Role of Shopping App Attributes in Creating Urges for Impulse Buying: An Empirical Investigation Using SEM and Neural Network Technique

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ABSTRACT

With high speed internet, the retailers are continually engaged in upgrading mobile apps that facilitate shoppers in shopping anywhere-anytime and arousing their sudden urges to buy impulsively. The present study endeavors to decipher the antecedents of mobile app-based impulsive buying behavior and determining their relative significance in triggering impulsive urges. Using structural equation modeling, causal analysis was undertaken to identify the role of effort expectancy, price and discounts, atmosphere and layout of app, and user experience and satisfaction in creating impulsive buying intentions. It was observed that price and discounts and user experience didn't have any influence in stirring the consumer for impulsive buying. To determine the relative significance of remaining four, artificial neural network modeling was undertaken. Effort expectancy was noted to have highest influence in creating impulsive urges, followed by atmosphere and layout of an app. User satisfaction had minimum impact. The paper concludes with practical implications for m-commerce players.

KEYWORDS

App Layout, Effort Expectancy, Impulse Buying, Impulse Buying Intention, Mobile Applications (Apps), User Experience, User Satisfaction

INTRODUCTION

Over the period, phones have transformed from being a traditional voice-based function to the smartphones that facilitate multimedia exchange, financial transaction, social media and mobile games. This has powered the development of mobile applications (apps) that satisfy customers’ multiple expectations (Techcrunch, 2014). With the increasing usage of smartphones, mobile apps have become popular communication tools that connects businesses with their customers. Defined as
“software downloadable to a mobile device” (Bellman et al., 2011), mobile apps offer a large gamut of benefits like time and location independence, easier administration and ubiquity, and context awareness (Nikou & Economides, 2017). Displaying brand identity throughout the user experience (Bellman et al., 2011), branded apps serve users with a variety of content and extend services any time through smartphones. While using mobile apps, shoppers have control over their decisions according to their requirement and brand preference. It is pertinent that an app stands on customers’ expectations and have essential features such as simplicity, social media integration, easy payment and customization (Rose, 2017).

The worldwide mobile commerce revenues are expected to rise from US$ 96.34 billion in 2015 to US$ 693 billion in 2019 (Statista, 2015). Half of all e-commerce site traffic emanated from mobile users, with smartphones and tablets contributing forty and ten percentages respectively (Dynamic Web, 2015). While Android has launched 2.8 million apps globally under twenty-nine categories, its competitor Apple has 2.2 million apps across twenty-one categories in 2017 (Statista, 2017). Owing to the rapid growth of smartphones, India has emerged as the fastest growing (71%) country in the mobile application market in terms of downloading (268 million) and usage of apps in 2017 (Saifi, 2017). As against the global average of thirty-eight percent, Statista (2016) reported that forty-nine percent of respondents in India used mobile devices for purchasing goods or services.

It has been reported that mobile ecommerce triggers impulsive buying owing to the availability of multiple pathways through which shoppers are exposed to cues both from surroundings and within the actual devise (Dynamic Web, 2015). Besides being simplistic in browsing and buying, the ease of use of mobile devices catalyze urges to buy product instantaneously.

Upon the scanning of existing literature, it has been observed that studies on mobile apps largely pertain to factors influencing the installation of mobile app (Harris, Brookshire & Goyal, 2016), app adoption (Bellman et al., 2011; Kim et al., 2013), usage of mobile app (Hew et al., 2015; Kim et al., 2016), factors influencing continuous attachment to app (Furner et al., 2014; Kim et al., 2016; Kim et al., 2015) and usage commendation (Xu et al., 2015; Yan & Chen, 2011), and relationship with personality traits (Xu et al., 2016). A study by Yang and Lin (2014) examined satisfaction with and purchase intention on apps.

The study on online impulse buying has grown steadily over the period, along with the growth of e-commerce industry (Chan et al., 2017). Mostly such research pertains to determining the influence of website cues on online impulse buying or differentiating the factors influencing the offline impulse buying vide online media. The recent studies on impulse buying have focused on studying the impact of online reviews on impulsive buying behavior (Zhang et al., 2017), impact of demonetization on such buying (Pandya and Pandya, 2018), motivation behind impulse buying (Sundström et al., 2019), and impact of emotions on impulse buying (Yi and Jai, 2019). However, no studies have attempted to decipher the influence of various antecedents of shopping using mobile app on impulsive buying behavior.

Using structural equation modeling, this paper addresses the gap in the literature to evolve a model that identifies significant antecedents triggering impulsive urges to buy in the context of mobile apps. Based upon these identified determinants, artificial neural networks technique has been used to predict shoppers’ impulsive behavior. The advantage of using neural networks technique pertains to its capability of modelling non-linear relationships as against the linear relationships modelled by regression-based methods. In their study, West et al. (1997) observed that neural network technique performs better than other binary techniques like discriminant analysis and logistic regression. The paper also examines the relative significance of various determinants that were identified using structural equation modelling.

Thus, this study is a pioneer attempt at predicting impulsiveness among buyers using mobile shopping apps. Using the techniques - structural equation modelling and artificial neural network, the paper identifies the specific features of mobile shopping apps, which marketers must consider while targeting shoppers and triggering their impulsivity. The paper flow is as follows; The subsequent
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