

Dewan, Nargis; Hossain, Md Billal; Kim, Gwi-Gon; Dunay, Anna; Illés, Csaba  
Bálint

**Article**

## Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator

Cogent Business & Management

**Provided in Cooperation with:**

Taylor & Francis Group

*Suggested Citation:* Dewan, Nargis; Hossain, Md Billal; Kim, Gwi-Gon; Dunay, Anna; Illés, Csaba Bálint (2022) : Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 9, Iss. 1, pp. 1-18, <https://doi.org/10.1080/23311975.2022.2096998>

This Version is available at:

<https://hdl.handle.net/10419/289027>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

# Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator

Nargis Dewan, Md Billal Hossain, Gwi-Gon Kim, Anna Dunay & Csaba Bálint Illés

To cite this article: Nargis Dewan, Md Billal Hossain, Gwi-Gon Kim, Anna Dunay & Csaba Bálint Illés (2022) Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator, Cogent Business & Management, 9:1, 2096998, DOI: [10.1080/23311975.2022.2096998](https://doi.org/10.1080/23311975.2022.2096998)

To link to this article: <https://doi.org/10.1080/23311975.2022.2096998>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 17 Jul 2022.



Submit your article to this journal [↗](#)



Article views: 3329



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 2 View citing articles [↗](#)



Received: 13 April 2022  
Accepted: 29 June 2022

\*Corresponding author: Nargis Dewan,  
Doctoral School of Business  
Administration, Kumoh National  
Institute of Technology, Gumi, South  
Korea  
E-mail: [raowafa9@gmail.com](mailto:raowafa9@gmail.com)

\*Md Billal Hossain, Doctoral School  
of Economic and Regional Sciences,  
Hungarian University of Agriculture  
and Life Sciences, 2100 Godollo,  
Hungary  
E-mail: [shohan\\_bd13@yahoo.com](mailto:shohan_bd13@yahoo.com)

Reviewing editor:  
Albert W. K. Tan, Asia Pacific  
Graduate Institute, Shanghai Jiao  
Tong University, SINGAPORE

Additional information is available at  
the end of the article

## OPERATIONS, INFORMATION & TECHNOLOGY | RESEARCH ARTICLE

# Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator

Nargis Dewan<sup>1\*</sup>, Md Billal Hossain<sup>2\*</sup>, Gwi-Gon Kim<sup>3</sup>, Anna Dunay<sup>4</sup> and Csaba Bálint Illés<sup>4</sup>

**Abstract:** Mobile application acceptance is an emerging research area that gained wide-spread popularity. Managerially important but the overlooked aspect is mobile applications adoption effect on overseas resident's life satisfaction. Travel applications make users' life easier with a smooth travel satisfaction that contributes to life satisfaction. The users who perceive applications useful and easy to use are satisfied with life in South Korea. Moderating effects of travelers' involvement between three types of transportation applications and perceived usefulness and ease of use, where people use mobile applications before and during traveling, to fulfill travel needs, location detail, and to make the right arrangements were identified as moderator of technology adoption model (TAM). Data collected from 400 users conclude that relation of usefulness with travel satisfaction is not significant while residents perceive ease of use were significant determinants of travel satisfaction. TAM acceptance influences travel satisfaction which provides more feeling too satisfied from life.

**Subjects:** Communication Technology; Internet & Multimedia; Business, Management and Accounting; Management of Technology & Innovation; Information Technology

**Keywords:** Mobile travel application; perceived usefulness; perceived ease of use; traveler involvement; traveler satisfaction

### 1. Introduction

Life satisfaction has been investigated by scholars in numerous diverse disciplines, e.g., public health, tourism, and psychology. Previous research has used several methods to understand how different factors contribute to life satisfaction (Friman et al., 2017; C. C. Chen et al., 2016 & 2016), These studies provide a foundation for understanding the role of travel satisfaction with life overall well-being. For example, Friman et al. (2017) have theorized whether multiple purpose travel affects emotional well-being as well as life satisfaction; similarly, Dittmann and Goebel (2010) have examined how socioeconomic status of neighborhood aspects affects life satisfaction. Furthermore, the authors revealed that during travel, "relaxation" is a better predictor of life satisfaction (C. C. Chen et al., 2016). Additionally, X. Chen et al. (2019) found that cross-cultural social adaptation significantly associated with overseas life satisfaction. However, to the best of our knowledge, there have been few research studies about involvement (Josiam et al., 1999; Dedeoğlu, 2019; Choi et al., 2020) and augmented reality (AR) TAM adoption behavior to examine overseas resident's life satisfaction.

Research has revealed that how user acceptance of the technology can be accurately explained to enhance life satisfaction, which strongly associated with everyday activities (Köttl et al., 2020).

TAM acceptance can be explained by acceptance of perceived usefulness and perceived ease of use. Perceived ease of use plays a significant role in technology acceptance because it increases users' experience (Van der Heijden, 2004). Modern increase of mobile applications has been revolutionized the way people experience their surroundings to enhance the overall experience of traveling, a recent study explored the opportunities of using augmented reality to enhance the travel experience; British female travel application acceptance depends on favorable attitude towards perceived usefulness and perceived ease of use. So, to identify the potential of applications, it is essential to examine technology acceptance and augmented reality (AR) mobile applications acceptance behavior of users (Tom Dieck & Jung, 2018).

The literature has ignored the impact of different mobile application acceptance behavior to measure travel satisfaction and life satisfaction for overseas. How comfortable and easy to travel overseas residents feel by living abroad. Mobile applications acceptance is the most rapidly growing technology invention worldwide. Previous research has mainly investigated the relation of travel experience to life satisfaction by using different methodologies (Friman et al., 2019); this study provides in-depth understanding of modern mobile travel applications acceptance behavior that influence overseas residents travel satisfaction and life satisfaction in South Korea.

## 2. Theoretical background and hypotheses

### 2.1. Transportation mobile applications impact on AR technology adoption

Transportation takes much importance because travelers rely on Buses, Taxis or Cars in their daily life and work, selection of transportation mode based on factors such as time to reach the destination or so on, similarly person traveling in bus or subway thinks that from where the traveler should get off to find a taxi? Taxi mobile-based applications enable users to make informed transportation decisions, taxi application delivers a piece of real-time availability information to mobile users, taxi application equipped with GPS devices also monitors traffic condition around the traffic stand in the particular area, in this way people can decide the best place for them to get a taxi and they can also decide whether they should take bus or subway first in their ways (Wu et al., 2012). So, our study selected mobile booking taxi application (Kakao Taxi) to examine technology acceptance for rental taxi transportation.

Travelers have difficulties moving around independently (Sánchez & Oyarzún, 2011); bus applications for the mobile devices are designed to help people to take public transportation, purpose to design bus application is to be notified where and when the next bus is coming (Banâtre et al., 2004). Buses generally convey a huge number of passengers and goods available for public benefit (Voon et al., 2016). Current study examined the acceptance behavior of Kakao bus application used by residents for daily routine travel purpose in South Korea.

Transportation applications provide updated information to travelers, mobile communication devices getting priority comprises an application over the wireless medium, besides mobile communication devices, transmits and receives traffic congestion update data as they pass within communication range similarly mobile navigation application predicts traffic flows, traffic patterns, and compute routes from current position to target destination (Tzamaloukas & Farmwald, 2004). So, study examined acceptance behavior of Kakao Navi application that allows travelers to plan trips by travelling in personal transportation.

Researcher have examined that the Technology acceptance model (TAM) is used to predict behavioral intention to use information system depends upon perceived ease of use and usefulness of websites that connect people through social networks (Rosen & Sherman, 2006). Based on past research literature study attempts to develop a model that will explain the acceptance of modern mobile travel applications (Kakao Navi, Kakao Bus, Kakao Taxi).

Significant research has been done on mobile-based applications, current smartphone ranges from navigators to digital cameras as well as GPS-based and becoming the commanding platform for technology acceptance (Tom Dieck & Jung, 2018). To boost traveling experience usage of applications plays an important role, with the emergence of updated applications; travel organizations can enhance the traveler satisfaction and experience (Leue et al., 2014). Perceived usefulness and ease of use cause travelers' to accept or reject invented mobile application, traveler's use the specific application if they believe it will help to perform their travel better, easy to use application is more likely to be accepted by users (Davis, 1989).

Our study seeks to determine whether invented travel applications can assist in traveling by considering it useful and easy to use for traveler's in South Korea. Therefore, we proposed the following Hypotheses:

Hence, the proposed hypothesis of the study is initiated:

H1: Public transportation application type A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) positively influenced to the Perceived Usefulness.

H2: Public transportation application type A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) positively influenced to the Perceived Ease of Use.

### **2.2. Perceived ease-of-use impact on perceived usefulness**

Perceived usefulness and perceived ease of use are two variables in the technology adoption model (TAM) that influence intentions to use technology (Subramanian, 1994). Several lines of research discussed Perceived ease of use and usefulness developed by Davis (1989) play a major role to influence the usage of information, level of usage accurately explain the critical importance of various technologies (Segars & Grover, 1993). In perceived usefulness person believes that using a technology would enhance performance, while in perceived ease of use persons believe that using a particular technology would be free of effort and easier to use lead to more accept by the users (Davis, 1989). Researchers concluded that perceived usefulness and perceived ease of use helps to formulate intentions for technology acceptance (Ramayah & Ignatius, 2005). Furthermore, the authors, Gefen and Keil (1998) examined the positive influence of ease of use on the Perceived Usefulness. However previous research has not identified perceived ease of use related to perceived usefulness in case of transportation application types and their overall influence on overseas life satisfaction. The researcher concluded that application must be easy to use for people (Adams et al., 1992; Gefen et al., 2003; Sengars & Grover, 1993; D. W, 2006).

The effect of perceived usefulness and perceived ease of use has been explored by many researchers (Gefen et al., 2003; Ramayah & Ignatius, 2005; D. W, 2006). However, the literature lacks empirical evidence on whether the travel application perceived ease of use impact the perceived usefulness to formulate application acceptance behavior.

Therefore, we proposed the following Hypotheses:

H3: Perceived ease of use of Public Transportation Application A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) have a positive impact on Perceived Usefulness.

### **2.3. The influence of perceived usefulness and ease of use on travel satisfaction**

In introducing TAM, mobile application ease of use and usefulness plays important role in user's satisfaction, users who consider the tool easy to use and useful shows positive attitude which increase their intentions to use the application, usefulness is related to the quality of tool while

content delivery and interface are the focus of ease of use (Joo et al., 2011); Perceived usefulness has a direct effect on satisfaction. To measure travel satisfaction with TAM acceptance, perceived usefulness and ease of use are especially important ways, so travelers consider application easy to use will consider it useful (Calisir & Calisir, 2004).

Travelers get support from mobile-based applications, to provide an enjoyable experience of travel, newly developed applications provide valuable information, (Davis, 1989; Tom Dieck & Jung, 2018). Usefulness and easy to use of applications within the transportation industry is determined and seen a positive acceptance behavior, Transportation application influence the intentions of travelers to use the application useful in assisting with trips planning (Niemand & Chauke, 2017; literature have ignored the overseas user's application acceptance (TAM) on travel satisfaction (Foth & Schroeter, 2010; Korbel et al., 2013).

Therefore, we proposed the following Hypotheses:

H4: Perceived Usefulness of Public Transportation Application A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) have a positive impact on travel satisfaction.

H5: Perceived Ease of Use of Public Transportation Application A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) have a positive impact on travel satisfaction.

#### **2.4. Mobile applications**

The use of mobile applications has become increasingly popular which has significantly transformed modern life (Lee & Lee, 2016; Schilit et al., 1993). Over the last decade, the rapid development of mobile phones has resulted in devices with more sophisticated operating systems increasing mobile-based applications designed for traveler's, application used to interact and engage with information daily (Niemand & Chauke, 2017). In recent years, lifestyle of people has been changed with the development of applications; the usefulness of travel applications has increased greatly allowing users to perform more tasks in a friendly environment, a wide range of applications to be developed with the advances in mobile technology which users want to use while on the move (Harrison et al., 2013). With the development of travel applications, traveler's life has become much easier (Hussain et al., 2018).

Many researchers have examined mobile applications usability (Baharuddin et al., 2013; Harrison et al., 2013; Lee & Lee, 2016; Hussain et al., 2018) in different contexts, but there is limited research about mobile application impact on acceptance in the context of overseas life satisfaction.

Therefore, we proposed the following Hypotheses:

H7: Public Transportation Application A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) have a direct impact on life satisfaction.

#### **2.5. Travelers' involvement**

The Author (Li, 2014), pointed out Involvement is a psychological state of motivation, interest, or encouragement among individuals or groups, it changes from behaviors and have a strong relation with involvement, high or low involvement can be seen in different consumer behavioral studies.

In a variety of ways, the involvement construct has been approached, Involvement refers to the strength of individual's cognitive structure to a focal object, the interaction between individuals and objects, which relates to individuals' perceptions of importance and relevance of shown

behavior, involvement has been shown to have a moderating effect on variables to analyze loyalty (Chen & Tsai, 2008) while study ignored the moderating relation of involvement for TAM.

Involvement gained a lot of importance, previous research proposed behavioral modes and explained involvement concepts with different perspectives (Poiesz & Cees, 1995; Zaichkowsky, 1986) the authors emphasized on the degree of arousal of involved individuals concerning goal-related object represents the intensity of involvement. Similarly, the author (Chen & Chen, 2010) suggested that for traveling activities that need participation, the attraction was considered the most influential factor. While, the authors C. C. Chen et al. (2016) suggested that relaxation is considered a better predictor of life satisfaction during traveling. In Another study (Bian & Zhu, 2020) explored the relation of travel involvement with travel intention, the authors concluded that involvement is considered the most important component of travel experience while the study ignored the moderation relation of travelers' involvement with technology acceptance context.

However, literature ignored the gap on overseas life satisfaction with the acceptance of travel application; the moderating role of traveler's involvement has remained mostly unconnected.

Therefore, we proposed the following Hypotheses:

H8: Traveler's involvement moderates the relation between transportation applications A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) and perceived usefulness.

H9: Traveler's involvement moderates the relation between transportation applications A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi) and perceived ease of use.

## **2.6. Travel satisfaction impact on life satisfaction**

Satisfaction is linked to personal emotions used to measure travel behavior and suggested that traveling utility may be considered a proxy for traveling behavioral satisfaction. Previous research has investigated satisfaction with work and satisfaction with daily travel (Friman et al., 2017; Skurzak et al., 2020). At the same time, travel behavior studies have focused on travel costs, travel experiences, and behavioral intentions, satisfaction with public transport can have an impact on people's general quality of life and subjective well-being (Lunke, 2020; McCarthy & Habib, 2018).

It is well known that the attention on overseas resident's population is increasing, relatively few studies have considered an alternative solution to this problem and conducted research with the perspective of foreign residents (Kang et al., 2020; Anderson, 2020; Izawa & Oka, 2020; O. B. Smith, 2013; Bergstad et al., 2011; Friman et al., 2017). Travel satisfaction has been linked to life satisfaction but no previous research exists for overseas resident's life satisfaction (Waygood et al., 2019).

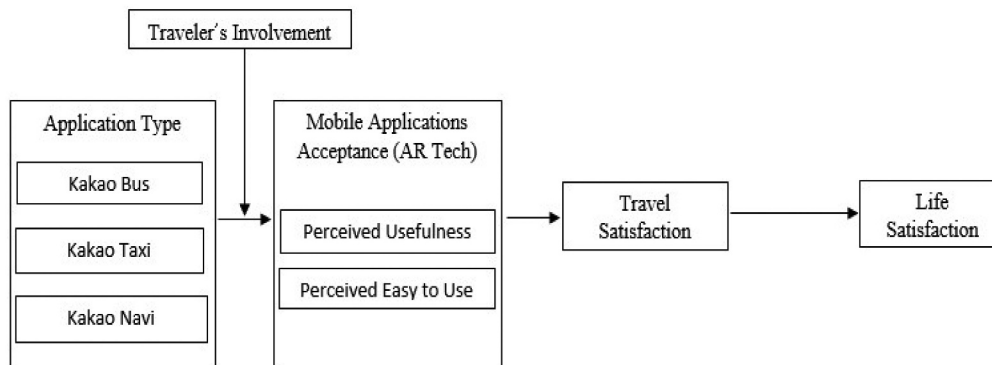
Therefore, we proposed the following Hypotheses:

H10: For public transportation application type A (Kakao Bus), type B (Kakao Taxi), type C (Kakao Navi); travel satisfaction has a positive influence on overseas resident's life satisfaction.

The relationship among travel application type and Mobile application acceptance (AR Tech), travel satisfaction and traveler's involvement and overseas resident's life satisfaction is illustrated in Figure 1.



Figure 1. Research model.



### 3. Method

#### 3.1. Sample and data collection

The sample was composed of 400 overseas residents' participants from South Korea; we surveyed the second largest city in South Korea, Busan (Ahn et al., 2016) and attractions for foreigners because of its beaches. The participants were asked about their residency in South Korea because of participation condition; residency in South Korea for more than one year, the residency of all overseas participants was confirmed before data collection. Regarding gender distribution of the total participating, sample (N = 400), most of the respondents were male (57.8%; n = 169) while 42.3% were female (n = 231). In descending order, students (35%), self-employed (19.7%), government employee (16.8%) and participants belonging to other occupations (28.5%) were included in the survey. Of all respondents, 0.5% were less than 20 years of age, 39% were between 21 and 30, 41% were between 31 and 40, 15.2% were between 41 and 50, and 4.2% declared they were above 50 years of age.

#### 3.2. Research instrument

To gather information about the participants' life satisfaction measurement of constructs were adopted from existing literature. The questions were structured along a seven-step scale. Based on stated definitions, scale and literature initial scale items were generated. The five questions were drawn for traveler's involvement scale from the handbook of Marketing scale (Bearden et al., 1999); perceived ease of use and perceived usefulness items obtained from the existing scale (Van der Heijden, 2004); moreover, four items for travel satisfaction scale and three items for life satisfaction scale developed by C. C. Chen et al. (2016).

### 4. Results and discussions

#### 4.1. Validity and reliability tests

We used the software SPSS (version 22.0) AMOS (Version 21.0) to perform Cronbach alpha, and CFA, Path Analysis procedure was applied and hypotheses were tested. To access the reliability and validity of the research constructs confirmatory factor analysis (CFA) was conducted. Then a Structural regression model was used to find out the influence of public transportation mobile applications (Kakao Bus, Kakao Taxi and Kakao Navi) impact on TAM model (perceived usefulness and perceived easy to use) adoption behavior; Furthermore, travel satisfaction impact analyzed to know its influence on life satisfaction, also moderator influence of travelers' involvement was examined and tested all hypotheses.

Guidelines suggested by (George, 2011) Cronbach-alpha (0.8 ~ 0.9) of all variables indicate a good internal consistency, after confirming Fit Indices, validity, and reliability of variables and



**Table 1. Validity and Reliability of Variables**

Constructs	Factor Loading	C.R
Travelers' Involvement	0.866	0.750
	0.796	0.634
	0.794	0.630
	0.733	0.598
	0.714	0.510
Usefulness	0.866	0.750
	0.893	0.797
	0.921	0.848
Ease of Use	0.940	0.884
	0.925	0.856
	0.878	0.771
Travel Satisfaction	0.786	0.618
	0.933	0.870
	0.906	0.821
	0.928	0.861
Life Satisfaction	0.903	0.815
	0.917	0.841
	0.934	0.872

**Table 2. Validity and Reliability of Variables**

Constructs	Alpha	Mean	S. D
Traveler's Involvement	0.907	29.84	5.183
Usefulness	0.936	17.28	4.119
Ease of Use	0.930	16.51	4.749
Travel Satisfaction	0.938	22.79	5.885
Life Satisfaction	0.947	17.66	3.924

our next step was to evaluate the Structural Model (Hair et al., 2016) to conclude the hypothesized relationship between variables.

To test the internal consistency of the variables in the component we calculated Alpha and C.R. Results show that C.R and Cronbach- $\alpha$  most values are high and both are more than 0.7 and the difference is also very less; see, [Tables 1 and 2](#). The model composed of variables Application types (Kakao Bus, Kakao Taxi, Kakao Navi), traveling involvement, perceived usefulness, perceived ease of use, travel satisfaction, and life satisfaction, to analyze reliability and validity CFA was performed with all constructs in [Table 1](#). All the indicators have significant factor loadings between 0.7 ~ 0.9 while the significant correlation between constructs was above the required value; in [Tables 3 and 4](#), results are supported by previous research (Fornell & Larcker, 1981a), results

**Table 3. Acceptable Fit Values**

Fit Indices	The goodness of Fit Values
CNIM/DF	3.853
CFI	0.957
TLI	0.945
AGFI	0.835
GFI	0.885
NFI	0.943
RMSEA	0.085

\*Results obtained are supported by research (Fornell & Larcker, 1981a)

**Table 4. Pearson Correlation**

Scale	Involvement	Usefulness	Ease of use	Travel Satisfaction	Life Satisfaction
Involvement	-				
Usefulness	0.565***	-			
Ease of Use	0.586	0.903**	-		
Travel Satisfaction	0.704	0.681	0.789***	-	
Life Satisfaction	0.749	0.497	0.635	0.860***	-

\*\* Significance level 0.01

conclude convergent validity exists. Overseas residents were generally satisfied with their life in South Korea.

Confirmatory Factor Analysis While Model acceptable fit values were reported in [Table 3](#).

Correlation analysis was used to find out Relationship of study variables (see, [Table 4](#)) correlation is significant at 0.01 level (Shah & Attiq, 2016).

#### 4.2. Results for H1, H2, H3, H4, H5, H6, and H7

After confirming validity and reliability of constructs we evaluated the structural model, in support of hypotheses for Public transportation application types, firstly we investigated the influence of transportation application type A (Kakao Bus), Type B (Kakao Taxi) and Type C (Kakao Navi) on Perceived usefulness and perceived ease of use, as [Table 4a](#), shows, results confirmed a significant positive influence of Type A (Kakao Bus) application on Perceived Usefulness ( $\beta = 0.202$ , S. E = 0.073, T = 2.785, \*\*P < 0.01), In [Table 4b](#), Type-B (Kakao Taxi) impact on Perceived Usefulness ( $\beta = -0.058$ , S. D = 0.079, T = -0.738, P = 0.460) relation is not seen statistically significant, [Table 4b](#) represents results obtained from Type-B. In [Table 4c](#), Type-C (Kakao Navi) confirmed a significant positive influence on Perceived Usefulness ( $\beta = -0.307$ , S. E = 0.102, T = -3.026, \*\*\*P < 0.001). Type A and Type C support H1, while Type B does not support H1. Most of the results get support from the study conducted by the author, Tom Dieck and Jung (2018).

In support of H2 for Type-A (Kakao Bus) application impact on Perceived Ease of Use is not statistically significant ( $\beta = -0.114$ , S. E = 0.158, T = -0.720, P = 0.471), in case of Type-B (Kakao Taxi) impact on Perceived Easy to use ( $\beta = 0.271$ , S. D = 0.170, T = 1.594, P = 0.111) is not seen statistically significant, and similarly for Type C (Kakao Navi) application impact on Perceived ease of use ( $\beta = 0.221$ , S. E = 0.221, T = -0.996, P = 0.319) is not seen statistically significant. We can conclude that, Type-A, Type-B, Type-C does not support H2. In other words, we can say that in all cases Overseas Residents does not perceive Transportation Application Easy to Use.

To generalize the effect of perceived ease of use on perceived usefulness results obtained the support of H3 for type-A (Kakao Bus) perceived easy to use impact on perceived usefulness is significant ( $\beta = 0.736$ , S. E = 0.023, T = 32.052, \*\*\*P < 0.001) results strongly supports this relation. In the case of Type-B (Kakao Taxi) perceived easy to use impact on perceived usefulness is significant. Perceived easy to use is the strongest predictor of perceived usefulness result ( $\beta = 0.735$ , S. D = 0.023, T = 31.646, \*\*\*P < 0.001). For Type C (Kakao Navi) perceived ease of use impact on perceived usefulness is also significant ( $\beta = 0.730$ , S. E = 0.023, T = 31.837, \*\*\*P < 0.001). In all three cases we can say that overseas residents feel that perceived ease of use plays an important role to support perceived usefulness, H3 accepted. If an application will be easy to use, then it will be more useful for the individuals, results are highly supported by previous research (Shah & Attiq, 2016).

**Table 5. Model 1: Structural Parameter Estimates and Good-Of-Fit Indices for Total Sample (For Transportation Application Type A, Kakao Bus)**

Hypothesized Path	$\beta$	S. E	B	T	P	Hypothesis
<i>Kakao Bus</i> → <i>Usefulness</i>	0.202	0.073	0.074	2.785	0.005	H1 Supported
<i>Kakao Bus</i> → <i>Ease of use</i>	-0.114	0.158	-0.036	-0.720	0.471	H2 Not Supported
<i>Ease of Use</i> → <i>Usefulness</i>	0.736	0.023	0.848	32.052	***	H3 Supported
<i>Usefulness</i> → <i>Travel Satisfaction</i>	0.034	0.067	0.032	0.516	0.606	H4 Not supported
<i>Ease of use</i> → <i>Travel Satisfaction</i>	0.669	0.058	0.720	11.551	***	H5 Supported
<i>Travel Satisfaction</i> → <i>Life Satisfaction</i>	0.703	0.027	0.792	26.269	***	H6 Supported
<i>Kakao Bus</i> → <i>Life Satisfaction</i>	-0.232	0.079	-0.089	-2.947	0.003	H7 Supported

Fit statistics (N = 400)  $\chi^2/d.f = 3.137$  GFI = 0.991 TLI = 0.983 CFI = 0.995 RMSEA = 0.073

To explore the relation of perceived usefulness on travel satisfaction results obtained are not in support of H4. In the case of Type-A (Kakao Bus) application, perceived usefulness impact on travel satisfaction is not statistically significant ( $\beta = 0.034$ , S. E = 0.067,  $T = 0.516$ ,  $P = 0.606$ ) relation does not get support from results obtained. In case of Type-B (Kakao Taxi) application, perceived usefulness impact on travel satisfaction is not statistically significant ( $\beta = 0.034$ , S. D = 0.067,  $T = 0.516$ ,  $P = 0.606$ ) similarly for Type-C (Kakao Navi) application, perceived usefulness impact on travel satisfaction ( $\beta = 0.034$ , S. D = 0.067,  $T = 0.516$ ,  $P = 0.606$ ) is not statistically significant. In all three cases, the relation of perceived usefulness with travel satisfaction is not significant, so we reject H4.

Furthermore, to explore the relation of perceived ease of use on travel satisfaction results obtained are in support of H5. In the case of Type-A (Kakao Bus) application, perceived ease of use impact on travel satisfaction is statistically significant ( $\beta = 0.669$ , S. D = 0.058,  $T = 11.551$ ,  $***P < 0.001$ ), relation get support from results obtained. For Type-B (Kakao Taxi) application, perceived ease of use impact on travel satisfaction is statistically significant ( $\beta = 0.669$ , S. D = 0.058,  $T = 11.551$ ,  $***P < 0.001$ ) so we accept this relation. In the case of Type-C (Kakao Navi) application, perceived ease of use impact on travel satisfaction ( $\beta = 0.669$ , S. D = 0.058,  $T = 11.551$ ,  $P = ***P < 0.001$ ) is statistically significant. In all three cases, the relation of perceived ease of use with travel satisfaction is statistically significant, so we accept H5. In other words, we can say that overseas foreigners perceive that perceived ease of use plays an important role in creating travel satisfaction.

Travel satisfaction also has an expected significant effect on life satisfaction (Jun et al., 2012) and significant effect is obtained in support of H6. For Type-A (Kakao Bus) application, travel satisfaction impact on life satisfaction is statistically significant ( $\beta = 0.703$ , S. D = 0.027,  $T = 26.269$ ,  $P = ***P < 0.001$ ). For Type-B (Kakao Taxi) application, travel satisfaction impact on life satisfaction is statistically significant ( $\beta = 0.705$ , S. D = 0.027,  $T = 26.062$ ,  $P = ***P < 0.001$ ). Similarly, Type-C (Kakao Navi) application, travel satisfaction impact on life satisfaction is statistically significant ( $\beta = 0.707$ , S. D = 0.026,  $T = 26.675$ ,  $P = ***P < 0.001$ ). We can say that in all three cases travel satisfaction strongly influence life satisfaction, so for overseas residents' travel satisfaction takes much importance to getting satisfied with life, so we accept H6. Travel satisfaction is the strongest predictor of life satisfaction, results get support from research (Bergstad et al., 2011).

The study also examined the direct effect of transportation application on life satisfaction and results obtained that in the case of Type-A, Kakao Bus application direct impact on life satisfaction is statistically significant ( $\beta = -0.232$ , S. D = 0.079,  $T = -2.947$ ,  $**P = 0.003 < 0.01$ ). For Type-B, Kakao Taxi application direct impact on life satisfaction is not statistically significant ( $\beta = 0.040$ , S. D = 0.086,  $T = 0.466$ ,  $P = 0.641$ ). Similarly, Type-C, Kakao Navi application's impact on life satisfaction is statistically significant ( $\beta = 0.448$ , S. E = 0.109,  $T = 0.448$ ,  $***P < 0.001$ ).

Type A (Kakao Bus) and Type-C (Kakao Navi) also have a direct impact on life satisfaction, but for Type-C (Kakao Navi) there is no direct impact on life satisfaction. Results partially support H7.

#### **4.3. Results for H8 and H9**

The results show that the main effects of Kakao Bus, Kakao Taxi and Kakao Navi were significant (see, Tables 5, 6 and 7). Similarly, to explore the regulatory role of travelers' involvement in perceived usefulness and perceived ease of use, this study conducted a regression analysis in AMOS. Moreover, the interaction effect between traveler's involvement and Kakao Bus application on perceived usefulness and ease of use was not significant, the regulation of traveler's involvement does not play moderation role for Kakao Bus application users; meaning that travelers involvement had a significant effect on usefulness and ease of use in case of Kakao Taxi and Kakao Navi application users but not for Kakao Bus application users. So, we partially accepted H8 and H9 (see, Tables 8, 9 and 10).

**Table 6. Model. 2: Structural Parameter Estimates and Good-Of-Fit Indices for Total Sample (For Transportation Application Type B, Kakao Taxi)**

Hypothesized Path	$\beta$	S. E	B	T	P	Hypothesis
<i>Kakao Taxi</i> → <i>Usefulness</i>	-0.058	0.079	-0.020	-0.738	0.460	H1 Not Supported
<i>Kakao Taxi</i> → <i>Ease of Use</i>	0.271	0.170	0.080	1.594	0.111	H2 Not Supported
<i>Ease of Use</i> → <i>Usefulness</i>	0.735	0.023	0.847	31.646	***	H3 Supported
<i>Usefulness</i> → <i>Travel Satisfaction</i>	0.034	0.067	0.032	0.516	0.606	H4 Not supported
<i>Ease of use</i> → <i>Travel Satisfaction</i>	0.669	0.058	0.720	11.551	***	H5 Supported
<i>Travel Satisfaction</i> → <i>Life Satisfaction</i>	0.705	0.027	0.794	26.062	***	H6 Supported
<i>Kakao Taxi</i> → <i>Life Satisfaction</i>	0.040	0.086	0.014	0.466	0.641	H7 Not Supported

Fit statistics (N = 400)  $\chi^2/d.f.$  = 3.729 GFI = 0.898 TLI = 0.978 CFI = 0.993 RMSEA = 0.083

**Table 7. Model 3: Structural Parameter Estimates and Good-Of-Fit Indices for Total Sample (For Transportation Application Type C, Kakao Navi)**

Hypothesized Path	$\beta$	S. E	B	T	P	Hypothesis
<i>Kakao Navi</i> → <i>Usefulness</i>	-0.307	0.102	-0.080	-3.026	0.002	H1 Supported
<i>Kakao Navi</i> → <i>Ease of use</i>	0.221	0.221	-0.050	-0.996	0.319	H2 Not Supported
<i>Ease of Use</i> → <i>Usefulness</i>	0.730	0.023	0.842	31.837	***	H3 Supported
<i>Usefulness</i> → <i>Travel Satisfaction</i>	0.034	0.067	0.032	0.516	0.606	H4 Not supported
<i>Ease of use</i> → <i>Travel Satisfaction</i>	0.669	0.058	0.720	11.551	***	H5 Supported
<i>Travel Satisfaction</i> → <i>Life Satisfaction</i>	0.707	0.026	0.798	26.675	***	H6 Supported
<i>Kakao Navi</i> → <i>Life Satisfaction</i>	0.448	0.109	0.123	4.107	***	H7 Supported

Fit statistics (N = 400)  $\chi^2/d.f.$  = 3.041 GFI = 0.991 TLI = 0.984 CFI = 0.995 RMSEA = 0.072.

Note 1: Path = relationship between independent on dependent variable;  $\beta$  = unstandardized regression coefficient; B = standardized; S. E = standard error; P = level of significance \*\*\*p < 0.001 \*\*p < 0.01 \*p < 0.05.

Note 2: The combined results of Model 1, Model 2, and Model 3 show results for H1~ H7.

**Table 8. Model 4. Travelers Involvement Relationship with Usefulness and Easy to Use (For Transportation Application Type A, Kakao Bus)**

Hypothesized Path	$\beta$	S. E	B	T	P	Results
Traveler's Involvement → Usefulness	0.668	0.092	0.504	7.234	***	Accepted Accepted
Traveler's Involvement → Ease of Use	0.843	0.106	0.552	7.961	***	
Kakao Bus*Traveler's Involvement → Usefulness	-0.003	0.118	-0.006	-0.021	0.983	H8 Rejected
Kakao Bus*Traveler's Involvement → Ease of Use	-0.105	0.136	-0.202	-0.776	0.438	H9 Rejected

Note: dependent variable: perceived usefulness and perceived ease of use  
 \*means  $P < 0.10$  \*\*means  $P < 0.05$  \*\*\*means  $P < 0.001$

**Table 9. Model 5. Travelers Involvement Relationship with Usefulness and Easy to Use (For Transportation Application Type B, Kakao Taxi)**

Hypothesized Path	$\beta$	S. E	B	T	P	Results
Traveler's Involvement → Usefulness	0.693	0.058	0.523	11.996	***	Accepted Accepted
Traveler's Involvement → Ease of Use	0.798	0.067	0.523	11.967	***	
Kakao Bus*Traveler's Involvement → Usefulness	-0.111	0.027	-0.184	11.996	***	H8 Accepted
Kakao Bus*Traveler's Involvement → Ease of Use	-0.066	0.032	-0.095	-2.090	0.037	H9 Accepted

Note: dependent variable: perceived usefulness and perceived ease of use  
 \*means  $P < 0.10$  \*\*means  $P < 0.05$  \*\*\*means  $P < 0.001$

Interaction between travelers' involvement and Kakao Taxi and Kakao Navi on perceived usefulness and perceived ease of use was significant. The regulation of traveler's involvement plays a moderation role for Kakao Taxi and Kakao Navi application users.

### 5. Conclusion

This study was successful in several respects. The new concept of mobile application acceptance behavior was found to have strong results and built significant relationships with satisfaction (Alqahtani & Mohammad, 2015). Our study demonstrates that everyday travel application usage and acceptance affects life satisfaction. The moderation effect of involvement only exists in the Kakao Taxi, Kakao Navi, perceived usefulness and perceived ease of use relationship. Additionally, the moderation effect of involvement does not exist in the Kakao Bus, perceived usefulness and perceived ease of use relationship. In other words, more involvement the more likely that perceived usefulness and perceived ease of use will lead to greater travel satisfaction and life satisfaction; the result gets support from previous research (Chen & Tsai, 2008) the previous study examined personal involvement moderating positive



**Table 10. Model 6. Travelers Involvement Relationship with Usefulness and Easy to Use (For Transportation Application Type C, Kakao Navi)**

Hypothesized Path	$\beta$	S. E	B	T	P	Results
Traveler's Involvement → Usefulness	0.631	0.059	0.477	10.686	***	Accepted Accepted
Traveler's Involvement → Ease of Use	0.735	0.068	0.481	10.759	***	
Kakao Bus*Traveler's Involvement → Usefulness	0.592	0.195	0.984	3.031	0.002	H8 Accepted
Kakao Bus*Traveler's Involvement → Ease of Use	0.719	0.226	1.037	3.185	0.001	H9 Accepted

Note 1: dependent variable: perceived usefulness and perceived ease of use

\*means  $P < 0.10$  \*\*means  $P < 0.05$  \*\*\*means  $P < 0.001$

Note 2: The combined results of Model 4, Model 5, and Model 6 show results for H8 and H9.

effect on the online shopping behavior of consumers while ignored the relation of involvement with travel satisfaction to examine overseas resident's life satisfaction. The findings provide amazing insights into life satisfaction behavior through travel satisfaction obtained from acceptance from mobile transportation application usefulness and easy to use functionality (Bienstock & Royne, 2010). As Kakao Bus and Kakao Navi application users perceive it useful but not easy to use, while easy to use have a direct positive impact in creating travel satisfaction and life satisfaction, usefulness will not influence travel satisfaction until the application will not be easy to use so it is necessary to improve application easy to use the functionality to provide life satisfaction. The question then is how technology acceptance can influence travel satisfaction? It is necessary to focus on perceived easy to use having a direct positive impact on perceived usefulness if users will not consider application easy to use they will not consider it useful, results are supported by previous research (Shah & Attiq, 2016). While users of Kakao Taxi application don't perceive it useful and easy to use, similar to Kakao Bus and Kakao Navi application usefulness will not influence travel satisfaction. We can say that full acceptance of the TAM model plays a major role in creating travel satisfaction to provide life satisfaction. For a human-centered society, it is important to focus on the worth of the TAM model that may have a direct positive effect on overseas residents' travel satisfaction and life satisfaction. The findings are highly relevant for transport planners and IT developers to develop and provide attractive and satisfactory mobile applications for overseas residents. Some factors (seat availability, attitude) during traveling previously investigated were not included in this study (Lunke, 2020; O. Smith, 2017) investigated travel satisfaction but ignored the overseas travel satisfaction and life satisfaction. Instead, more focus is on mobile-based travel application acceptance behavior that is more important for travel application developers. As a result, overseas residents will be often willing to use mobile transportation applications which they will consider easy to use and useful during traveling from one location to another will be highly satisfied with their life in South Korea. This could be solved by providing transportation application demonstrations in different languages such as English or other major languages of overseas residents. If application developers will develop the application with these findings in mind it will result in more satisfied overseas life. As a result, travel satisfaction with the acceptance of travel applications will increase the overall life satisfaction of overseas residents of South Korea. Selected variables are stronger predictors of the overseas resident's life satisfaction in this modern arena. The findings documented can be used to propose a general life satisfaction of overseas residents.

## 6. Research implications

This investigation can not only add knowledge to the area of Technology adoption benefits for residents and organizations but also provide important information for overseas regarding what factors they should consider managing their life satisfaction in South Korea. Its result will be very useful for the IT Developers, technology experts, and developers of mobile Applications that are researching the technology adoption behavior and impact on the community.

The population growth rate is decreasing; to increase population some countries attract foreigners as residents because they may be an alternate solution to this problem. The population of the country plays a major role in the development and boost services and manufacturing industries. Without life satisfaction overseas cannot be attracted to stay longer in the country. Future research is needed to address how other variables relate to overseas life satisfaction. Technology adoption situations and intentions have received less attention in life satisfaction theory. As this research was conducted in South Korea, to generalize more results more research is needed by including other geographical areas to understand the relation of overseas life satisfaction with AR technology adoption behavior.

### Funding

The authors received no direct funding for this research.

### Author details

Nargis Dewan<sup>1</sup>

E-mail: [raowafa9@gmail.com](mailto:raowafa9@gmail.com)

Md Billal Hossain<sup>2</sup>

E-mail: [shohan\\_bd13@yahoo.com](mailto:shohan_bd13@yahoo.com)

ORCID ID: <http://orcid.org/0000-0003-0118-7076>

Gwi-Gon Kim<sup>3</sup>

Anna Dunay<sup>4</sup>

ORCID ID: <http://orcid.org/0000-0003-0254-9243>

Csaba Bálint Illés<sup>4</sup>

ORCID ID: <http://orcid.org/0000-0001-9546-2897>

<sup>1</sup> Doctoral School of Business Administration, Kumoh National Institute of Technology, Gumi, South Korea.

<sup>2</sup> Doctoral School of Economic and Regional Sciences, Hungarian University of Agriculture and Life Sciences, Godollo, Hungary.

<sup>3</sup> Department of Business Administration, Kumoh National Institute of Technology, Gumi, South Korea.

<sup>4</sup> Institute of Economic Sciences, Hungarian University of Agriculture and Life Sciences, Godollo, Hungary.

### Disclosure statement

No potential conflict of interest was reported by the author(s).

### Citation information

Cite this article as: Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator, Nargis Dewan, Md Billal Hossain, Gwi-Gon Kim, Anna Dunay & Csaba Bálint Illés, *Cogent Business & Management* (2022), 9: 2096998.

### References

Adams, D. A., Nelson, R. R., & Todd, P. A. (1992).

Perceived usefulness, ease of use, and usage of information technology: A replication. *MIS quarterly*, 16(2), 227–247 <https://www.jstor.org/stable/249577?seq=1>

Ahn, Y. J., Kim, I., & Lee, T. J. (2016). Exploring visitor brand citizenship behavior: the case of the 'MICE city Busan', South Korea. *Journal of Destination Marketing & Management*, 5(3), 249–259. <https://doi.org/10.1016/j.jdmm.2016.01.002>

Alqahtani, M., & Mohammad, H. (2015). Mobile applications' impact on student performance and satisfaction. *Turkish Online Journal of Educational*

*Technology-TOJET*, 14(4), 102–112. <https://eric.ed.gov/?id=EJ1077662>

Anderson, O. (2020). Transplant Tourism: New Zealand Residents Deciding on Commercial Transplantation Overseas. Open Access Te Herenga Waka-Victoria University of Wellington. Thesis. <https://doi.org/10.26686/wgtn.17144669.v1>

Baharuddin, R., Singh, D., & Razali, R. (2013). Usability dimensions for mobile applications—a review. *Res. J. Appl. Sci. Eng. Technol*, 5(6), 2225–2231. <https://doi.org/10.19026/rjaset.5.4776>

Banâtre, M., Couderc, P., Pauty, J., & Becus, M. (2004, September). Ubibus: Ubiquitous computing to help blind people in public transport. In *International conference on mobile human-computer interaction* (pp. 310–314). Springer, Berlin, Heidelberg.

Bearden, W. O., Netemeyer, R. G., Bearden, W. O., & Netemeyer. 1999. Involvement, information processing, and price perceptions. *Handbook of marketing scales: multi-item measures for marketing and consumer behaviour research*, 2nd, 173–209. SAGE.

Bergstad, C. J., Gamble, A., Gärling, T., Hagman, O., Polk, M., Ettema, D., & Olsson, L. E. (2011). Subjective well-being related to satisfaction with daily travel. *Transportation*, 38(1), 1–15. <https://doi.org/10.1007/s11116-010-9283-z>

Bian, R., & Zhu, M. (2020). The relationship between ritual, personal involvement, and travel intention: a Study of Check-in-Travel on DouYin. *American Journal of Industrial and Business Management*, 10(2), 451. <https://doi.org/10.4236/ajbm.2020.102030>

Bienstock, C. C., & Royne, M. B. (2010). Technology acceptance and satisfaction with logistics services. *The International Journal of Logistics Management*, 21(2), 271–292. <https://doi.org/10.1108/09574091011071951>

Calisir, F., & Calisir, F. (2004). The relation of interface usability characteristics, perceived usefulness, and perceived ease of use to end-user satisfaction with enterprise resource planning (ERP) systems. *Computers in Human Behavior*, 20(4), 505–515. <https://doi.org/10.1016/j.chb.2003.10.004>

Chen, C. F., & Tsai, M. H. (2008). Perceived value, satisfaction, and loyalty of TV travel product shopping: involvement as a moderator. *Tourism Management*, 29(6), 1166–1171. <https://doi.org/10.1016/j.tourman.2008.02.019>

Chen, C. F., & Chen, F. S. (2010). Experience quality, perceived value, satisfaction, and behavioral intentions

- for heritage tourists. *Tourism Management*, 31(1), 29–35. <https://doi.org/10.1016/j.tourman.2009.02.008>
- Chen, C. C., Petrick, J. F., & Shahvali, M. (2016). Tourism experiences as a stress reliever: examining the effects of tourism recovery experiences on life satisfaction. *Journal of Travel Research*, 55(2), 150–160. <https://doi.org/10.1177/0047287514546223>
- Chen, X., Liu, X., Yu, W., Tan, A., Fu, C., & Mao, Z. (2019). Association between cross-cultural social adaptation and overseas life satisfaction among Chinese medical aid team members (CMATMs) in Africa. *International Journal of Environmental Research and Public Health*, 16(9), 1572. <https://doi.org/10.3390/ijerph16091572>
- Choi, K., Meng, B., & Kim, S. B. (2020). The influence of cultural familiarity on Tanzanian millennials' perceptions of Korea: the mediating roles of involvement. *Asia Pacific Journal of Tourism Research*, 25(1), 64–75. <https://doi.org/10.1080/10941665.2018.1553200>
- D. W, M. (2006). The importance of ease of use, usefulness, and trust to online consumers: an examination of the technology acceptance model with older customers. *Journal of Organizational and End User Computing (JOEUC)*, 18(3), 47–65. <http://dx.doi.org/10.4018/joeuc.2006070103>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Dedeoğlu, B. B. (2019). Shaping tourists' destination quality perception and loyalty through destination country image: the importance of involvement and perceived value. *Tourism Management Perspectives*, 29, 105–117. <https://doi.org/10.1016/j.tmp.2018.11.006>
- Dittmann, J., & Goebel, J. (2010). Your house, your car, your education: the socio-economic situation of the neighborhood and its impact on life satisfaction in Germany. *Social Indicators Research*, 96(3), 497–513. <https://doi.org/10.1007/s11205-009-9489-7>
- Fornell, C., & Larcker, D. F. (1981a). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Foth, M., & Schroeter, R. (2010, October). Enhancing the experience of public transport users with urban screens and mobile applications. In *Proceedings of the 14th international academic mindtrek conference: envisioning future media environments* (pp. 33–40).
- Friman, M., Gärling, T., Ettema, D., & Olsson, L. E. (2017). How does travel affect emotional well-being and life satisfaction? *Transportation Research Part A: Policy and Practice*, 106, 170–180. <https://doi.org/10.1016/j.tra.2017.09.024>
- Friman, M., Westman, J., & Olsson, L. E. (2019). Children's life satisfaction and satisfaction with school travel. *Child Indicators Research*, 12(4), 1319–1332. <https://doi.org/10.1007/s12187-018-9584-x>
- Gefen, D., & Keil, M. (1998). The impact of developer responsiveness on perceptions of usefulness and ease of use: An extension of the technology acceptance model. *ACM SIGMIS DATABASE: The DATABASE for Advances in Information Systems*, 29(2), 35–49. <https://doi.org/10.1145/298752.298757>
- Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: an integrated model. *MIS Quarterly*, 27(1), 51–90. <https://doi.org/10.2307/30036519>
- George, D. (2011). *SPSS for windows step by step: A simple study guide and reference, 17.0 update, 10/e*. Pearson Education India.
- Hair, J. F., Jr, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- Harrison, R., Flood, D., & Duce, D. (2013). Usability of mobile applications: Literature review and rationale for a new usability model. *Journal of Interaction Science*, 1(1), 1. <https://doi.org/10.1186/2194-0827-1-1>
- Hussain, A., Mkpjojiogu, E. O., Jama Isse, A., & Mohammed, R. A. (2018, September). Grab mobile application: A usability evaluation. In *AIP conference proceedings* (Vol. 2016, No. 1, p. 020054). AIP Publishing LLC.
- Izawa, K. P., & Oka, K. (2020). Gender-related differences in sedentary behavior of Japanese living overseas in Malaysia. *Reviews on Recent Clinical Trials*, 15(3), 214–218. <https://doi.org/10.2174/1574887115666200524235754>
- Joo, Y. J., Lim, K. Y., & Kim, E. K. (2011). Online university students' satisfaction and persistence: examining perceived level of presence, usefulness, and ease of use as predictors in a structural model. *Computers & Education*, 57(2), 1654–1664. <https://doi.org/10.1016/j.compedu.2011.02.008>
- Josiam, B. M., Smeaton, G., & Clements, C. J. (1999). Involvement: travel motivation and destination selection. *Journal of Vacation Marketing*, 5(2), 167–175. <https://doi.org/10.1177/135676679900500205>
- Jun, S. H., Hartwell, H. J., & Buhalis, D. (2012). Impacts of the internet on travel satisfaction and overall life satisfaction. In M. Uysal, R. Perdue, M. Sirgy (Eds.), *Handbook of tourism and quality-of-life research* (pp. 321–337). International Handbooks of Quality-of-Life. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-2288-0\\_19](https://doi.org/10.1007/978-94-007-2288-0_19)
- Kang, S., Kim, J., Hong, S. H., & Ko, D. W. (2020). Determinants of the intention to recommend overseas migration to a city: the perspective of foreign residents. *The Social Science Journal*, 1–12. <https://doi.org/10.1080/03623319.2020.1728511>
- Korbel, P., Skulimowski, P., Wasilewski, P., & Wawrzyniak, P. (2013, September). Mobile applications aiding the visually impaired in traveling with public transport. In *2013 federated conference on computer science and information systems* (pp. 825–828). IEEE.
- Köttl, H., Fallahpour, M., Hedman, A., Nygård, L., & Kottorp, A. (2020). Depression, everyday technology use and life satisfaction in older adults with cognitive impairments: A cross-sectional exploratory study. *Scandinavian Journal of Caring Sciences*, 35(1), 233–243. <https://doi.org/10.1111/scs.12838>
- Lee, Y., & Lee, J. Y. (2016). A Study on the Usability Evaluation of the Mobile Application for Seoul Public Transportation Information. *Journal of the Korean Society for Information Management*, 33(4), 225–244. <https://doi.org/10.3743/KOSIM.2016.33.4.225>
- Leue, M., Tom-Dieck, D., & Jung, T. H. (2014). A theoretical model of augmented reality acceptance. *E-review of Tourism Research*, 5. <https://e-space.mmu.ac.uk/id/eprint/608490>
- Li, Y. M. (2014). Effects of story marketing and travel involvement on tourist behavioral intention in the tourism industry. *Sustainability*, 6(12), 9387–9397. <https://doi.org/10.3390/su6129387>

- Lunke, E. B. (2020). Commuters' satisfaction with public transport. *Journal of Transport & Health*, 16, 100842. <https://doi.org/10.1016/j.jth.2020.100842>
- McCarthy, S., & Habib, M. A. (2018). Investigation of life satisfaction, travel, built environment, and attitudes. *Journal of Transport & Health*, 11(December), 15–24. <https://doi.org/10.1016/j.jth.2018.09.007>
- Niemand, C. J., & Chauke, H. (2017). The use of mobile applications by public transport commuters in Gauteng, South Africa. *South African Journal of Information Management*, 19(1), 1–9.
- Poiesz, T. B. C., & Cees, J. P. (1995). Do we need involvement to understand consumer behavior? *Advances in Consumer Research*, 22, 448–452. <https://www.acrwebsite.org/volumes/7786/volumes/v22/NA-22/full>
- Ramayah, T., & Ignatius, J. (2005). Impact of perceived usefulness perceived ease of use and perceived enjoyment on the intention to shop online. *ICFAI Journal of Systems Management (IJSM)*, 3(3), 36–51. [http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.3102&rep=rep1&type=pdfhttps://d1wqtxts1xle7.cloudfront.net/31168946/impactpeu-with-cover-page-v2.pdf?Expires=1657402666&Signature=IX6WXzvaB1Tinqm-VsiVHu77IKLe1Qo6sbnq8XhFa6uEQxI2lopK0IFHM19DT0yGQw8uZgMEdBwpqGZZo288eUVq~gh05yHfSk4IRB4AmenC37T-6NR24J3YW2PSZeh3laM3SHdn-RZCOiFlNyp1-dE8LOirXKvrHsyKrsdU0HdfvJzmJYm9IT6KTIQGqat7wAmTzRqye1JbSrD593c5vIZm966FAO2qGnWjdCazmyDM58pLg8NWYkFYNAJB3340cL8fDqjF46Vw~of995kfNa-p1tEkDAXbc9mA6A1Ywfnmf3MpKigBlzcFdiLrwl~HOnd0-VXrgRPCXYSMw\\_&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.3102&rep=rep1&type=pdfhttps://d1wqtxts1xle7.cloudfront.net/31168946/impactpeu-with-cover-page-v2.pdf?Expires=1657402666&Signature=IX6WXzvaB1Tinqm-VsiVHu77IKLe1Qo6sbnq8XhFa6uEQxI2lopK0IFHM19DT0yGQw8uZgMEdBwpqGZZo288eUVq~gh05yHfSk4IRB4AmenC37T-6NR24J3YW2PSZeh3laM3SHdn-RZCOiFlNyp1-dE8LOirXKvrHsyKrsdU0HdfvJzmJYm9IT6KTIQGqat7wAmTzRqye1JbSrD593c5vIZm966FAO2qGnWjdCazmyDM58pLg8NWYkFYNAJB3340cL8fDqjF46Vw~of995kfNa-p1tEkDAXbc9mA6A1Ywfnmf3MpKigBlzcFdiLrwl~HOnd0-VXrgRPCXYSMw_&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA)
- Rosen, P., & Sherman, P. (2006). Hedonic information systems: Acceptance of social networking websites. *AMCIS 2006 proceedings*, 162.
- Sánchez, J., & Oyarzún, C. (2011). Mobile audio assistance in bus transportation for the blind. *International Journal on Disability and Human Development*, 10(4), 365–371. <https://doi.org/10.1515/IJDHD.2011.053>
- Schilit, B. N., Theimer, M. M., & Welch, B. B. (1993, August). Customizing mobile applications. In *Proceedings USENIX symposium on mobile & location-independent computing* (Vol. 9, pp. 20–25).
- Segars, A. H., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly*, 17(4), 517–525. <https://doi.org/10.2307/249590>
- Segars, A., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *Management Information Systems Quarterly*, 17(4), 7. <https://doi.org/10.2307/249590>
- Shah, H. J., & Attiq, S. (2016). Impact of technology quality, perceived ease of use and perceived usefulness in the formation of consumer's satisfaction in the context of e-learning. *Abasyn J. Soc. Sci*, 9(1), 124–140. <http://ajss.abasyn.edu.pk/article?paperID=152>
- Skurzak, A., Zarajczyk, M., Iwanowicz-Palus, G., Korzyńska-Piętas, M., Lewicka, M., & Wiktor, H. (2020). Life satisfaction of the pregnant women. *Pielęgniarstwo XXI wieku/Nursing in the 21st Century*, 18(4), 207–213. <https://doi.org/10.2478/pielxxiw-2019-0030>
- Smith, O. B. (2013). Peak of the day or the daily grind: Commuting and Subjective Well-Being. *Dissertations and Theses*, 1026. <https://doi.org/10.15760/etd.1026>
- Smith, O. (2017). Commute well-being differences by mode: evidence from Portland, Oregon, USA. *Journal of Transport & Health*, 4, 246–254. <https://doi.org/10.1016/j.jth.2016.08.005>
- Subramanian, G. H. (1994). A replication of perceived usefulness and perceived ease of use measurement. *Decision Sciences*, 25(5–6), 863–874. <https://doi.org/10.1111/j.1540-5915.1994.tb01873.x>
- Tom Dieck, M. C., & Jung, T. (2018). A theoretical model of mobile augmented reality acceptance in urban heritage tourism. *Current Issues in Tourism*, 21(2), 154–174. <https://doi.org/10.1080/13683500.2015.1070801>
- Tzamaloukas, A., & Farmwald, P. (2004). *U.S. Patent Application No. 10/272,039*. <https://patents.google.com/patent/US20040073361A1/en>
- Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695–704. <https://doi.org/10.2307/25148660>
- Voon, N. H., Kadir, S. N. Z. H. A., Belayan, M. A., Poon, S. H., & Zahran, E. S. M. M. (2016, November). Rides for rewards (R4R): A mobile application to sustain an incentive scheme for public bus transport. In *International conference on computational intelligence in information system* (pp. 60–71). Springer, Cham.
- Waygood, E. O. D., Friman, M., Taniguchi, A., & Olsson, L. E. (2019). Children's life satisfaction and travel satisfaction: evidence from Canada, Japan, and Sweden. *Travel Behavior and Society*, 16, 214–223. <https://doi.org/10.1016/j.tbs.2018.04.004>
- Wu, W., Ng, W. S., Krishnaswamy, S., & Sinha, A. (2012, July). To taxi or not to taxi?—enabling personalised and real-time transportation decisions for mobile users. In *2012 IEEE 13th international conference on mobile data management* (pp. 320–323). IEEE.
- Zaichkowsky, J. L. (1986). Conceptualizing involvement. *Journal of Advertising*, 15(2), 4–14. <https://doi.org/10.1080/00913367.1986.10672999>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



***Cogent Business & Management* (ISSN: 2331-1975) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at [www.CogentOA.com](http://www.CogentOA.com)**

