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Effect of the customer experience on satisfaction with smartphones: Assessing smart satisfaction index with partial least squares

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ABSTRACT

With the rapid diffusion of a wide variety of smartphones, quality issues have become central to consumers. While customer satisfaction of most goods and services has been well researched, little research seems to exist on satisfaction and loyalty with respect to advanced mobile services, such as smartphones. This study applied a customer satisfaction index (CSI) model to the smart mobile sector in order to derive a smart-service CSI (SCSI). The SCSI model and its hypotheses were then tested using partial least square analysis and index calculation. The findings showed that the perceived value and customer satisfaction are key variables mediating the relationship between quality and customer loyalty. The proposed model demonstrated strong explanatory power, with satisfactory reliability and validity. The SCSI model establishes a foundation for future smart service categories on the basis of providing a powerful tool for quality assessment. The results of this study provide useful insights for the telecom industry and policy-makers, for the forging of effective policies and competitive strategies.

1. Introduction

As smart technology has become almost a necessity these days, consumer satisfaction when using smart services, in terms of perception and behaviors, has become a topic of considerable interest.[1] This invigorated interest is due in large part to the rising importance of smart services, and the need to understand how to improve customer satisfaction and loyalty in the smart era. Smart devices are designed to support a variety of services, and to support a range of properties pertaining to ubiquitous computing. In recent years, the rapid development of mobile app markets and of mobile commerce has been drivers of smartphone adoption.

With the drastic increase in the development of smart devices, it is even more important for service providers to measure the level of satisfaction among customers, as this would help the providers to identify and reform any areas in need

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[1] While there is no single accepted definition, in general, smart technology is defined as technology possessing one or more advanced characteristics such as Internet access, capturing still or moving images, and communicating via phone, SMS, Bluetooth, or other applications, or via programs that allow a channel of data share or communication. Examples of smart technology include mobile phones, tablet devices, smart watches, ipods, and ipads. Smart service refers to the service provided through smart technologies, and is characterized as easy to use, user-centered, and creative services.

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of improvement. Despite the increasing need for an objective measurement of smart service quality, no common agreement has been made on how smartphone satisfaction should be conceptualized and measured (Chun, Lee, & Kim, 2012). Issues related to the improvement of customer satisfaction have long been a major area of research, and the smartphone is no exception. While the American Customer Satisfaction Index (ACSI) has provided a comprehensive framework for numerous existing index models (Fornell, Johnson, Anderson, Cha, & Everitt 1996), related studies have focused mostly on calculating customer satisfaction indices for entire industry sectors. The resulting rankings have been used for marketing and advertising purposes. Only a few previous studies in this field have explored the perceived quality factors that have an actual impact on customer satisfaction, and none have sought to develop strategies for quality improvement. In light of this gap, the present study proposes a smart-service customer satisfaction index (SCSI) model, modified from ACSI to better suit the emerging field of smart technologies. By measuring customer satisfaction index, the findings from this study offer service providers practical suggestions which would result in the improved quality of service, in advance of full-fledged rollout. In addition, this study offers policymakers and researchers fundamental guidelines for assessing the performance of mobile network operators, in terms of user satisfaction, and continuing loyalty.

This study contributes to the existing literature in three ways. First, by providing the first customer satisfaction index (CSI) for smart services, it provides useful insights, particularly pertaining to the disentangling of possible sources of variation in consumer satisfaction (or related variables) in smart services. Second, the results should prove valuable to market research practitioners engaged in smartphone customer satisfaction measurement programs, as these researchers are increasingly tasked with the development of smartphone-specific factors and satisfaction, making vital decisions based on this information. Finally, this study provides insights and guidance to the smart industry for their international market strategies, seeking global growth through improved cross-national customer satisfaction.

2. Theoretical background

2.1. Prior models of the customer satisfaction index

Customer satisfaction models normally include the attributes that describe a product or service, the benefits of consequences these attributes provide customers, a customer's overall evaluation of their purchase and using experience, and the intentions. The CSI model is a structural model based on the theory that customer satisfaction is created by factors such as quality, value, expectations of customers, and the image of a company (Fornell et al., 1996). These factors are the antecedents of overall customer satisfaction. The model also estimates the results when a customer is satisfied or not. These results of customer satisfaction are consequence factors, such as complaints or loyalty of the customer (Fornell, 1992). Each factor in the CSI model is a latent construct, which is operationalized by multiple indicators (Turkyilmaz & Ozkan, 2007).

The Swedish customer satisfaction barometer (SCSB) of 1989 was the first national CSI (Fornell, 1992). It was applied to 130 companies from 32 Swedish industries. However, while Fornell (1992) described the marketing foundations of SCSB in great detail, he only examined the statistical aspects of the problem. To overcome the limitations of the method, the German Customer Satisfaction Barometer (German Customer Barometer, 1995) was introduced. It covers 42 different industries, for which telephone interviews are conducted with the public by industry. Standardized questions about the levels of and reasons for satisfaction/dissatisfaction, recommendation of products and services, and complaint handling are all included.

The ACSI model, which builds upon the original SCSB model, was launched in 1994 and has served as the basis for other CSI models developed in many countries around the world (Fornell & Larcker, 1981). The model is composed of six factors: perceived quality, customer expectations, perceived value, overall customer satisfaction, customer complaints, and customer loyalty. Each factor is linked to the others through a causal relationship (Fornell et al., 1996). The higher the customer expectations are, the higher the perceived quality is; in turn, higher customer expectations and higher perceived quality lead to higher perceived value, which ultimately results in higher customer satisfaction. Likewise, a high level of customer satisfaction tends to reduce customer complaints, while also increasing customer loyalty. Thus, the causal model explains the inverse proportional relationship between customer complaints and customer loyalty (ACSI, 2010).

The European customer satisfaction index (ECSI) was introduced in 1999 in 11 European countries. The ECSI model (1999) employs six constructs including image, customer expectations, perceived qualities of hardware and software, perceived value, customer satisfaction, and customer loyalty. These six factors are linked through causal relationships; image has a determining influence on customer expectations, while customer expectations, in turn, affect the perceived quality of hardware or software (O'Loughlin and Coenders, 2004).

The National Customer Satisfaction Index (NCSI) was developed by the Korea Productivity Center and has been in use since 2009 (NCSI, 2014). The NCSI gauges the satisfaction level of a product, and the results are synthesized into data in the following categories: company, industry, economic sector and national levels. Specifically, the NCSI model assesses the expectancy level, quality, recognition of value, total satisfaction, complaint rate, customer loyalty, and customer maintenance rate. The strong point of the index is that it analyzes the cause and effect of the findings in its reports. Despite the performance of the NCSI, however, there are some measures which could be improved in the aspect of degree of influence on consumers.

While the validity of previous CSI models has been proven and they have been widely applied in various fields, most of the frameworks have essential weaknesses in different contexts and cross-sectors. Most of the frameworks are sector-agnostic, applying multiple sectors indiscriminately along with macro-indicators such as market-based performance measures, which allow for comparisons between companies, sectors, and/or nations (Park, Heo, & Rim, 2008; Shin, 2014).