Journal of High Technology Management Research 26 (2015) 124–136

Contents lists available at ScienceDirect

Journal of High Technology Management Research

The moderating role of technology readiness, gender, and sex in consumer acceptance and actual use of Technology-based services

Maria Tsourela *, Manos Roumeliotis

University of Macedonia, 156 Egnatia Street, GR-540 06, Thessaloniki, Greece

ARTICLE INFO

Available online 26 September 2015

Keywords:
Technology-based services
Technology adoption
Unified theory of acceptance and use of technology (UTAUT)
Structural equation modeling (SEM)

ABSTRACT

Considering the commercial value of technology, technology-based services can be described as the result of a protracted industrial approach, research and development, and continuously evolving innovation plans and actions. The purpose of this article is to investigate the beliefs that affect the acceptance and actual use of technology-based services, as well as the possible differences in terms of technology readiness, gender, and age, by acting as mediators, based on the unified theory of acceptance and use of technology (UTAUT). A research framework is being proposed which indicates, through data analysis and hypotheses testing, that performance expectancy, effort expectancy, social influence, and facilitating conditions are all significant determinants of intention to use technology-based services. Additionally, the differences imposed by the three mediators to the four beliefs, as well as to the behavioral intention toward actual use, offer critical information about technology-based services acceptance for managers, researchers and developers.

1. Introduction

On account of technologies' broadening characters in service delivery, it is necessary to comprehend consumers' readiness to use technology-based systems such as e-services (Parasuraman, 2000; Burke, 2002; Lin et al., 2007). The tremendous growth of technology-based products and services and the increasing rate at which companies are turning to technology to streamline how they market and serve customers call for a thorough assessment of consumers' technology readiness (CTR) (Parasuraman, 2000). CTR is a psychological predisposition that turns the scales through the decision process of choosing to use and continue using Self-Service Technologies (SSTs) (Lin & Hsieh 2006). Studies investigating predictors of technology usage in services have generally focused on ease of use, usefulness, and other technology design features (Meuter et al. 2005; Zhu et al. 2007), as well as consumer demographics and traits (Dabholkar & Bagozzi 2002; Bruner & Kumar 2007; Weijters et al. 2007).

Technology acceptance suggests that individual differences, including personality traits, generalized beliefs, and predispositions about technology, as well as demographics, may affect the embracement of TBSs (Im et al., 2003; Meuter et al., 2005; Parasuraman, 2000). For example, insecurity surrounding technology may negatively reflect on one's willingness to try out TBSs.

Considering the commercial value of technology, electronic services can be described as the result of a protracted industrial approach, research and development, and continuously evolving innovation plans and actions. Innovations in technology have changed the way services are conceived and delivered (Massey and Khatri, 2007). Consumer satisfaction can be increased through new consumer-oriented distribution channels that allow producers to better meet consumer demands (Liljander et al., 2006).

* Corresponding author.
URL's:URL: mt@teiser.gr (M. Tsourela), manos@uom.gr (M. Roumeliotis).

http://dx.doi.org/10.1016/j.hitech.2015.09.003
1047-8310/

Individuals within cultures are not passive recipients of innovations. Although it varies in extent, the individuals seek innovations, experiment with them, evaluate them, develop feelings about them, complain about them, and gain experience with them often through dialogue with other users (Greenhalgh et al., 2004). Consequently, the interactivity of technology-based services creates experiences and value for the consumer, resulting in a high diffusion rate. Diffusion is a process whereby an innovation spreads across a population of potential adopters over time through various channels (Fichman & Kemerer, 1999).

Fifteen years ago, the Clinton Administration stated that "Over the next decade, advances on the GII [Global Information Infrastructure] will affect almost every aspect of daily life, education, health care, work, and leisure activities. Disparate populations, once separated by distance and time, will experience these changes as part of a global community" (Dean et al., 2012).

According to David Dean et al. (2012), the Internet has become pervasive and its economic impact considerable. It will represent more than 5% of GDP in the G-20 nations by 2016, and in the most advanced countries, that figure will exceed 12%. As The Boston Consulting Group's latest update to the BCG e-Intensity Index indicates, the gap between the world's Internet leaders and laggards is widening. Governments of countries that are at the top of the e-Intensity Index rankings-or are rapidly moving up-encourage Internet use among consumers, businesses, and within government itself because they recognize that it can be a powerful edge in the competitive global economy. Countries further down the list in many cases have failed to implement effective policies that encourage widespread adoption and use. These countries risk falling further behind if they do not act.

The digital economy is often described as the "always on" or "real time" economy. The challenge for governments and businesses is to be always on too, in touch with the technology's impact on their functions, and continually evaluating ways to promote its use. Governments and businesses need to adopt a different style of policymaking. By choosing the right approach and organizing themselves accordingly, they can make sure that they keep up with the best and move ahead by promoting their technology-based services' particular advantages.

The purpose of this article is to investigate the constructs that affect the acceptance and actual use of TBSs, as well as the possible differences in terms of technology readiness, gender, and age, by acting as mediators, based on the unified theory of acceptance and use of technology (UTAUT) proposed by Venkatesh, Morris, Davis and Davis (2003). The remainder of the paper is set out in six sections. First, a review on the theory of e-services and Service dominant logic (S-D logic) takes place. Then, the literature review on consumer satisfaction and adoption of technology-based services is presented. Continuing, the research model is proposed, while all of its constructs, namely, Unified Theory of Acceptance and Use of Technology (UTAUT) beliefs, technology readiness, gender, and age are described. In the next section, the research methodology used in this work is outlined. Continuing, results are presented through the hypotheses testing and analysis of the data using a structural equation modeling. Finally, the last section contains the suggested conclusions and future research directions.

2. E-services theory

The era of e-service is a concept that convergences the shifting of the overall economy from goods to services and the rapid expansion of the information economy and electronic networks. Market space is a virtual space, where products and services exist as digital information and can be canalized through information channels. The context, framework, and infrastructure surrounding business–consumer interactions have changed in this new ground, while physical presence of both sides is not needed, in order for a transaction to take place (Bitner et al., 2000).

Technology-mediated services, in line with Froehle and Roth (2004), are services provided by a technological interface between provider and customer, which allows an immediate exchange of information over long distances. The immediate exchange of an ever-increasing amount of information makes technology-mediated services more and more multifunctional, allowing an adequate substitution of services, which formerly could be provided only through direct contacts of the provider and consumer and/or service object (Schumann, 2012). Some specific forms of technology-mediated services, such as self-services, have received substantial research attention (Bolton & Saxena-Iyer, 2009; Curran & Meuter, 2005; Oliveira & von Hippel, 2011.)

The nature of service encounters has been modified because technology infusion has changed the way services are captured, developed, and provided. Technology-mediated services are divided in self-services and delivered services (Schumann et al., 2012).

Self-services are produced by consumers themselves, by using the technological infrastructure, provided by the service provider. They can be either provider-based self-services, e.g., ATM, or consumer-based self-services, e.g., on-line banking. They are characterized by search qualities available, usability, and technology design and highly standardized processes. At the same time, they require high TR due to loss of personal contact and social exchange and lack of role clarity and role ability (Schumann et al., 2012).

Delivered services are separated in remote services – that are either provider-based remote services, e.g., long distance surgery, or consumer-based remote services, e.g., remote repair of IT systems – and interactive consulting services – that are either provider-based interactive consulting services, e.g., e-learning, or consumer-based interactive consulting services, e.g., information systems on train stations.

TBSs are applied in various applications, such as e-ticketing, e-government, ecommerce, e-health, e-banking, e-booking, and e-education (Taherdoost et al., 2013). Sheth and Sharma (2007) classified products and services on two dimensions. The first dimension is "the degree to which the product or service can be digitized" and the second dimension "involves both the marketers and the customer interacting in aspects of the design, production, and consumption of the product or service" (Sheth Sisodia et al. 2000; Prahalad & Ramaswamy 2004).

Taherdoost et al. (2013) introduced 31 services under eleven e-service applications and categorized these applications under the 2 × 2 matrix to evaluate them. The eleven e-service applications were e-health, e-ticketing, e-booking, e-banking, e-government, e-education, e-commerce, social networking service, entertainment, communication services, and information access.