual behaviour.

1. Introduction

The world smart mobile phone penetration is recording over 2.7 billion smartphone users across the world (Blair, 2019) and 5.112 billion mobile subscriptions (Hootsuite, 2019). Mobile subscriptions in Sri Lanka is 28.71 million from the total population (Hootsuite, 2019). Moreover, an individual spends 90% of their mobile usage on apps (Blair, 2019). Further, Apple store has 2.2 million mobile apps and the Google Play Store has 2.8 million mobile apps (Blair, 2019). However, as per Shah (2020), an average user installs 40 mobile apps but their time is split between 18 common mobile apps. Accordingly, half of mobile apps will not be used. As per Lim et al. (2014), 400,000 out of 600,000 mobile apps in IOS app store has recorded no downloads while 80% of android paid apps have received less than 100 downloads. And even after a huge investment spent on apps, 71% of users uninstall the downloaded app within 90 days and 57% within first month (Blair, 2019). Thus, there is a need to understand this mysterious mobile app behaviour.

Accordingly, this study aimed to achieve two objectives. First objective was to investigate what influence cognitive perspectives of a mobile app user creates on mobile app adaptive behaviour, and the second objective was to investigate what influence conative perspectives of a mobile app user creates on mobile app adaptive behaviour. Accordingly, this study has identified below problem statement. "What influence cognitive and conative perspectives of a mobile app user create on his/her adaptive?"

As per Rogers (2003), adaption of a system can be influenced from initial knowledge (first time hearing of a mobile app) to the confirmation of the usage (final adaption). As argued by Theory of Mind (TOM), individuals interpret themselves and others through mental states which form human actions (Wellman et al., 2001). As suggested by Gallanger & Frith (2003), TOM can be used to understand and to predict how individuals will act. Accordingly, it is required to focus on cognitive (cognitive reading and beliefs regarding the content of mind) and conative (social influence) perspectives in predicting and understanding how people behave (Wellman et al., 2001; Hein & Singer, 2008).

As per the findings of the current study, direct effects of relative advantage, compatibility, complexity, trialability and observability under cognitive perspectives; and social influences under conative perspectives of an individual mobile app user have been recorded as statistically positive meaning these perspectives of an individual mobile app user influence his/ her adaptive behaviour.

2. Literature Review

Mobile app usage has become an emerging trend in m-commerce related literature (Blair, 2019; Hootsuite, 2019). A mobile app can be defined as "a small program that runs on a mobile device and performs a varied range of tasks from making a purchase to locating a store" (Taylor et al., 2011).

Adaptive Behaviour

Adaptive Behavior can be defined as an individual's intention to continue usage (Bhattacharjee, 2001). Chou and Ting (2004) describe adaptive behavior as a state of individual behavior which derives irrational motives for compulsive and unhealthy preoccupations with repetitive actions.

Relative Advantage

Relative advantage can be defined as a user's perspective about the level of an innovation's advantages (Moore & Benbasat, 1991). Rogers (1983) identified economic benefits, image enhancements, satisfaction and convenience as relative advantages of an innovation.

Compatibility

Compatibility can be defined as a user's belief about an innovation's fitness or suitability to their existing values, previous experiences, and current needs (Rogers, 1995). Accordingly, if their past experiences are fitting with a new technology, individuals may adopt (Lee et al., 2011; Benedetto et al, 2003).

Complexity

Complexity can be defined as the level of difficulty one feels in operating, understanding, and learning about the innovation (Rogers, 1983). Mehra et al. (2020) conclude that users may adopt mobile apps if they feel the downloaded app is simple and worthy to use.

Trialability

Trialability can be defined as the extent to which a user believes that there is a possibility of trying the innovation before its adaption (Rogers, 1983).

Observability

Observability can be defined as the degree to which the results of innovation are visible to others (Rogers, 1983). When the visibility of these results is high, it will encourage users to share their experiences with others (Waheed et al., 2015).

Social Influence

Social Influences can be defined as influences from reviews/ posts from peers, relatives, friends and other users (Malik et al., 2017). Many researchers suggest that influences from an individual's social networks and peers can impact the adaptive behaviour (Roy, 2017; (Malik et al, 2017).

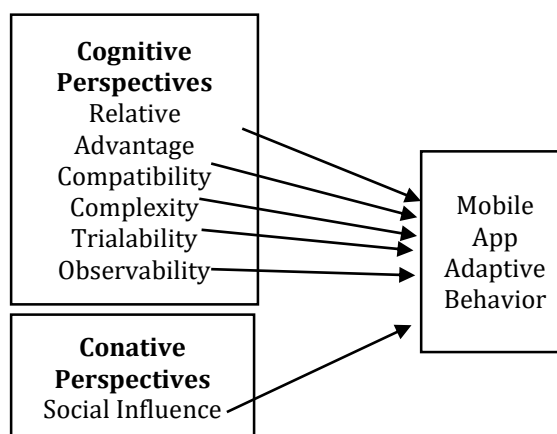
Innovation Diffusion Theory (IDT)

When reviewing the literature, it was found that Innovation Diffusion Theory was the most applied theory in mobile commerce related studies (Wang et al., 2017; Tornatzky & Klein, 1982; Purani et al., 2019).

Theory of the Mind (TOM)

Wellman et al. (2001) identify TOM as an important tool to understand social cognitive skills of individuals as it facilitates an understanding of others' behaviours and thereby forms responses. TOM suggests that individuals interpret themselves and others through human actions which are driven by mental states (Wellman et al., 2001).

Figure 1: Conceptual Framework



Source: Author

3. Methodology

The quantitative approach was used to examine how cognitive and conative perspectives of a mobile app user can influence their adaptive behaviour. A structured self-administered questionnaire was used as the research instrument to collect data from the sample which included mobile app users ranging the age group 21 to 30 years and uses more than 60% of their digital time on mobile apps. The target population was entirely of individual mobile app users in Sri Lanka from which a proposed sample of 362 have been selected based on convenience sampling technique. The reason of adapting convenience sampling method is that as per Bryman (2012) when the sample size is adequate, data collected from a convenience sample can be used to generalize the findings. Also, individual mobile users who are in the age range of 21 to 30 years and who use more than 60% of digital time on apps, are homogenous to a greater extent. Thus, the researcher believes adapting convenience sampling method is rational.

The scale development was initiated by reviewing similar constructs such as adaptive behaviour related to M-learning apps (Pillai & Sivathanu, 2018), and adoptive behaviour of life insurance mobile app users (Lee et al., 2015) to identify the dimensions of mobile app adaptive behaviour and find appropriate items to measure it. Accordingly, 26 items were found from the empirical literature to measure mobile app adaptive behaviour. Moreover, the demographic profile of the study was adopted from Wang et al. (2017).

Hypothesis

H1: Relative advantage has an influence on mobile app adaptive behaviour: As per Rogers (1983); Agag and Mastry (2016), if an individual perceives more benefits/advantages, and if those advantages overhauls the perceptions of the individual, there is a greater relative advantage for such innovations.

H2: Compatibility has an influence on mobile app adaptive behaviour: As confirmed by Wang (2017); Tornatzky and Klein (1982); Agag and Mastry (2016); when the compatibility of an innovation increases, the possibility of adapting such kind of an innovation also increases.

H3: Complexity has an influence on mobile app adaptive behaviour: as confirmed by Ying et al. (2015); Tornatzky and Klein (1982); Agag and Mastry (2016), when the complexity of an innovation decreases, the possibility of adaption increases.

H4: Trialability has an influence on mobile app adaptive behaviour: as confirmed by Wang (2017); Tornatzky and Klein (1982); Agag and Mastry (2016), when the possibility of trying before the adaption is high, it will influence adaptive behaviour positively.

H5: Observability has an influence on mobile app adaptive behaviour: as confirmed by Ying et al. (2015); Waheed (2015); Purani et al. (2019), when the visibility of an innovation increases, the adaptive behaviour will be influenced positively.

H6: Social Influence has an influence on mobile app adaptive behaviour: Liu et al. (2016) have found that social influences reduce risks/ uncertainties before adaption. Moreover, users may adapt a new technology if it increases their social standing (Monno & Xiao, 2014).

4. Results/Analysis and Discussion

400 questionnaires were distributed to the sample of individual mobile app users aged between 21 to 30 years, who spend 60% of their digital time on mobile apps. 362 questionnaires were received. Figure 2 demonstrates the structural model of this study.

Table 1: Descriptive Statistics, Cronbach's Alpha, CR, and AVE

Variable	CA	CR	AVE	RA	CB	CX	TR	OB	SN	SI	AB
RA	0.715	0.740	0.500	0.500							
CB	0.741	0.740	0.500	0.334	0.500						
CX	0.804	0.810	0.600	0.011	0.013	0.600					
TR	0.681	0.700	0.400	0.010	0.089	0.023	0.400				
OB	0.738	0.740	0.400	0.134	0.234	0.001	0.133	0.400			
SN	0.755	0.760	0.500	0.163	0.227	0.001	0.091	0.151	0.500		
SI	0.732	0.740	0.400	0.125	0.356	0.034	0.284	0.259	0.244	0.400	
AB	0.592	0.600	0.300	0.181	0.335	0.002	0.072	0.258	0.187	0.448	0.300

Source: Survey Data

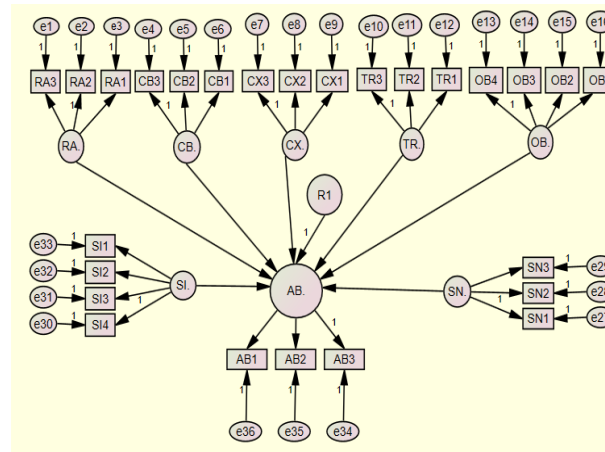
As per the findings of the current study, relative advantages of a mobile app have a statistically significant, weak positive influence ($\beta=0.224$, P value=0.000). This means if mobile apps provide more advantages compared its substitutes, more will be the adaption. This finding is consistent with the findings of Xu and Li (2019); Davis (1989); Rogers (1983). Further, compatibility has a moderate, positive influence ($\beta=0.369$, P Value=0.000). Accordingly, when a mobile app is compatible with a user's previous experiences, existing values and current needs, more will be the adaption. This finding is consistent with the findings of Tornatzky and Klein (1982); Wang et al (2017); Purani et al. (2019). Moreover, complexity has a statistically significant, strong positive influence ($\beta=0.092$, P value=0.049). Accordingly, when a mobile app is simple and worthy to use, more will be the adaption. This study finding is consistent with the findings of Waheed et al. (2015); Purani et al. (2019). Further, trialability has a statistically significant, weak positive influence ($\beta=0.189$, P value=0.098). Accordingly, when a mobile app provide the opportunity of trial with less efforts and expenses, more will be the adaption. This study

finding is consistent with the findings of Aizstrauta et al. (2015); Waheed et al. (2015). Moreover, observability has a statistically significant, weak positive influence ($\beta=0.286$, P value=0.049). Accordingly, when an app can deliver visibility of its results to other users, more will be the adaption. This finding is consistent with the findings of Purani et al. (2019); Wang et al. (2017); Agag and Mastry (2016). Further, social influences have a statistically significant, weak positive influence ($\beta=0.227$, P value=0.000). Accordingly, adaptive behaviour of a mobile app user can be influenced by reviews/views of social networks and peers. This finding is consistent with the findings of Hsu and Lin (2016); Sarker and Wells (2003); Lu et al., (2016). Thus, the study has found that cognitive and conative perspectives influence user's mobile app adaptive behaviour. Similarly, the components of conative perspectives; social norms and social identification, have influences on adaptive behaviour.

Accordingly, the current study attempted to extend IDT by incorporating conative perspectives. Moreover, the current study has provided empirical evidence on how cognitive and conative perspectives of a mobile app user affect his/ her adaptive behaviour.

In contrast to the empirical literature, where user adaptive behaviour was explained based on app/ features oriented approaches, the current study contributed a more consumer-centric approach by extending the IDT with the TOM.

Figure 2: Structural Model with standardized parameter estimates



Source: AMOS outputs

More importantly, this study has revealed several important implications to managers, especially those who use mobile apps as their retail/ intermediary platforms to maintain personalized customer interactions. Firstly, managers should focus on the complexity of mobile apps, as it is the highest direct influencer of cognitive perspectives when an individual adopts mobile apps. Consumers consider the degree of difficulty in learning, understanding and operating mobile apps when intending to adopt them. If a manager can choose the right cognitive construct with which to persuade the consumer, it may have positive influences on consumer behaviour. Moreover, significant influences from relative advantages, compatibility, trialability, and observability under cognitive perspectives; and social influences under conative perspectives indicate that managers

should consider the nature of consumer behaviour when developing, launching and maintaining a mobile app. Finally, the current study leads to the suggestion that by creating a mobile app experience which is equal to or more intense than the user experiences of app users as identified in this study, managers can maintain quicker customer interactions. By incorporating the aforementioned implications, managers will have the opportunity to encourage adaptive behaviour and thereby increase actual sales through push notifications embedded in mobile apps.

5. Limitations

The sample considered for this study was Sri Lankan mobile app users. Thus, generalizing the findings of this study to understand the mobile app adaptive behaviours of users in other countries could be one such limitation.

6. Directions for future research

In order to draw an inclusive understanding on mobile app adaptive behaviour, qualitative research approach could be utilized in a future research.

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