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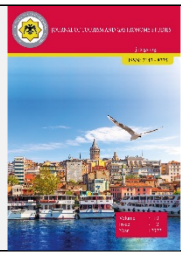

The Effect of Service Employees' Technology Readiness on Technology Acceptance

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Abstract

The goal of the present paper is to identify the effects of service employees' technology readiness on technology acceptance in TAV Airports Holding, Izmir Adnan Menderes Airport. In our study we combined the technology readiness index (TRI) and the Technology Acceptance Model (TAM) into one model. Specifically, we measured the relation between TRIs personality trait dimensions – optimism, innovativeness, discomfort, and insecurity – and the cognitive dimensions of TAM. Also, the demographics of the employees were examined to determine the effect of demographics on the technology readiness and technology acceptance level. TRI (Parasuraman & Colby, 2015) and TAM (Davis, 1989) were adapted to measure employees' propensity to embrace and use cutting-edge high technologies. The data were collected from 300 employees of a multi-site tourism service provider. Analysis revealed that personality traits had the expected impact on user perceptions. The results of the study showed that personal optimism and innovativeness (motivators) positively influenced perceived usefulness and perceived ease of use, but discomfort and insecurity (inhibitors) in a negative relationship with them. Surprisingly, while insecurity had no impact on perceived usefulness, discomfort had no impact on perceived ease of use.

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INTRODUCTION

Background and Issue

The use of new technologies is important due to improve efficiency and effectiveness and almost every sectors use technology (Liljander et al., 2006, p.177; Partala & Saari, 2015, p. 381; Stock & Grob, 2016, p. 2166; Acar & Gürol, 2018, p. 59; Cibaroğlu & Turan, 2018, p. 204; Haidari et al., 2019, p. 229). Significant numbers of research have examined user acceptance and experience with new technologies across service sectors (e.g., online and offline shops, airlines, hotels, and restaurants). The service sector has been a frontrunner in embracing new innovations to transform customer experience (Lu, Cai, & Gursoy, 2019, p. 37). Recent attempts have examined technology-infused service experience via the use of mobile apps such as Apple pay (e.g., Liu & Mattila, 2018), Google Glass (e.g., Wu, Fan, & Mattila, 2015), iPad (Shen, Zhang, & Krishna, 2016), keyless entry (Liu & Mattila, 2016), and virtual reality technology (Tussyadiah et al., 2018).

New technologies are found useful in improving service efficiency, consumer self-efficacy, satisfaction, and prompt technology-empowered frontline interactions (Cobos et al., 2016; Marinova, de Ruyter, Huang, Meuter, & Challagalla, 2017). The personality trait of technology readiness (TR) is also found to influence travelers' satisfaction with self-service airline services (Wang, So & Sparks, 2017). However, since the dimensionality of TR and its effect on technology acceptance especially in the service sector is still not clear in the literature.

People have two different views including favorable and unfavorable about technology based products and services (Bakırtaş & Akkaş, 2020, p. 1044). In understanding users' adoption of technology either in the context of work or home, users' technology readiness, plays an important role from a user's perspective (Chang & Kannan, 2006). Parasuraman (2000, p. 308) defined TR as ''people's propensity to embrace and use new technologies for accomplishing goals in home life and at work". Parasuraman & Colby (2015, p. 59) reported that since then, technology has revolutionized service delivery in virtually every service category. The impact of these technologies in the service domain is evident. Additionally, they indicated that technology-triggered transformation in services is likely to accelerate in the future because current technologies are increasing rapidly in speed, capacity, connectivity, functionality, and ease of use, while potentially groundbreaking innovations are still nascent (Parasuraman & Colby, 2015, p. 59).

According to Parasuraman (2000), TR is a trait-like individual difference variable that captures people's general attitude toward accepting new technologies. It is a frequent psychographic variable for service industry managers in contexts where technology-based innovation is key (Bulut & Wang, 2020). Going forward, as technology revolutionizes services, managers must cope with more complex challenges associated with delivering innovative service experiences, while ensuring that customers are receptive to those experiences, and potential adverse effects on employees are minimal (Parasuraman & Colby, 2015, p. 60). Likewise, employees, especially customer-facing employees, must feel confident and comfortable with new technology-based service options; otherwise, their morale and productivity may decline (Parasuraman & Colby, 2015, p. 60). Thus, understanding employees' reactions to cutting-edge technologies are critical. Regarding this, the present study contributes not only theoretical tenets to the existing literature, but also advises several practical implications for tourism service businesses' managers to develop service employees' readiness for technology.

The paper begins by describing the Technology acceptance model (TAM) and Technology Readiness Index (TRI). It then describes the research model and the method used in this study, which involves a survey with a quantitative method. The results are analyzed using the SPSS Statistics 23. After all, conclusions and implications are presented.

The Purpose of This Study

The purpose of this study is to explore the effect of TR of service employees on technology acceptance. For this purpose, the TRI (Parasuraman & Colby, 2015) and the Technology Acceptance Model (TAM) scale (Davis, 1989) were applied to the employees of TAV Airports Holding operating at Izmir Adnan Menderes Airport and a survey was conducted with the relevant employees in order to collect data. Today, when digitalization aims to create a life based on information and technology, it is important for organizations to adapt to digital transformation, which makes information and technology more effective and active in their business processes. Since as much of the work of service employees are supported by Information Technologies (IT), the readiness of employees for digital transformation and usage of technology affects service quality depending on how technology is used. Technology acceptance of employees may also depend on their personality. The main research question examined in the study is: “Does the technology readiness of service workers affect technology acceptance? The paper is mainly hypothesized "There is a positive relationship between the technology readiness of service workers and their level of acceptance of technology".

Originality/value of this study

Few studies have investigated the relationship between technology readiness and technology acceptance of service employees in the tourism sector using the combined model of the TRI and TAM. This model enables to identify the relation between TRIs personality trait dimensions and the cognitive dimensions of TAM.

This research thus contributes to the production of information about digital transformation in the field of tourism with its unique aspect in terms of revealing how the personal characteristics of service employees affect the perceived ease of use and perceived usefulness of technology. The study has a unique value in presenting suggestions to business managers about the importance of personal characteristics reflecting the technology readiness of their employees on the acceptance of technology and also its effect on service quality. In this research, we also suggest a new conceptual model, which is called the Technology Internalization Process model by emphasizing our research implications for addressing how managers can increase service employees’ readiness of technology (Shown in Figure 1). The suggested model offers insight into how to effectively manage the technology readiness and adoption process in tourism businesses.

Literature review

Technology acceptance model (TAM)

In the technology acceptance/adoption literature, a string of theories is explored to predict user acceptance/adoption of new technologies, such as the Theory of Reasoned Action, Technology Acceptance Model, Consumer Acceptance of Technology, the Unified Theory of Acceptance and Use of Technology and its extended model (see Venkatesh et al., 2003; Venkatesh, Thong, & Xu, 2012), and more.

Davis (1986) introduced the TAM to account for the attitudinal factors that are postulated to affect computer acceptance. TAM is based upon the theory of reasoned action (TRA) (Ajzen, 1987; Ajzen & Fishbein, 1977; Fishbein & Ajzen, 1975). TRA posits that behavioral intention is a measure of one's intention to perform a specified behavior and represents the primary predictor of actual behavior. Behavioral intention is itself predicted by an attitudinal component which represents an individual's feelings about performing the behavior (Fishbein & Ajzen, 1975). This pathway was incorporated into TAM, which postulates that computer-related attitudes influence behavioral intention to use computers (and subsequently usage) (Brosnan, 1999, p. 106). Davis (1989) included perceived usefulness (PU) and perceived ease of use (PEU) as the two beliefs that determine the attitude towards using IT. Davis concluded that the relationship between PU and user acceptance was stronger than that of PEU and user acceptance.

Later research has added context-specific variables such as cognitive absorption, previous experience, and social norms to augment the original framework to increase the predictive power (Morgan-Thomas & Veloutsou, 2013; Venkatesh & Davis, 2000). Technology acceptance has been initially tested in organizational contexts to solicit employees' attitudes towards using new technologies at work. Later, Kulviwat, Bruner II, Kumar, Nasco and Clark (2007) enhanced the Consumer Acceptance of Technology framework by including affect and hedonic motivations (e.g., pleasure, arousal, and dominance). Venkatesh et al. (2003; 2012) further refine the theoretical basis of user adoption of technology and develop a comprehensive framework, Unified Theory of Acceptance and Use of Technology, for both organizational and consumer contexts. In this research, technology acceptance has been tested in organizational contexts to encourage service employees 'attitudes towards using cutting-edge technologies at work.

Perceived usefulness is defined here as "the degree to which a person believes that using a specific application system/ technology will enhance his or her task performance" (Davis, 1989, p. 320) according to the original TAM. The higher the perceived usefulness, the higher the technology acceptance and technology adoption. This means that the perceived usefulness is high as long as the use of technology is expected to result in a clear increase in employee productivity or make their job easy and increase their job effectiveness (Davis, 1989; Chang & Kannan, 2006).

Perceived ease of use is defined as "the degree to which a person believes the using a specific application system/ technology will be free from effort". The definition of "ease" is "freedom from difficulty or great effort" (Davis, 1989, p. 320). Perceived ease of use is a catalyst to increasing the likelihood of user acceptance user (Chang & Kannan, 2006, p.2).

Technology readiness index (TRI)

TR refers to the propensity of an individual to adopt and embrace cutting-edge technology at home and work (https://rockresearch.com/technology-readiness-index-primer/). Research on antecedents of TR is limited (Parasuraman & Colby 2015). Rogers (1995, 2003) suggested that there are differences in peoples' attitudes towards using technology. He split people into five groups describing their character; ranging from innovators to laggards. Research by Parasuraman (2000) argued that the relative dominance of positive and negative feelings about technology would vary across people and cause corresponding variations in people's propensity to embrace and employ new technologies. Other studies (e.g., Davis, Bagozzi, & Warshaw, 1989) have also identified specific consumer beliefs and motivations that may enhance (e.g., perceived ease of use, fun) or reduce (e.g., perceived risk) new technology adoption.

Simultaneously with and after the TRI's development, other scientists have examined the advantages and disadvantages of new technology-based systems and their implications for fostering consumer acceptance. For instance, Hoffman, Novak, and Peralta (1999) discussed the necessity and strategies to increase consumer trust in e-commerce, which was still immature and therefore cutting-edge technology at that time. Bitner (2001) elaborated on the challenges of technology-based service systems to consumer and employee acceptance, referring to the technology paradoxes uncovered by Mick and Fournier (1998).

Previous research has mainly focused on two categories of factors that may impact or relate to TR: demographics (e.g., Dutot, 2014; Gilly, Celsi & Schau, 2012) and past experience (e.g., Maiser, 2016). Because TR is considered a stable, individual level, trait-like characteristic, it is often included as an endogenous factor in technology acceptance studies (Blut & Wang, 2020). However, previous TR research has rarely examined moderators such as generational differences (Hur, Lee & Choo, 2017), prior Web experience (Massey et al., 2013), customer–technology interaction (Theotokis, Vlachos, & Pramatari, 2008), contextual moderators characterizing the technology, firm, and country context (Blut & Wang, 2020). Further, previous TR research incorporates mediators for TR effects that are theoretically grounded in the TAM and QVS literatures (e.g., Blut & Wang, 2020). In this research, we include TR as an endogenous factor in the technology acceptance of service employees. Based on the literature review, the conceptual model, which explores the effect of TR of service employees on technology acceptance has shown in Figure 1.

According to Parasuraman (2000), TR represents a gestalt of mental motivators and inhibitors that collectively determine a person's propensity to use new technologies. TRI defines four groups of users on the basis of personality traits. The construct thus is multifaceted, including four dimensions (Parasuraman & Colby, 2015, p. 60):

- Optimism—a positive view of technology and a belief that it offers people increased control, flexibility, and efficiency in their lives.
- Innovativeness—a tendency to be a technology pioneer and thought leader.
- Discomfort—a perceived lack of control over technology and a feeling of being overwhelmed by it.
- Insecurity—distrust of technology, stemming from skepticism about its ability to work properly and concerns about its potential harmful consequences.

Of the four dimensions, optimism and innovativeness are ''motivators,'' contributing to TR, whereas discomfort and insecurity ''inhibitors,'' detracting from it. Moreover, the four dimensions are relatively distinct, meaning that an individual can possess different combinations of technology-related traits, sometimes leading to a paradoxical state that consists of strong motivations tempered by strong inhibitions (Parasuraman & Colby, 2015, pp. 60-61).

The dimensions are relatively independent of each other, especially the positive and negative dimensions. Thus, paradoxically, this can be an option for an individual to have both positive and negative beliefs about technology at the same time. An individual's level of technology readiness is ultimately determined by the balance of positive and negative beliefs, although the particular combinations across the four dimensions have implications for when and how one adopts an innovative product or service (Rockbridge Associates, Inc., 2022).

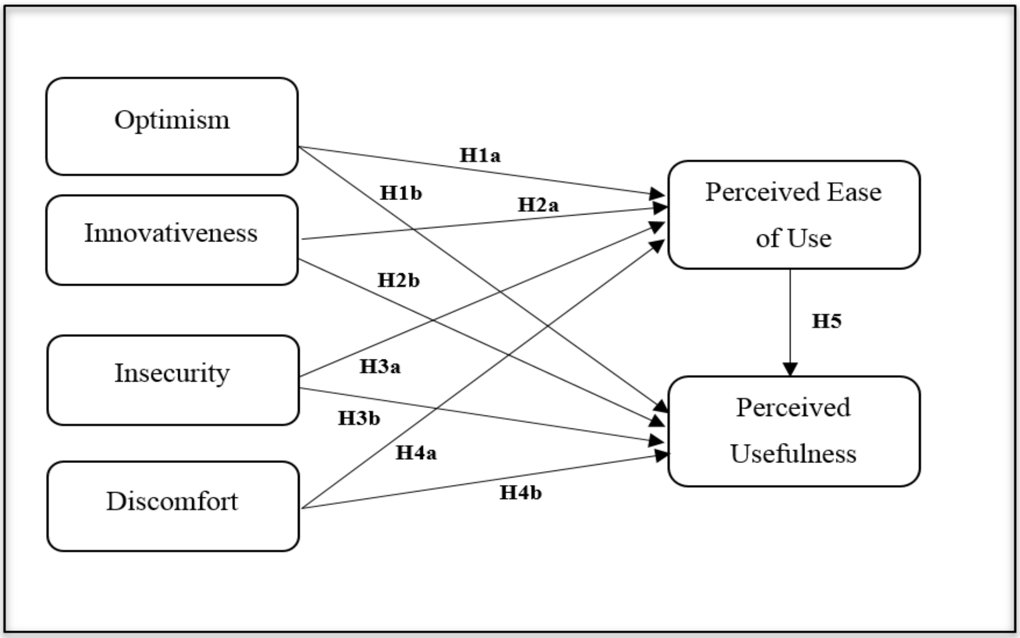
TR is measured with the TRI, a multi-item scale that has been extensively evaluated for reliability and validity. TRI consists of 16 belief statements, each with a fully anchored 5-point scale (strongly disagree=1 to strongly agree=

5). Of the 16 statements, 4 measures Optimism, 4 measures Innovativeness, 4 measures Discomfort, and 4 measures Insecurity. Thus, TRI provides dimension-specific as well as overall measures of TR.

TR is an individual-level characteristic that does not differ in the short term nor does it change suddenly in response to a stimulus. Higher TR levels are correlated with higher adoption rates of cutting-edge technology, more intense usage of technology, and greater perceived ease in doing so (e.g., Kuo 2011; Lin, & Chang 2011; Massey, Khatri, & Montoya-Weiss 2007).

The stronger a trait, the better the person fits into one of the groups and the more significantly he or she is influenced by the use of high-technology products and services. An analysis by Parasuraman and Colby (2001) identified five clusters based on these four dimensions. Tsikritsis (2004) replicated the research in the UK and found support for four of the five clusters (I. Rockbridge Associates, 2002). People with high TRI levels score high on optimism and innovativeness. They feel comfortable using technology and only call for little proof of its performance. People with lower levels are more critical, they ask for help more often and feel uncomfortable with new technologies (Walczuch, Lemmink, & Streukens, 2007, p. 207).

Figure 1. Conceptual model and hypotheses of the research



Methodology

Sample

The research was carried out by obtaining the necessary permissions from TAV Airports Holding, Izmir Adnan Menderes Airport and the Dokuz Eylul University Ethics Committee. The questionnaire was distributed to the service personnel in hard copy and online using the random sampling method.

The population of the research consists of 1795 people. The population of the research consists of 1795 people. An estimated sample size table was used to calculate the sample size. According to the table, 322 samples are sufficient for a population of 2000 size for 95% confidence level and 5% margin of error. While a total of 500 questionnaires were distributed, 350 responded. However, due to missing data, an effective response rate of 300 (60%) was achieved.

Questionnaire

The survey instrument included the tested and validated instruments developed by Parasuraman and Davis (see Appendix A). The items were clear and understandable, had already proven to be reliable and had been validated in former studies. The translations were performed by native speakers and were back translated to remove and reduce any translation errors. Participants were not asked to rate a specific technology on its PU and PEU. Instead, the participants were asked to select the software application they use most and complete the questionnaire considering their feelings about that application (not all employees used the same software). We assumed that this was the technology with which they had the most experience. However, this did not to mean that the technology was easier or more comprehensive to use. Each item question was scored on a Likert scale from 1 to 5, with a 1 rating indicating strong disagreement and a 5-rating indicating strong agreement.

Results and discussion

Results

The data were analyzed using Statistical Packages for Social Sciences (SPSS).

Demographic Profile of the Respondents

Descriptive statistics were used to analyze the entire demographic profile (N=300) of the study participants. Demographic characteristics of the participants were measured according to gender, age, education and experience (Shown in Table 1).

Table 1. Descriptive statistics

N = 300		Frequency	Percent
Gender	Female	102	34.0
	Male	198	66.0
Age	18-24	50	16.7
	25-34	102	34.0
	35-44	114	38.0
	45-54	34	11.3
Education	High school graduate	83	0.28
	Associate degree	37	0,12
	Bachelor's degree	140	0,47
	Master's degree	40	0.13
Experience	Less than 1 year	48	16.0
	1-5 years	73	24.3
	6-10 years	77	25.7
	11-15 years	54	18.0
	16 years and above	48	16.0

Exploratory Factor Analysis

An EFA with a principal component method and varimax rotation was conducted for the TRI 2.0 scale. The result of the principal component factor analysis applied to the 16 items indicated that there were four underlying dimensions (sub-factors) explaining 69.073% of the variance is shown in Table 2. Items that had factor loadings of lower than 0.40 and items loading on more than one factor with a loading score of equal to or greater than 0.40 on each factor were eliminated from the analysis. The Kaiser–Meyer–Olkin measure of sampling was 0.862 and

Bartlett's test of sphericity was significant (p < 0.000). Reliability coefficients range from 0.77 to 0.88, adequately meeting the standards for this type of research, (Nunnally, 1967). The overall TR score for each respondent was obtained by averaging the scores of the four dimensions, i.e., Optimism + Innovativeness + (6-Discomfort) + (6-Insecurity). The mean of all dimensions of TRI, overall, was 3, 22. This value indicated that the participants' technology readiness level was not high.

Table 2. Exploratory factor analysis for the TRI 2.0 scale

Factors	Factor Loading	Mean	Eigenvalue	Explained variance (%)	Cronbach's alpha
Insecurity (INS)		**3,39**	6.592	41.199	.829
INS1. People are too dependent on technology to do things for them	.742	3.64			
INS2. Too much technology distracts people to a point that is harmful	.847	3.53			
INS3. Technology lowers the quality of relationships by reducing personal interaction	.775	3.48			
INS 4.I do not feel confident doing business with a place that can only be reached online	.693	2.92			
Optimism (OPT)		**3.86**	1.932	12.075	.878
OPT 1. New technologies contribute to a better quality of life	.854	4.10			
OPT 2. Technology gives me more freedom of mobility	.808	3.83			
OPT 3. Technology gives people more control over their daily lives	.761	3.97			
OPT 4. Technology makes me more productive in my personal life	.741	3.55			
Innovativeness		**3.23**	1.398	8.739	.849
INN1. Other people come to me for advice on new technologies	.771	3.07			
INN2. In general, I am among the first in my circle of friends to acquire new technology when it appears	.770	2.77			
INN 3. I can usually figure out new high-tech products and services without help from others	.780	3.49			
INN 4. I keep up with the latest technological developments in my areas of interest	.742	3.61			
Discomfort (DIS)		2.84	1.130	7.060	.772
DIS 1. 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	.716	2.57			
DIS 2. Technical support lines are not helpful because they don't explain things in terms I understand	.654	2.90			
DIS 3. Sometimes, I think that technology systems are not designed for use by ordinary people	.530	3.05			
DIS 4. There is no such thing as a manual for a high-tech product or service that's written in plain language	.774	2.84			
Total				**69.073**	**.904**

Factor analysis applied to the 12 items related to the TAM scale indicated that there were four underlying dimensions (sub-factors) explaining %80.5 of the variance. The Kaiser–Meyer–Olkin measure of sampling was 0.922

and Bartlett's test of sphericity was significant (p <0.000). The reliability coefficient ranges from 0.88 to 0.76, thus adequately meeting the standards for such research are reported in Table 3.

Table 3. Exploratory factor analysis for the TAM scale

Factors	Factor Loading	Mean	Eigenvalue	Explained variance (%)	Cronbach's alpha
Perceıved usefulness (PU)		**3.79**	6.979	72.536	.955
PU 1. Cutting-edge technologies enables me to accomplish tasks more quickly	.609	3.85			
PU 2. Using cutting-edge technologies improves my job performance	.858	3.71			
PU 3. Using cutting-edge technologies increases my productivity	.849	3.68			
PU 4. Using cutting-edge technologies enhances my effectiveness on the job	.884	3.71			
PU 5. Using cutting-edge technologies makes it easier to do my job	.776	3.91			
PU 6. Overall, I find cutting-edge technologies useful in my job	.731	3.90			
Perceıved ease of use (PEU)		**3,60**	1.874	7.943	.918
PEU 1. Learning to operate the cutting-edge technologies is easy for me	.793	3.67			
PEU 2. I find it easy to get the cutting-edge technologies to do what I want it to do	.624	3.71			
PEU 3. Usage of the cutting-edge technologies is clear and understandable	.813	3.41			
PEU 5. It is easy for me to remember how to perform tasks using cutting-edge technologies.	.778	3.60			
PEU 6. Overall, I find the cutting-edge technologies easy to use	.796	3.61			
			Total variance explained	**80.479**	**.962**

Regression and Correlations Analysis

Pearson correlation analysis was performed for the relationship between the variables in the research model. When the analysis results are evaluated, the relationships between all the variables in the research model are statistically significant. On the other hand, the relationship of both insecurity and discomfort factors with other variables is negative (Shown in Table 4).

Table 4. Correlation Analysis

	DIS	INS	OPT	INN	PEU	PU
DIS	1					
INS	.594**	1				
OPT	-.485**	-.429**	1			
INN	-.478**	-.386**	.536**	1		
PEU	-.521**	-.512**	.704**	.704**	1	
PU	-.491**	-.406**	.680**	.570**	.833**	1

**. Correlation is significant at the 0.01 level (2-tailed).

To examine the effect of Technology Readiness Index 2.0 factors on PEU, regression analysis was estimated with a stepwise technique. The result of the regression analysis is presented in Table 5. The regression model shows that three factors (innovativeness, insecurity and optimism) explain the PEU at the level of approximately 67%. In this model, standardized values suggest that the 'innovativeness' (β= .425) is the most important factor in explaining the dependent variable, while the 'insecurity' (β= -.180) is in a negative relationship.

Table 5. The regression analysis of the effect of TRI 2.0 dimensions on Perceived Ease of Use

	Standardized Coefficients			Correlations			Collinearity Statistics	
	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
(Constant)		5.210	.000					
Innovativeness	.425	10.541	.000	.708	.524	.351	.682	1.467
Optimism	.398	9.657	.000	.704	.491	.322	.652	1.534
Insecurity	-.180	-4.780	.000	-.514	-.269	-.159	.783	1.278

Dependent Variable: PEU. Overall model: F= 202.658; R^2 = .674, adjusted R^2 = .671; p = .000

On the other hand, in the regression analysis performed with the stepwise technique to examine the effects of TRI 2.0 dimensions on PU, the regression model shows that three factors (optimism, innovativeness and discomfort) explain the PU at the level of approximately 53%. In this model, standardized estimates of variables suggest that optimism (β= .477) and innovativeness (β= .254) are positively related to "PU" while the 'discomfort' (β= -.139) is negatively related (Shown in Table 6).

Table 6. The regression analysis of the effect of TRI 2.0 dimensions on PU

	Standardized Coefficients			Correlations			Collinearity Statistics	
	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
(Constant)		4.536	.000					
Optimism	.477	9.665	.000	.681	.491	.383	.643	1.555
Innovativeness	.254	5.161	.000	.577	.288	.204	.649	1.542
Discomfort	-.139	-2.924	.004	-.491	-.168	-.116	.699	1.431

Dependent Variable: PU. Overall model: F= 114.643; R^2 = .539, adjusted R^2 = .534; p = .000

Optimists are less likely to focus on adverse events and thus confront technology more openly. They are more likely to accept their situation and less likely to be escapists. Therefore, optimists are more willing to use new technologies (Scheier & Carver, 1987; Loyd & Gressard, 1984; Munger & Loyd, 1989). This is also consistent with our findings. Our findings showed that an optimist perceives technology as more useful and easier to use because he or she worries less about the possible negative outcomes. Some studies reported that high personal optimism about technology affects in general leads to higher PEU and PU of new technologies (Esen & Erdoğmuş, 2014; Walczuch et al., 2007).

It is stated that personal innovativeness in IT is the ''willingness of an individual to try out any new information technology'' (Midgley, 1978; Flynn & Goldsmith, 1993). Karahanna, Straub, & Chervany (1998) showed that more innovative individuals, the early adopters, have less complex belief sets about new technology. Furthermore, people scoring high on innovativeness have a positive impression of its usefulness in general. Early adopters use innovations even when their potential value is uncertain and their benefits are not obvious (Walczuch et al., 2007). Our results resonate with findings from previous research that personal innovativeness about technology affects is positively related to PEU and PU of new technologies.

Apprehensiveness, as described by Kwon and Chidambaram (2000), results in individuals avoiding the use of computers due to their innate fear of technology. According to this, our findings support the idea that personal insecurity with regard to technology is negatively related to the PEU of a specific technology. Furthermore, it was found that personal discomfort with regard to technology is negatively related to PU of technologies. These findings are also similar to current literature (Walczuch et al., 2007; Esen & Erdoğmuş, 2014). According to Parasuraman (2000), a person with little discomfort is more likely to use new technology. This argument is consistent with our findings.

To examine the effects of PEU on PU, regression analysis was estimated. The regression model shows that PEU explains the PU at the level of approximately 69% (Shown in Table 7). Likewise, some empirical studies have demonstrated that PEU significantly and positively influences PU (Taylor & Todd, 1995; Venkatesh & Davis, 2000; Venkatesh & Morris, 2000; Walczuch et al., 2007).

Table 7. The regression analysis of the effect of PEU on PU

	Standardized Coefficients			Correlations			Collinearity Statistics	
	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
(Constant)		5.325	.000					
PEU	.833	26.037	.000	.833	.833	.833	1.000	1.000

Dependent Variable: PU. Overall model: F= 677.927; R^2 = .695, adjusted R^2 = .694; p = .000

In conclusion, according to the analysis findings, the results of the hypothesis tests are shown in Table 8. In light of the evidence of each hypothesis tests, it can be stated that personality makes a difference in the adoption process of new technologies and this may help explain how its adoption may be influenced by the user's personality as well as the characteristics of the technology. Personality characteristics as measured in the TRI have a significant effect on technology adoption. While service employees' innovativeness has the strongest impact on PEU of new technologies, their optimism has the strongest impact on PU of new technologies; they seem to confront technology effects more openly and positively and are less likely to focus on its negative aspect. These findings were expected.

Another important insight gained from this research pertains to the impacts of personal discomfort on PU and PEU. Although discomfort had a negative impact on PU, it had no impact on PEU. Employees scoring high on this dimension felt overwhelmed by the complexity of technology, as predicted. Besides, the insecurity negatively impacted PEU, but it had no impact on PU. As predicted, insecure employees perceived new technologies as not easy to use. As not predicted, although the participants' insecurity levels (Mean=3.29, SD= 1.16) were not high, the insecurity had no impact on PU. This finding is also different from the existing literature.

Table 8. Results of the hypothesis tests

Hypothesis	Conclusion
H1a. Personal optimism about technology affects the perceived ease of use of new technologies.	Supported
H1b. Personal optimism about technology affects the perceived usefulness of new technologies.	Supported
H2a. Personal innovativeness about technology affects the perceived ease of use of new technologies.	Supported
H2b. Personal innovativeness about technology affects the perceived usefulness of new technologies.	Supported
H3a. Personal insecurity of technology affects the perceived ease of use of new technologies.	Supported
H3b. Personal insecurity of technology affects the perceived usefulness of new technologies.	Not Supported

Table 8. Results of the hypothesis tests (cont.)

H4a. Personal discomfort with technology use affects the perceived ease of use of new technologies.	Not Supported
H4b. Personal discomfort with technology use influences the perceived usefulness of new technologies.	Supported
H5. There is a positive relationship between perceived ease of use and perceived usefulness.	Supported

This study also considered individual differences and situational factors in predicting personal attitudes to technology readiness and perceptions of PEU and PU. The differences between the answers of the participants on both scales according to the variables of age, education and experience were analyzed with the one-way ANOVA test (Shown in Table 9, Table 10 and Table 11). Contrary to previous research, the results of the Independent sample t-test, which was conducted to determine the differences according to gender, revealed that there was no statistical difference. In previous research, which aims to measure teachers' technology readiness using TRI, male teachers demonstrated a higher overall technology (e.g. Summak, 2010). Similarly, some studies have reported that male teachers' attitudes toward computer technology are more positive than females (Dupagne & Krendi, 1992; Ertmer, Addison et al., 1999).

Existing literature suggests that technology readiness and acceptance of new technologies also depend on age, gender, education and prior experience (Blut & Wang, 2020).

As seen in Table 9, significant differences were found in the levels of insecurity, innovativeness, optimism, PEU and PU according to age groups. When evaluated in terms of differences, the group with the highest level of insecurity is 18-24. On the other hand, in terms of innovativeness, the most significant difference is between the 25-34 age group and the 45-54 age group. The 25-34 age group also has the highest innovativeness level among others. It is also noteworthy that the 45-54 age group has the lowest PEU and PU levels. It can be concluded that the level of innovativeness, optimism, PEU and PU increases as the age group gets younger.

Table 9. One-way ANOVA test results according to age groups

Dependent Variable	F	Sig.	Age Group	Mean	(I) Age	(J) Age	Mean Difference (I-J)
Insecurity	8.571	.000	18-24	4.0500			
			25-34	3.4461	18-24 *	25-34	.60392*
			35-44	3.1491		35-44	.90088*
			45-54	3.0735		45-54	.97647*
Innovativeness	11.232	.000	18-24	3.3600	18-24 *	45-54	.92618*
			25-34	3.6275	25-34*	35-44	.56385*
			35-44	3.0636		45-54	1.19363*
			45-54	2.4338	35-44*	25-34	-.56385*
						45-54	.62977*
Optimism	9.834	.000	18-24	4.1400	18-24 *	45-54	.97088*
			25-34	4.1373			
			35-44	3.7039	25-34*	35-44	.43331*
			45-54	3.1691		45-54	.96814*

Table 9. One-way ANOVA test results according to age groups (cont.)

PEU	15.948	.000	18-24	4.2240	18-24*	25-34	.40439*
			25-34	3.8196		35-44	.87488*
			35-44	3.3491		45-54	1.38282*
			45-54	2.8412	25-34*	18-24	-.40439*
						35-44	.47049*
						45-54	.97843*
PU	13.845	.000	18-24	4.4133	18-24*	35-44	.87971*
			25-34	4.0163		45-54	1.33000*
			35-44	3.5336	45-54*	25-34	-.93301*
			45-54	3.0833			

*The mean difference is significant at the 0.05 level.

These findings are also consistent with previous research. Regarding demographics, previous research found age to be negatively associated with innovativeness and optimism of TR, meaning that younger and better-educated people generally use new technologies more readily (e.g. Dutot, 2014; Blut & Wang, 2020). Older people are generally considered less innovative because they are more reluctant to change. They are typically less optimistic because they are less able to see the benefits of using new technologies due to reduced cognitive learning capabilities (Rojas-Méndez, Parasuraman, & Papadopoulos, 2017). However, these effects are sometimes nonsignificant (Gilly et al., 2012), perhaps because during the last 20 years, all ages have become more familiar with the technology.

According to Blut and Wang (2020) age is positively related to insecurity and discomfort. They propose that older people are more likely to feel uncomfortable about using new technologies, again due to their reduced cognitive capabilities. Moreover, they generally tend to be skeptical about new things given their richer life experience; thus, they are more likely to feel insecure about new technologies (Blut & Wang, 2020). However, this proposition does not support our findings. Our research findings revealed that the level of insecurity increases as the age group gets younger.

Table 10. One-way ANOVA test results according to experience

Dependent Variable	F	Sig.	Experience	Mean	(I) Experience	(J) Experience	Mean Difference (I-J)
Optimism	4.646	.001	Less than 1 year	4.3542			
			1-5 years	3.8699	Less than 1 year*	1-5 years	.48430*
			6-10 years	3.6753		6-10 years	.67884*
			11-15 years	3.9769		16 years and above	.81771*
			16 years and above	3.5365			
Innovativeness	5.025	.001	Less than 1 year	3.7292			
			1-5 years	3.2774	Less than 1 year*	16 years and above	1.03646*
			6-10 years	3.2370			
			11-15 years	3.2083			
			16 years and above	2.6927			
Insecurity	5.671	.000	Less than 1 year	4.0729	Less than 1 year*	1-5 years	.68936*
			1-5 years	3.3836		6-10 years	.80019*
			6-10 years	3.2727		11-15 years	.86921*

Table 10. One-way ANOVA test results according to experience (cont.)

			11-15 years	3.2037		16 years and above	.94792*
			16 years and above	3.1250			
PEU	10.314	.000	Less than 1 year	4.4167	Less than 1 year*	1-5 years	.80571*
			1-5 years	3.6110		6-10 years	.98810*
			6-10 years	3.4286		11-15 years	.91667*
			11-15 years	3.5000		16 years and above	1.27917*
			16 years and above	3.1375			
PU	9.729	.000	Less than 1 year	4.6458	Less than 1 year*	1-5 years	.83533*
			1-5 years	3.8105		6-10 years	1.04410*
			6-10 years	3.6017		11-15 years	1.01003*
			11-15 years	3.6358		16 years and above	1.24653*
			16 years and above	3.3993			

*The mean difference is significant at the 0.05 level.

As seen in Table 10, there are statistically significant differences in the levels of optimism, innovativeness, insecurity, PEU and PU of the participants according to their work experience. The remarkable point is that in terms of all these dimensions, there is only a difference between employees with less than 1 year of experience and other experience groups. In addition, the group with less than 1 year of experience has the highest level of optimism, innovativeness, insecurity, PEU and PU among others.

This study follows Vize, Coughlan, Kennedy and Ellis-Chadwick's (2013) proposition that past experience positively influences an individual's TR. Experience is positively related to optimism and innovativeness. Research has suggested that past experience with technology increases an individual's propensity to adopt further technologies (Vize et al., 2013). Thus, experienced people are likely to be more innovative by habit. Furthermore, experience is related to optimism. As suggested Blut and Wang (2020), with more experience, people are technologically savvier and, hence, more likely to understand the benefits of using technology, leading to a more positive view of technology in general. But our findings are contrary to the literature. Prior studies have focused on how experience influences TR, suggesting that the greater people's technology-related experience, the higher their TR. That is, experience is positively related to TR, especially its innovativeness dimension (Maier, 2016).

Distinct from optimism and innovativeness, Blut and Wang (2020) have expected the experience to reduce the feeling of insecurity regarding technology through experience-based trust. Thus, experience is negatively related to insecurity according to recent research (Blut & Wang, 2020). Our research also shows that the level of insecurity of the employees with more work experience is low. Previous TR research has rarely examined the demographics of the employees to determine the effect of individual differences and situational factors on the technology readiness and especially technology acceptance level. Therefore, findings in this area are limited.

Table 11 shows that there are significant differences in the levels of optimism, discomfort and insecurity, PEU and PU according to the education level of the participants. Among the education groups, the lowest level of insecurity and discomfort was those with Master's and Bachelor's degrees. Those with the highest levels of optimism, PEU and PU were also in Bachelor's and Master's degrees. These results support the suggestions in the literature. Rojas-Méndez et al. (2017) suggest that highly educated people are more innovative because they have more sophisticated cognitive structures that enable learning in new environments. This makes them more ready and likely to be among the first to try new technologies. Because education increases one's ability to learn and adapt in new environments, it stimulates a more optimistic view of new technologies (Blut & Wang, 2020).

Table 11. One-way ANOVA test results according to education groups

Dependent Variable	F	Sig.	Education	Mean	(I) Education	(J) Education	Mean Difference (I-J)
Optimism	10.443	.000	High school graduate	3.5000	High school graduate*	Bachelor's degree	-.64583*
			Associate degree	3.2778			
			Bachelor's degree	**4.1458**	Associate degree*	Bachelor's degree	-.86806*
			Master's degree	3.7500			
Discomfort	6.021	.001	High school graduate	2.7031			
			Associate degree	3.0412	Associate degree *	Master's degree	.93008*
			Bachelor's degree	2.3889			
			Master's degree	2.1111			
Insecurity	6.651	.000	High school graduate	3.6101			
			Associate degree	3.5278			
			Bachelor's degree	3.1250	Bachelor's degree*	High school graduate	-.48512*
			Master's degree	2.6389	High school graduate*	Master's degree	.97123*
PEU	8.905	.000	High school graduate	3.2875	High school graduate*	Bachelor's degree	-.58155*
			Associate degree	3.3778			
			Bachelor's degree	3.8690			
			Master's degree	3.7333			
PU	4.022	.008	High school graduate	3.3148			
			Associate degree	3.5370	High school graduate *	Bachelor's degree	-.67328*
			Bachelor's degree	3.9881			
			Master's degree	3.6903			

*The mean difference is significant at the 0.05 level.

Previous research has shown that education is negatively related to discomfort and insecurity (e.g. Blut & Wang, 2020). Highly educated people, due to their sophisticated cognitive learning capabilities, tend to be more confident in their ability to control technology, and therefore less likely to feel uncomfortable or overwhelmed when using technology. Education contributes to people reduce their reservations as they increase their ability to learn in new situations so they can better understand new technologies (RojasMéndez et al., 2017). Previous technology readiness works have not emphasized much on differences in the level of acceptance of new technologies by employees' demographics.

Conclusion and implications

Conclusions and theoretical implications

The findings of this research contribute to the existing literature on several points. First, this research fills the research gap by exploring the relationship between technology readiness and technology acceptance of service employees in the tourism industry using the combined model of the TRI and TAM. This model may facilitate defining the relation between TRIs personality trait dimensions and the cognitive dimensions of TAM. Previous technology readiness and acceptance research have emphasized much on a view of adopting a new technology for both consumer and employee context (e.g., Venkatesh et al., 2003; 2012), especially for consumer context (e.g., Kulviwat et al., 2007). The present research aims to fill this gap by exploring this relationship in employee context. Thus, the present study extends previous research.

Second, this research thus generates new knowledge about digital transformation in the field of tourism with its unique aspect in terms of revealing how the personal characteristics of service employees affect the perceived ease of use and perceived usefulness of technology. Third, this research suggests a new conceptual model of addressing how managers can increase service employees' readiness of technology. The suggested model offers insight for managers into how to effectively manage the technology internalization process in tourism businesses. Further, this research directs future investigations by providing the ground for testing and validating the presented model.

Findings reveal that 6 of the 8 hypotheses for analyzing how service employees' personal characteristics affect the PEU and PU of technology, which is the main objective of this study, were validated. Pearson correlation analysis results were statistically significant among all variables. In addition, both insecurity and discomfort factors were negatively correlated with other variables, as expected.

Regression analysis showed that three factors (innovation, insecurity and optimism) had an effect on PEU (e.g. Esen and Erdoğmuş, 2014; Walczuch et al., 2007), but the discomfort had no effect. Findings revealed that although the participants' discomfort levels were not high, it had no effect on PEU. This was not expected. In addition, the findings of the current study indicated that the most essential factor in explaining the dependent variable (PEU) was 'innovation' and there was a negative relationship between the insecurity factor and PEU (e.g. Esen and Erdoğmuş, 2014; Walczuch et al., 2007). The effects of these dimensions are not surprising, given that PEU is the degree to which one believes using a particular application technology will be effortless.

Further, it was found that optimism and innovativeness had a positive effect on PU, while the "discomfort" dimension had a negative effect (e.g. Walczuch et al., 2007). This result was expected, as PU was evaluated as the degree of belief that using a particular application technology would improve task performance, and discomfort was evaluated as a perceived lack of control over the technology and a feeling of being overwhelmed by it. We further examined the effect of PEU on PU and the results of the regression analysis showed that it had a significant effect (e.g. Venkatesh & Morris, 2000).

Differences according to demographic factors were also analyzed in the study. It was observed that the mean of insecurity, innovation, optimism, PEU and PU dimensions increased as the age group got younger. It is also remarkable that the optimism levels of the participants in the 18-24 age group are high, who think that people are too dependent on technology to do anything for themselves, that excessive use of technology distracts people, and that technology reduces the quality of relationships by reducing personal interaction. In addition, it was noted that the group with less than 1 year of experience had the highest response averages for the two dimensions of TRI (optimism and innovativeness) and the two dimensions of TAM (PEU and PU). This situation revealed that years of experience increase were ineffective in these dimensions. In addition, it was found that the group with less than 1 year of experience had high levels of insecurity. Considering that this group is at a young age, it supports the findings mentioned above regarding age groups.

Another finding is related to education level. Our results resonate with findings from previous research that as the level of education increased the level of insecurity and discomfort decreased rather the level of optimism, PEU and PU increased (e.g. Blut & Wang, 2020). In the study, there was no statistical difference between the genders.

Managerial implications

Our findings emphasize the importance of taking users' personality and readiness for technology acceptance into account. The personality trait of a user has an impact on the adoption process of new technologies and thus technology use. This shows that managers should take employees' personality differences into account when adopting new technologies.

Further, this research sheds light on the participants' technology readiness level. The mean of all dimensions of TRI, overall, was 3.22. This value indicated that the participants' TR level was moderate. In conclusion, this study showed that service employees' TR level was not high. This can cause some problems in the integration process. However, it is promising that the level of discomfort was low and the PEU and PU means are above moderate or near high. We recommend that managers should design some activities to increase service employees' readiness of technology. These can contribute to the success of technology integration as well as to technology acceptance and service quality. To that end, we develop the Technology Internalization Process model shown in Figure 2 below. This model emphasizes our research implications for addressing how managers can increase service employees' readiness of technology by synthesizing research findings and literature. The suggested model offers insight into how to effectively manage the technology readiness and adoption process in tourism businesses. Establishing the "Technology Internalization Process" by managers in businesses can make a significant contribution to raising the level of TR of service employees.

Such a process, which will enable the service employees to feel themselves as a stakeholder rather than a user using the existing technology in the enterprise, will also support the creation of a culture of being ready for the technology. This approach will contribute to increasing the level of technology readiness of service employees and increase adoption, desire and development by reducing fear, insecurity, complexity, overwhelm or doubt.

In the introduction phase, which is the first stage of the process in Figure 2, the aim is determined as minimizing negative approaches such as fear or distrust toward new technology. Elimination of concerns based on uncertainty at this stage will result in employees who are ready to share. For this, action definitions for senior management and department supervisors were made.

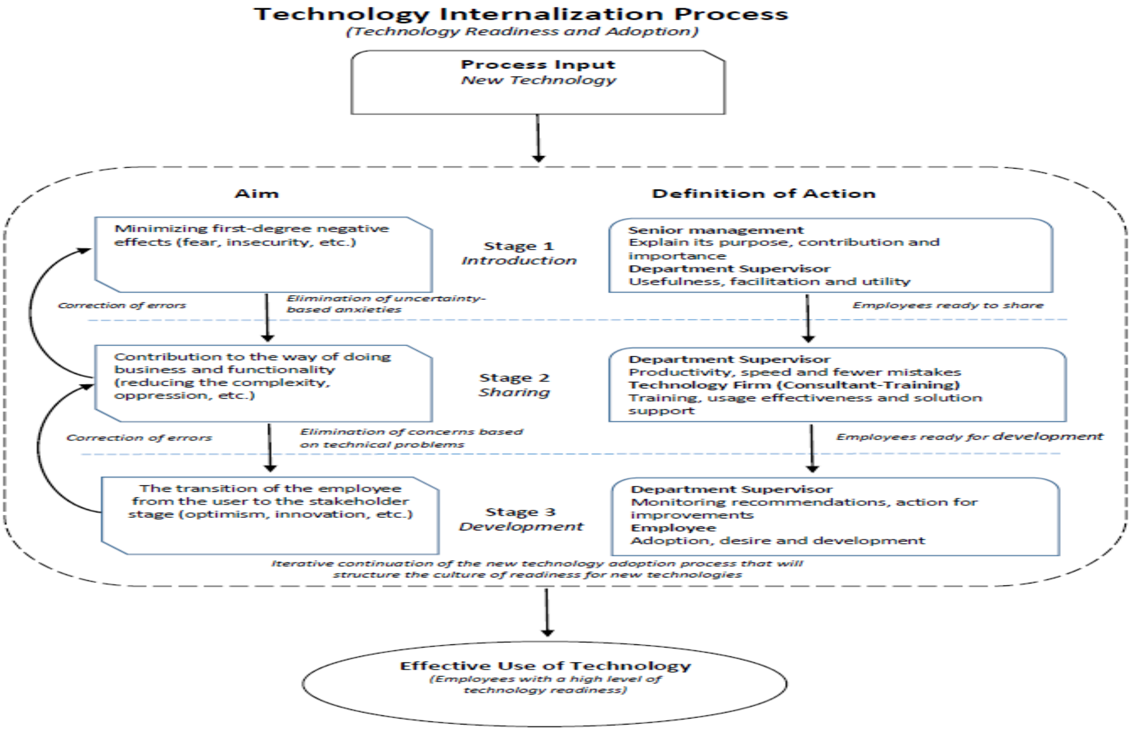


Figure 2. Technology Internalization Process (Readiness and Adoption of New Technology)

In the second stage, sharing, it is aimed to reveal the functionality of the new technology and its contribution to the way of doing business. The sharing stage is designed to serve to minimize employees' negative attitudes toward the technical aspect of new technology. In order to achieve this goal, the department supervisor and the technology firm take part in the definitions of action. The emphasis of the department supervisor on the way the new technology does business (productivity, speed, etc.) is to convince the employees of its usefulness. The facilitating role that the technology company will play with its actions (training, solution support, etc.) is aimed at convincing employees that the new technology is easy to use and uncomplicated.

In the third stage, development, it is aimed to ensure that all employees, including early adopters or innovative employees, pass to the stakeholder stage and are optimistic, open-minded and enthusiastic about new technology. At this stage, employees are also involved in the definitions of action. Employees will be able to demonstrate a willing and open-minded approach by evaluating the suggestions provided by the department supervisor and improving the use of new technology.

This three-step process, seen in Figure 2, is cyclical. The iterative process aims at structuring a culture for the adoption of new technologies in the enterprise. Achieving the defined objectives through the realization of action definitions at all three stages will significantly contribute to increasing the level of readiness of business employees for new technologies.

Introduction, sharing and development stages will also provide opportunities and opportunities for employees to be positively affected by factors such as experience, age and education. Providing feedback to correct the errors determined for the achievement of the objectives at each stage will contribute to the cycle becoming more effective each time.

The process in Figure 2 will also contribute to employees developing positive approaches to issues such as addiction, distraction, or negative effects on the employee-technology relationship. It will support the feeling that new technologies will contribute to the quality of life of employees. The process, on the other hand, will enable employees to change their thinking, as new technologies are complex or not adequately supported.

The process will also enable employees to experience faster, productive, efficient and effective work with the help of new technologies and will be effective in developing a positive perception in this direction. The process as a whole will contribute to positively change the approach of employees to new technologies and will support the positive structuring of their perspectives on the fact that the use of new technology has facilitating and improving effects on both the quality of work life and private life.

Limitation and future research

This study has certain limitations that future research should address. First, the sample for this research was taken from the service employees of TAV Airports Holding, Izmir Adnan Menderes Airport and thus deals with only one industry (especially provides tourism services) and one cultural setting. Findings may not be seamlessly transferable to other service providers and countries. Also, the use of a service provider may have had an impact: a more innovative company may show different results especially for innovativeness. Future attempts may take an employees' perspective from different industrial and cultural settings and gain a complete understanding of employees' technology readiness and acceptance tendencies. Technology oriented organizations can, therefore, customize design features for the employee use, respectively.

Second, this study also did not consider moderators in predicting the relationship between service employees' technology readiness and acceptance tendencies. We find differences in effects between TR dimensions and TAM dimensions. Specifically, the inhibitors display different effects on TAM dimensions (PU and PEU), as initially not predicted. We speculate about reasons for these differences, because the participants' PU and PEU levels were high. Existing literature suggests that service employees' acceptance of new technologies also depends on generational differences and people's prior Web experiences. Future attempts may investigate how the moderators impact service employees' acceptance of new technologies. Further, future studies may examine mediator effects. Various moderators and mediators may provide more explanations thereon.

Third, the proposed model offers insight for managers into how to effectively manage the technology internalization process in tourism businesses. The empirical research is needed to test the presented model. It might be beneficial to analyze how effectively these models could be put into practice in tourism businesses.

Declaration

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İlgide kayıtlı yazınıza istinaden Sosyal ve Beşeri Bilimler Araştırma ve Yayın Etik Kurulunun 29.09.2021 tarihli toplantısında alınan 7 sayılı karar ile Fakülteniz Gastronomi ve Mutfak Sanatları Bölümü Öğretim Üyesi Dr.Demet BAĞIRAN ÖZŞEKER'in "Hizmet Çalışanlarının Teknolojiye Hazır Olma Durumunun Teknoloji Kabulüne Etkisi" başlıklı çalışması için yapacağı uygulamanın etik açıdan uygun olduğuna karar verilmiş olup, alınan karar Makamımızca onaylanmıştır.

Bilgilerinizi ve gereğini rica ederim.

Prof.Dr. Nükhet HOTAR
Rektör

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