Chapter 4
SEM: Artificial Neural Network-Based Research of Customer Satisfaction and Behavioral Customer Loyalty in Mobile Shopping – The Role of E-Service Quality and E-Recovery

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ABSTRACT

The aim of this chapter is to test the hypothesis that the two-step structural equation modelling (SEM) and artificial neural network (ANN) approach enables better in-depth research results as compared to the single-step SEM approach. This approach was used to determine which factors have statistically significant influence on customer satisfaction and customer loyalty in online shopping. The purpose of this chapter is to extend the role of e-service quality and e-recovery research which is traditionally based on SEM technique with ANN approach. In the first step of the present research, the SEM technique was used to determine which factors have statistically significant influence on customer satisfaction; in the second step, ANN models were used to rank the relative influence of significant predictors obtained from SEM. The results indicate that effectiveness of information content, hedonic shopping value, information security and confidentiality, responsiveness, and website entertainment have a positive impact on customer satisfaction.

DOI: 10.4018/978-1-7998-3238-6.ch004

INTRODUCTION

The developing countries have witnessed an unprecedented and remarkable growth in the telecommunication technology infrastructure development during past one decade. The development of the internet has altered the way individuals shop and buy products/services. In order to reduce costs incurred in marketing, firms are increasingly using e-commerce. Businesses are using the internet to connect, communicate, and disseminate information to the present and potential customers, besides receiving feedback about the satisfaction/dissatisfaction with their products and services. With rapid and continuous advancements in technology, the number of people using the internet for carrying out business transactions has resulted in the exponential growth of e-commerce. The advent of mobile telephony devices with strong internet access has laid the foundation for mobile commerce (m-commerce) services. The access has not only transformed the ease and speed of communication but also provided possibilities to marketers to redefine the art of connecting with potential customers. A strong mobile telecom service network is also positively found to be linked with the economic growth of a country. Mobile phones have evolved into a device which facilitates the process of finding location of a store, selling, and purchasing of products and services, payment for utility bills, performing banking transactions, and connecting to social networks (Hanafizadeh et al., 2014; Hsu and Wang, 2011; Khalifa and Ning Shen, 2008; Kleijnen et al., 2003).

Mobile devices and apps provide many profound benefits and opportunities to business firms in terms of mobile commerce (m-commerce). The extension of the e-commerce eco-system has emerged M-commerce, in which business activities are performed in a wireless environment through mobile devices and apps (Zhang et al., 2012). However, it offers plenty of advantage over e-commerce to users in terms of its ability of personalization, ubiquitous and anytime access and instantaneity of use (Chong et al., 2012; Chong, 2013; Thakur and Srivastava, 2013). The higher penetration of of mobile phones especially the smartphones provide the vast potential and opportunities of m-commerce market.

The aims of this book chapter are fourfold. First, it intends to explore factors that motivate/inhibit consumers's satisfaction and loyalty for m-commerce. Second, the study integrates appropriate constructs from Service Quality (Information Security & Confidentiality, Website Performance), E-Recovery (Responsiveness, Compensation, Contact), Shopping values (hedonic shopping value, Utilitarian Shopping Value), and Atmospheric cues (Website Informativeness, Website Entertainment, Effectiveness of Information Content). Third, the paper intends to integrate empirical modeling methods for prediction purposes using explanatory and predictive modeling methods (Akgül, 2018b; Asadi et al., 2019; Chan & Chong, 2012; Leong et al., 2019; Shmueli and Koppius, 2010; Teo et al., 2015). A large majority of empirical studies (Akgül,