Journal of Academia Vol.7, Special Issue 1 (2019) 91-101

DIMENSION MANIFESTATION OF USERS' PSYCHOGRAPHIC TRAITS TOWARDS ONLINE TRAVEL AGENCY

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Abstract

The purpose of this study is to assess the determinants of psychological traits towards users' technology experience specifically on Online Travel Agencies (OTA) via exploratory factor analysis (EFA). Working on these issues and after sequences of analyses to verify reliability and factor structure, the final 16 items of Technology Readiness 2.0 (TR2.0) with 4 items for each dimension (Optimism, Innovativeness, Discomfort, and Insecurity) have been congregated. Through an online survey, the technology readiness determinants were administered to 100 travelers at KLIA2 who have experienced on OTA. EFA using Principal Component Analysis with Varimax Rotation indicated 14 items, with 4 factors final solution with the following subscales: Innovativeness (4 items); Optimism (4 items); Discomfort (3 items); and Insecurities (3 items). All in all, only two items were removed from the original total of 16 items by the factor analysis based on the factor loading matrix for this final solution. This study basically plays an important role in contributing to the existing literature on the OTA users' standpoint by using an approach which is very powerful to redefine the factors within Technology Readiness. This enhancement has reorganized the items according to their importance specifically towards new perspective which are OTA users in Malaysia setting.

Keywords: Technology readiness, Online travel agencies, Exploratory factor analysis

Article history:- Received: 14 February 2019; Accepted: 30 October 2019; Published: 17 December 2019

Introduction

The hotel sector is undertaking changes because of the speedy growth of digital services and information technology. Online travel has intensely reformed the way tourism firms cooperate with their consumers. Online booking website has the possibility to take this expansion even further. Yet, several matters have been emphasized from the time when the early days of online services expansion such as the lack of relevance and ease of use of many services. Hence, the extensive implementation of online booking website and the Internet in more than a few countries as well as the establishment of so-called ecosystems in between vendors of technology specify that many of these issues have been overcome (Eriksson, 2013).

In response to this e-business opportunity, most hotels will have their own recognized websites to enable promotion and reservations on the internet. With the Internet users currently reached 77.6% of Malaysia's population, (Malaysian Communications and Multimedia Commissions,

2016), this symbolizes an attractive market possibility. Not only that, the third party or the online agencies also begin established their own website to gain opportunities in the market and also in the hotel sector. It has been acknowledged to have potentials in contributing to the growth of the service sector and boosts the economy of the country. Malaysian government's determination is to explore the potential of the tourism sector. With the existence of the information technology and digital services, it will be the advancement for the sector to grow and compete with the others. Therefore, it is vital to address customers' technology readiness before businesses invest in technology particularly self-service technologies (Lin and Hsieh, 2006).

Technology readiness, in general, involves four (4) scopes i.e. (i) optimism, (ii) innovativeness, (iii) discomfort, and (iv) insecurity. Optimism basically conveys the positivity about technology and also the trust users have in believing that technology has the ability to offer superior control, flexibility as well as effectiveness in their lives (Parasuraman, 2000). On the other hand, innovativeness is related to a tendency that an individual has in undertaking new things while insecurity and discomfort are known as the inhibitors of technology readiness. Basically, according to Parasuraman (2000), insecurity involves the act of an individual in distrusting technology when it comes to security as well as privacy aspects. Discomfort consist of a perception of lack of control over technology and feeling overwhelmed by technology (Parasuraman, 2000).

According to Straub (2009), future research on technology adoption needs to examine the consequences of technology towards individual differences so that it can create a holistic understanding on how technology change influences the organization or the individual. Researchers should also be looking at how technology alters individuals' views of technology. Not much is known about Malaysian customers' technology readiness and how they perceived the value offered by OTAs, thus it is difficult to figure out the effectiveness of the system based on their perception on OTAs' usage which will then influence customers' behavioral intention. In an academic or practical perspective, knowledge of online consumer behavior is still in a developing stage (Muthaly, Ha, Yeo and, Kim, 2009; Vazquez and Xu, 2009). According to Piercy (2012), there is a need to consider the effect of psychographic factors on the acceptance of online services, since past studies only confirmed the influence of online features such as E-Quality and Technology Acceptance Model (TAM) towards online service adoption. It is very crucial to study on consumers' psychological traits or general belief since technologies are varied and understanding on how technology-specific characteristics influence acceptance is a crucial issue in research (Azdel, Khalid, Radzi, and Yusof, 2016; Azdel, Awang, Yusof, Radzi, and Ahmad, 2018)

Literature Review

Online travel agencies (OTA)

OTA is a moderately new concept in this country. Meuter, Ostrom, Roundtree, and Bitner (2000) defined it as a technological platform that allows tourist to produce a service independently from direct service personnel participation. Similar description irrespective of the words used were given by a number of researchers, saying that OTA is technology-based service delivery interfaces that allow consumers to simplify a deal without the assistance of an employee or a representative (Lee, Castellanos, and Chris Choi, 2012). According to Schawbel (2015), OTA has become the heart of the online business which possessed a total of 38% market share of the world online market. Currently, two vendors which are Expedia; expedia.com, homeaway.com and hotels.com and Priceline; opentable.com, booking.com, and kayak.com dominate the market. According to Statista (2016), in 2015, sales in a total of $533.52 billion US dollars were only from global online

travel. Most online reservation websites are customizable to meet the tourist ideal holiday experience.

There are a lot of scholars have studied the factors of hotel selection. The significant of hotel attributes in terms of booking decision is different according to the customer. According to Yavas and Babakus (2005), it depends on the type of tourist. While other scholars suggest different factors such as gender (McCleary, Weaver, and Lan, 1994), demographic background (Li, Law, Vu, and Rong, 2013) and customer characteristics (Prud'homme and Raymond, 2013).

Sohrabi, Vanani, Tahmasebipur, and Fazli (2012) pointed out that the major characteristics considered for hotel selection are safety and security, staff and services, cleanliness and room comfort, promenade and comfort, news and recreational information, network, pleasure, room facilities, expenditure, and car parking. There has been little scholarly research investigating how customers' behavior affect their experience on the online channel, but at the same time, more customers used this kind of distribution channel. Most service organization also adopted this multi-channel distribution.

People may find it hard to accept new technologies despite their booming in this generation. If consumers are not ready, a business cannot force the implementation. As mentioned earlier, various personalities of people have different acceptance towards technology. According to Baltas (2003), good predictors such as attitudinal and behavioral characteristics will be able to forecast online buying behavior. Each consumers' purchase decision towards different types of product and services can be categorized by a solid indication such as from their characteristic's personality profiles (Baumgartner, 2002). Since the emergence of TR, a lot of studies investigated the strength of TR in understanding technology readiness of consumers (Lanseng, and Andreassen, 2007; Sophonthummapharn and Tesar, 2007; Victorino, Karniouchina, and Verma, 2009), or measured the capability to applied to various cultural environments (Elliott, Meng, and Hall, 2008; Tsikriktsis, 2004).

Technology Readiness (TR)

Individuals are likely to have different feelings towards various technology, whether it is positive or negative. However, the level of dominance of those feeling is not the same across persons. Thus, it is rational that consumers will have dissimilar excitement on the usage of technology-based service. According to Davis, Bagozzi, and Warshaw (1989), individuals are believed to be exposed to theoretical technology-belief continuum anchored by strongly positive at one end and strongly negative at the other. The high sense of willingness to adopt or to use technologies is referred to as Technology Readiness (TR). TR is specified as a person's inclination to adopt and use new technologies for achieving goals in home life and at work (Parasuraman, 2000). In addition, TR is a perspective consequential from a shape of psychological enablers and inhibitors that as a whole determine an individual's propensity to use new technology. Those state of mind categorized the positive and negative belief about technology into four technology readiness dimension called optimism, innovativeness, discomfort, and insecurity. The first two dimensions are known as the motivator which acts to increase the TR of the customer while another two are the inhibitors that act in restraining the TR. According to Lam, Chiang and Parasuraman (2008), both stimuli and inhibitors will manage every persons' behavior towards technology adoption. Generally, TR has been specifying an individual's openness to technology. The four TR variable signifies to various attributes and psychological processes essential to technology adoption. Therefore, it is vital to briefly discuss every one of the four variables to better understand the idea in this study.

Generally, optimistic customer inclines in getting involved when there is an emergence of new technology products as they usually are not fully concerned on the negative effect and are more open in willingly accepting the technology (Parasuraman, 2000). Individuals with innovativeness traits have to be the first to get hold of new technology when it is available on the market, compare to others (Tsikriktsis, 2004). Discomfort correspond to the common fear people possess towards technology products and services in a way that product and services are directly driven towards learning costs besides understanding complexity (Mukherjee and Hoyer, 2001). Kwon and Chidambaram (2000) in their study have also highlighted about the hesitation among the individuals who have the trait of insecurity on using technology which is possibly due to their skepticism on the matter. Even a person who is an optimist and innovative towards technology also experienced anxiety the same way as the insecure and discomfort ones (Parasuraman, 2000). Mick and Fournier (1998) had confirmed this situation where simultaneously, customers can feel both positive and negative emotion towards new technology. However, when individuals use new technology, they will express more dominant feelings in line with TR dimensions. According to Curran, Meuter, and Surprenant (2003), customer attitudes toward specific technologies is the factor which affects customers' desire and willingness to use self-service technologies. Meuter, Ostrom, Bitner, and Roundtree (2003) argued that level of technology anxiety also contributed to the factor. Venkatesh (2000) suggested that both playfulness and anxiety towards computer serve as the main determinants on their inclination to embrace technology.

Methodology

In the context of this study, the research instrument has been developed by the researcher simply by the utilization of the reviewed literature which apparently includes related theories based and the existing measurement scale and variables. The measurement items were adapted from the latest literature which is in the scope of research studies. There are critics and feedbacks towards Parasuraman's (2000) first technology readiness articles that highlighted on the necessities to reassess the instruments. The changes in Parasuraman and Colby (2015) include a more rigorous instrument in measuring technology readiness. Working on these issues and after rounds of analyses to verify reliability and factor structure, the final 16-items TR 2.0 with 4 items for each dimension (Optimism, Innovativeness, Discomfort, and Insecurity) have been congregated. In the first section of the questionnaire, these 16 items were used by the researcher without any alteration or amendment since the item has already been mixed with a positive and negative question. Although in Table 1, the items are separated by group of four, the final questionnaire was not showing any indicator of group for each item. Convenience sampling was used to select the respondents as only the ones with experience with OTA are the target population. Since there was no sampling frame, the researcher collected 100 subjects that were enough to provide significant meaningful data. Respondents were asked to respond to all 16 items with fully anchored 5-points agreement scale (strongly disagree, disagree, neutral, agree, strongly agree) used in TR 2.0 (Table 1). One hundred OTA users at Kuala Lumpur International Airport (klia2) were asked to respond to the questionnaire via google forms and each of them was personally administered.

Table 1: Technology Readiness 2.0 (TR 2.0)

Code	Items	Sources
Optimism		
OPT1	New technologies contribute to a better quality of life	Parasuraman and Colby (2015)
OPT2	Technology gives me more freedom of mobility	Parasuraman and Colby (2015)
OPT3	Technology gives me more control over my daily lives	Parasuraman and Colby (2015)
OPT4	Technology makes me more productive in my personal life	Parasuraman and Colby (2015)

Innovativeness		
INN1	People seek advice from me on a new technology	Parasuraman and Colby (2015)
INN2	Usually, I am among the first in my circle of friends to acquire new technology when it is available	Parasuraman and Colby (2015)
INN3	I can usually figure out new high-tech products and services without help from others	Parasuraman and Colby (2015)
INN4	I keep up with the latest technological developments in my areas of interest	Parasuraman and Colby (2015)
Discomfort		
DIS1	When I get technical support from a provider of a high- tech product or service, I sometimes feel as if I am being taken advantage of by someone who knows more than I do	Parasuraman and Colby (2015)
DIS2	Technical support lines are not helpful because they don't explain things in terms I understand	Parasuraman and Colby (2015)
DIS3	Sometimes, I think that technology systems are not designed for use by ordinary people	Parasuraman and Colby (2015)
DIS4	There is no such thing as a manual for a high-tech product or service that's written in plain language	Parasuraman and Colby (2015)
Insecurity		
INS1	People are too dependent on technology to do things for them	Parasuraman and Colby (2015)
INS2	Too much technology distracts people to a point that is harmful	Parasuraman and Colby (2015)
INS3	Technology lowers the quality of relationships by reducing personal interaction	Parasuraman and Colby (2015)
INS4	I do not feel confident doing business with a place that can only be reached online	Parasuraman and Colby (2015)

Findings

Exploratory factor analysis (EFA)

Generally, numerous variables are used to characterize objects in many scientific studies thus making the study become more complex in which some of the variables may measure different aspects of a same underlying variable (Rietveld and Van Hout, 1993). According to the authors, the above situation was the main reason exploratory factor analysis (EFA) had been invented. The purpose of this analysis is to bring inter-correlated variables together under more general, underlying variables, in line with the suggestion by Cudeck (2000) who argued that variables from a carefully formulated domain are usually correlated with each other thus it is common to find that scores on each variable share information explained in the others. He referred to the analysis as a collection of methods for explaining the correlations among variables in terms of more fundamental entities called factors. There is a convenient option offered to check whether the sample is big enough through the Kaiser-Meyer-Olkin measure of sampling adequacy test otherwise known as KMO-test. According to Field (2000), the sample is adequate if the value of KMO is greater than 0.5. In presenting the results, the measure of sampling adequacy value for the individual items was set to be greater than .50 and the KMO (overall items) value to be greater than .60 (Blaikie, 2003). Bartlett's Test of Sphericity is another important test used to detect significant correlations that are present among the variables. If the value of the test is large and significant ($p < .05$), therefore it is appropriate to carry on with the factor analysis. The number of factors to be retained is similar to the number of positive eigenvalues of the correlation matrix. Some rules of thumb that have been suggested in retaining the factors were applied for this study

(Thompson, 2004; Field, 2000; Rietveld and Van Hout, 1993). First, there was a utilization of factor extraction method of principal axis factoring where any factors that presented an eigenvalue of 1.0 or more were retained. Factors which accounted for above 70% of the variance will also be kept for subsequent analyses. Finally, the scree plot of the analyses was considered where all the factors identified before the elbow or the breaking points were retained.

Technology readiness level among the 100 respondents was measured by using the 16 items Technology Readiness 2.0 (TR 2.0) scale which was developed by Parasuraman and Colby (2015). There are four factors; optimism, innovativeness, discomfort, and insecurity where each of them represented by four items. From the concept of the technology readiness, all factors are independent or not correlated thus principal components analysis through varimax rotation was applied to extract the factors and the results are presented in Table 2.

Table 2: Results of Factor Analysis Output for Technology Readiness

	Component			
	1	**2**	**3**	**4**
Innovativeness2	0.882			
Innovativeness4	0.790			
Innovativeness3	0.784			
Innovativeness1	0.709			
Optimism3		0.864		
Optimism1		0.821		
Optimism4		0.779		
Optimism2		0.742		
Discomfort4			0.894	
Discomfort2			0.843	
Discomfort3			0.786	
Discomfort1			0.640	
Insecurity3				0.856
Insecurity1				0.789
Insecurity2				0.778
Insecurity4				0.664
Eigenvalues	6.285	3.288	1.745	1.046
Percentage Variance Explained	39.284	20.550	10.909	6.539
Total Variance Explained		77.282		
KMO and Bartlett's Test		0.777		
Bartlett's Test of Sphericity		581.093		

Note. n = 100, p < .001

Table 2 depicts that the KMO measure of sampling adequacy value for all items is 0.777 thus this eventually suggested that the samples in this study are considered adequate in terms of factor analysis. The result was shown by Bartlett's Test of Sphericity meanwhile is significant (Approx. Chi-Square = 581.093, $p < .001$) which indicated the correlation matrix that is significant and appropriate for factor analysis. Based on varimax rotation, the results have concluded four factors

where the eigenvalues are more than 1.0 thus interpreting 77.282% of the variance, which is in line with the measured construct based on the original TR2.0. The breaking point of the scree-plot is also at the fourth factor, clearly illustrates the Eigenvalues score from the table.

EFA of Motivators Factor

The first factor which was labeled as innovativeness is one of the motivators to technology readiness among individuals. Based on the output, this factor explains the variance in the data with the biggest percentage (39.284%) with the eigenvalues of 6.285, a bit higher than the second factor (optimism) with a percentage of 20.550%. As for the factor loading, all items in this analysis had primary loadings over 0.7 but obviously, the items clustered under the first factor attained the highest loading factors, ranging from 0.709 to 0.882. As the names implied, innovativeness factor consists of items asking about the individual capabilities on technology in general. The feelings of 'being the first to acquire new technology when it appears' (Innovativesness2) load high on this factor.

The second factor based on the rotated component matrix is optimism which also consists of four items related to the control to daily life activities (0.864) better quality of life (0.821), productivity of personal life (0.779), and freedom of mobility (0.742) in which each of them recorded a factor loading of more than 0.7. With eigenvalue of 3.288, this factor was accounted for 20.550% of the total variance.

EFA of Inhibitors Factor

Unlike the previous factors, the third factor named discomfort had one item being removed (Discomfort1=0.640) because it did not contribute to a good factor structure and failed to meet a minimum criterion of having a primary factor loading of 0.7 or above (Neill, 2008). As the name implies, discomfort factor consists of items asking about the use of language and terms either in the manual and technical support lines. The other three-factor loadings were retained with a score of 0.894 (Discomfort4), 0.843 (Discomfort2) and 0.786 (Discomfort3).

In the fourth factor, four items mainly asking about the respondents' opinion on the adverse effect of technology (insecurity) were initially included and the factor analysis undertaken suggests that this factor explained 6.539% of the variance with an eigenvalue of 1.046. Factor loadings for the items clustered under this factor are not followed their exact sequences in the questionnaire where the first item regarding technology reduce relationships' quality had the primary factor loading of 0.856. While the second item (people excessive dependency on technology) had the factor loading of 0.789 followed by the third item (technology distracts people) with 0.778. The last item attained the lowest load of 0.664 and was removed due to failure to meet good simple factor contribution and criteria of 0.7 or above (Neill, 2008).

Summary of EFA Results

All in all, only two items were removed from a total of 16 items from the factor analysis based on the factor loading matrix for this final solution which is presented in Table 2. Theoretically, meaningful labels for the extracted factors should be reevaluated by examining the actual items and factors once the factor analysis is completed as a good factor name offers an accurate, useful description of the underlying construct, and thus enhanced the clarity of the report (Neill, 2008). Nevertheless, the top one or two loading items for each factor examined in the analysis suggested that the factor labels proposed by Parasuraman and Colby (2015) in their original TR2.0 still reflected the extracted factors appropriately and for that reason, they were retained.

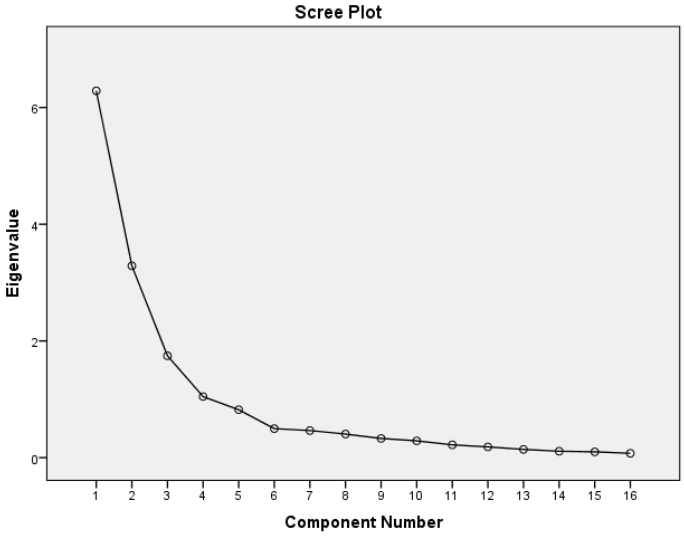

Figure 1: Scree-plot of Technology Readiness displaying the eigenvalues associated with four factors above value 1.0

Conclusion

The results of this study reflected several theoretical and practical implications that have significant relevance and great importance to both academicians and practitioners. Theoretically, this study basically plays an important role in contributing to the existing literature on the OTA users' standpoint by using an approach which is very powerful to redefine the factors within Technology Readiness. This enhancement has reorganized the items according to their importance specifically towards a new perspective which are OTA users in Malaysia setting.

In a practical context, the knowledge in this area will benefit the managers in fine-tuning their product positioning as well as communication strategies in order to align the Technology Readiness profiles of a potential customer based on the different stages involved in the product lifecycle. With those input about their customers, the managers can easily customize promotion and advertisement according to customers' behavior through e-mail, calls, and social media.

Future research should expand the findings by incorporating Technology Readiness with a more robust and well-known technology acceptance model. The integration could broaden current research's scope and generalizability of present technology acceptance models, with the addition of psychographic characteristics dimension such as technology readiness.

Acknowledgment

The work described in this study was funded by the Ministry of Education Malaysia, Universiti Teknologi MARA, Malaysia (UiTM) and Putra Business School, Universiti Putra Malaysia (UPM).

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