

## Effect of Perceived Risk, Perceived Usefulness, Trust and It-related Knowledge on Adoption of E-ticketing in Iran

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**Abstract:** Using internet as a new channel for providing different services is growing rapidly, but it is clear that focusing only on technology can not lead the business to be successful. The key point of successful business is still focusing on the customers and using new opportunities of rapid technological changes. Since the anxiety of customers' adoption / rejection of offering services based on new technology is considerable, understanding what factors are important for customers to adopt these new types of services is the challenge for researchers and service providers. The present research aimed at gaining better understanding of the factors affecting on e-ticketing adoption of Iranian customers. Since the adoption of e-ticketing provided by airlines can be explained with an intention based model, we developed the model based on the Theory of Planned Behavior (TPB) to explain the effect of different factors on e-ticketing intention. Then, the model was tested with two surveys that the respondents have been selected based on the level of IT-related knowledge (in internet related fields). The data collected from 133 passengers with the minimum skills of using internet indicated that attitude, subjective norms and perceived usefulness significantly affect on Iranian customers' intention to purchase e-ticket and perceived risk has negative significant effect on intention to use e-ticketing. Also the result provided support for the effect of trust, perceived risk and perceived usefulness on attitude toward using e-ticketing. The data collected from 120 IT professionals who had higher level of IT-related knowledge showed that attitude and perceived usefulness had significantly effect on intention to use e-ticketing and perceived usefulness have effect on IT professionals' attitude to use e-ticket. The results showed that although knowledge (IT knowledge) has not been considered as a one of the constructs of TPB, but it influences the adoption pattern tangibly. The implications are noteworthy for both researchers and practitioners.

**Key words:** E-ticketing · Adoption · Airlines · Trust · Perceived risk · Theory of Planned behavior (TPB) · IT Professionals

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### INTRODUCTION

Recent reports has showed that in 20<sup>th</sup> century, the basis of economic successfulness was the introduction of self services which affected all areas of our lives [1]. Technology-based-self-service as a part of e-service now plays an important role in changing the way that firms, manufacturers and customers interact. In recent years, using e-service in airline industry -known as e-ticketing (using internet) or self check-in (using ATM) has changed the airline industry and behavior of the consumers [2]. Reducing costs and providing new channel for communication and support are the advantages of using web-based electronic services. E-

ticketing or online ticketing is one of the most rapidly growing services which have been

provided in the internet. Online airline ticket sales reached approximately \$14.2 billion in 2002. Although the growth of internet based airline reservation services has been rapid, internet sales have generally experienced slow growth because of barriers related to the customers' adoption of these online services [3]. On the other hand, airline industry is facing with the IATA deadline about 100% e-tickets at the end of 2007(IATA 2006). It means that not only airlines must be ready for this new concept, but also the customers have to accept this new technology with all its advantages and disadvantages. When airlines shift from paper-based ticket to e-ticket,

customers' acceptance will become important for both sides. Airlines try to offer services through electronic infrastructures, especially through the web, to decrease their costs, expand revenue and creating reliable database of customers for future customer relationship management plans.

A critical understanding of expected behavior can not be achieved without a good appreciation of the factors affecting the purchase decision. If decision makers of service providers know how consumers make decisions to adopt or reject their provided services, they can set suitable strategies to persuade current and potential customers of traditional services to accept the new services. Similarly, website designers and website developers can find important points about the customers' behavior that help them to design website interface and functionality in a way that not only be easy to use, but also meet all customers' need and increase sales.

The objective of this study was to find the factors affecting on Iranian customers' adoption of e-ticketing. To achieve this objective, we proposed a model based on TPB (Theory of planned behavior) [4] and new constructs based on the literature were proposed. To explore the effect of IT-related knowledge (e.g. work experience, IT training, working with web-based application,...) on customers' acceptance toward e-ticketing, the model tested with conducting two surveys with two different groups of people who have minimum and high level of IT-related knowledge respectively. The results can provide good understanding about the customers' priorities on intention to use e-ticketing.

**Theoretical Background:** There are different behavioral theories that adoption can be explained by using them: the theory of reasoned action (TRA) proposed by Fishbein and Ajzen [5], Triandis model [6], the theory of planned behavior (TPB) proposed by Ajzen [4] and information system theories such as Technology Acceptance Model (TAM) [7].

The TRA suggests that a person's behavior is determined by his/her intention to perform the behavior and this intention is a function of his/her attitude (the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior [4] toward the behavior and the effect of subjective norms (SN) (influence of positive and negative effects of people who are important for decision maker [4] on his/her decision (i.e. social influence). This theory assumes that most human social behaviors are under volitional control and can be predicted from intentions.

Limitations of TRA on predicting behavior, where individuals do not have complete control over their behavior become the main reason for proposing TPB as the model which suggested that although subjective norms and attitude affect on intention to perform behavior, perceived behavioral controls (PBC) (individual's perceptions of her/his ability to perform the behavior) can be considered as a new concept affecting both attitude and intention.

Davis TAM asserted that perceived usefulness and ease of use represent the beliefs that lead to adoption of new ideas [7]. In the model, intention is determined by attitude and perceived usefulness, while attitude is determined by perceived ease of use and perceived usefulness. These concepts are the basis of TAM which mainly focuses on the adoption in IS related fields. A limitation of TAM is its main assumption. It supposes that when a user decided to use a service or system, it is completely volitional and there are no barriers in a way of using the system. Although there are many factors preventing an individual from using an application (IS application) such as perceived user resources and perceived behavior control [8].

Triandis' model is similar to the TPB in modeling intentions, in addition, Triandis' model suggests that behavior is affected by habits, intention and facilitating conditions. Although Triandis' model is more comprehensive than the TPB, many of its constructs are difficult to operationalize [9].

Trust is the necessary part of a relationship and since the objective of e-service is creating long term relationship with customers, trust was included as a construct of the research model. Trust, defined as the willingness to rely on an exchanging partner in whom one has confidence [10], also is one of the most important variables in the relations between human and computer [11]. The importance of trust has been especially emphasized in the context of electronic commerce [12] and is basically seen as a common way for reducing social complexity and perceived risk of transaction through increasing the expectation of a positive outcome and perceived certainty regarding the expected behavior of trust [13].

Researches have shown that trust on e-vendors can be viewed as an important factor that directly affects on customers' attitude toward using e-vendors' services. When the customers find the e-vendors trustworthy, they will be more interested in adoption of using e-vendors' services. It possibly will decrease the risk of adoption [14]. The level of perceived risk decreases when individual trusts the others involved in the transaction [15,16].

Since trust is an abstract concept, it is difficult to define trust and to identify its elements [17]. Warkentin's study found that trust in an organization or government who are responsible for the provided e-services, is an important factor of the adoption of the e-service [18].

All constructs mentioned above, were studied in different sections of e-service. In air transport industry, Kolsaker suggested that Perceived risk related to the lack of privacy policies, security influence Hong konger users' intention to use e-ticketing, in addition the results showed that saving time, information provided by website, availability and functionality of the website are important factors for e-ticketing users in Hong Kong [19]. Koppius categorized the factors affecting on e-ticketing adoption in the Netherland and suggested that perceived ease of use and perceived useful influence customers in order to use e-ticketing [20]. In similar study, Karimi found that trust, perceived behavioral control, subjective norm and attitude toward using e-ticketing are factors that directly affect on Iranians' intention to buy train ticket online and perceived usefulness doesn't have significant effect on intention to use e-ticketing [21].

**Proposed Model:** In this study, we focused on the factors affecting on adoption of e-ticketing in Iran. We developed our research model based on TPB because of the support in information systems and other field such as social researches. TPB helps us to study mainly individual's characteristics and behavior and their effect on intention to use new ideas. In fact, by using TPB we tried to look at the problem from customers' point of view. The main variable that has been selected to be predicted in the model is intention to adopt e-ticketing. Intention is a function of attitude toward using e-ticketing, subjective norm, perceived behavioral control [4], perceived risk [15,16,22] and trust on website[12,13,21,23,24] and perceived usefulness[7,25]. The proposed model showed in Figure 1.

TrustW = trust on website, TrustB : trust on Brand, PBC : perceived behavioral control, ATT: attitude INT: intention, SN : subjective norm ; PR : perceived risk, PU: perceived usefulness

The effect of attitude, subjective norm, perceived behavioral control and perceived usefulness has been described earlier in TAM and TPB [4,7]. It was assumed that trust in organization and perceived risk are directly related to trust in website and trust in website, perceived risk and perceived usefulness are antecedents of attitude

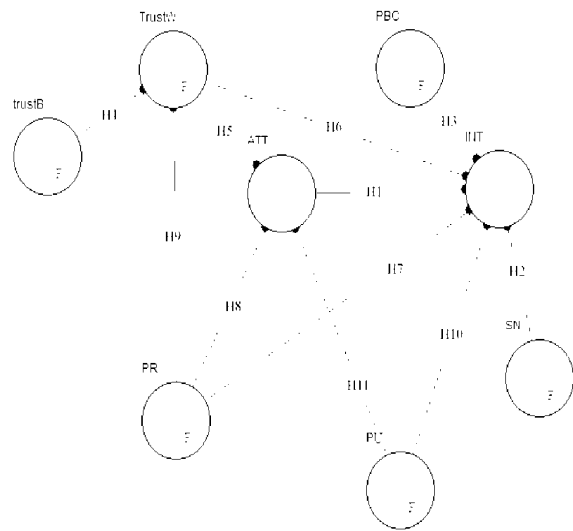


Fig. 1: Research Model

toward using e-ticketing. Although knowledge, or correct factual information, plays no direct role in the TPB [4] , We assumed that IT knowledge could be another variable that may affect intention to use e-ticketing indirectly. Table 1 represents our assumed hypotheses.

**Research Methodology:** Based on the research questions and also previous literatures, descriptive research method was considered for the present study. Based on the objective of research, quantitative approach was found to be suitable and due to the fact that the research questions focus on a contemporary event, survey was more appropriate for our research.

The population of interest and sampling frame was all the passengers who have minimum required skills for using internet. To choose the element of sample, we used probability sampling, in a way that we selected a person who satisfies our criteria with the minimum skills of using internet and not having experience e-ticketing.

Data collection was performed using self-administrative survey. The questionnaire has been developed based on research problem. Theoretically, we used "TPB" questionnaire development process [26]. The questionnaire consisted of demographic questions and 37 questions with 5 Likert-scale (5=strongly agree, 1=strongly disagree). There was a note in a questionnaire that if the respondent has already used e-ticketing service, she/he must return the questionnaire to the researcher, therefore none of the respondents had used e-ticketing before.

Table 1: Hypotheses

Effects on intention	
H1	Attitude toward using e-ticket will increase intention of purchasing ticket online.
H2	Subjective norm has positive impact on passengers' intention to use e-ticket.
H3	Perceived behavioral control has positive impact on passengers' intention to use e-ticket.
H6	Trust on the website will increase intention to buying ticket online.
H7	Perceived risk has negative impact on intention to purchase ticket online.
H10	Perceived usefulness has positive impact on intention to purchase ticket online
Effects on attitude	
H5	Trust on the website will increase attitude toward buying ticket online.
H8	Perceived risk decreases attitude toward purchasing e-ticket.
H11	Perceived usefulness has positive impact on attitude toward purchasing ticket online.
Effects of Trust in website	
H9	Perceived risk has negative impact on trust to the e-ticket provider website.
H4	Trust to the organization will increase customers' willingness in order to trust in website (e-service provider).

**Respondent:** To choose the element of sample, we used probability sampling, in a way that we selected a person who satisfies our criteria. Sample size was calculated based on Chin and Francis papers [26,27]. It was assumed that the level of IT knowledge (IT training) influences intention toward using e-ticketing. Since, Information does not play a direct role in TPB, therefore two groups of respondents were selected with different levels of IT knowledge to evaluate research model with two different groups of respondents. The first group consisted of all passengers in main airport of Tehran with the minimum required skills of using internet and without any experience with e-ticketing. 144 passengers completed the questionnaire and 133 questionnaires were acceptable. 84 were completed by males (63%) and 49 by females (36%).

The second group consisted of computer engineers, IT-related Companies' staffs and Msc students of e-commerce. This group of people worked on internet related fields and used internet as a tools for their job. 157 persons completed the questionnaire and 120 questionnaires were acceptable. 85 were completed by males (70.84%) and 35 by females (29.16%).

**Measures:** The previous research in e-service adoption related fields, different factors was studied that reviewed in previous sections. The measures of this research were adopted from previous studies to ensure the reliability. Therefore, 8 constructs were approved to be used as the main factors of model. Six constructs consist of subjective norm, perceived behavioral control, perceived risk, perceived usefulness,

trust on organization and trust on website were the constructs with formative measures and two of them - attitude and intention were constructs with reflective measures. Table 2 presents the measures have been used in the survey.

**Data Analysis:** Due to the complexity of research model, the Structural Equation Modeling (SEM) approach was used to evaluate the model. Recently, many researchers were interested in using PLS[28]. In addition, although PLS can be used for theory confirmation; it can also be used to suggest where relationships might or might not exist and to suggest propositions for later testing [29]. In this survey, two-step model testing approach was used to ensure that the constructs were meaningful and suitable for estimating study. Reliability and validity were two criteria to assess measurement. The PLS measurement (outer) model for reflective measure is evaluated by examining the convergent and discriminate validity of the indicators and the composite reliability of a block of indicators. On the other hand, the formative measures are evaluated on their substantive content by comparing the relative size of their estimated weights and by examining the statistical significance of their measure weight [29]. The convergent validity of the measurement model of reflective measure is assessed by the examining the correlation between the component/item measure scores and their construct scores in PLS [29]. The structural (inner) model is evaluated by R-square for the dependent latent construct. The stability of the estimates is examined by using the t-statistics obtained from the bootstrap resampling procedure with 300 resampling [29]. The structural (inner)

Table 2: The measures used in surveys

Construct	Measure		Reference
Attitude (ATT)	Better feeling	ABetter	Limayem 2003
	Enjoyable	AEnjoy	
	Good Idea	AGood	
	Like to use	ALike	
Intention (INT)	Int1	Int1	Limayem 2003
	Int2	Int2	
	Int3	Int3	
Perceived risk (PR)	Learning time	PRTIME	Featherman 2003
	Technological malfunctions	PRServ	
	Problem in travel plan	PRPlan	
	Losing Credit card information	PRlose	
	Hackers	PRHack	
Perceived usefulness (PU)	Saving Time	PUTime	Davis 1989 Featherman 2003
	Real-time decision making	PUREal	
	Reducing cost	PUCost	
	Customizable	PUCust	
	Availability of service	PUAvail	
Trust in website (TrustW)	Information about service	TInfor	Egger 1999 Lee 2000
	Using latest technology	TTech	
	Privacy and policy section	TPriva	
	Certificates	TCert	
Trust in Brand (TrustB)	Forums	TForum	Egger 1999 Lee 2000 Horst 2006
	CRM	TCrm	
	Image of company	TBrand	
	Company's nationality	TLocal	
Subjective norm (SN)	Family members	SNFamil	Limayem 2003
	News and reports	SNRep	
	Media	SNMass	
Perceived behavioral control (PBC)	Speed of loading website	PBCSpee	Limayem 2003
	The ability of using internet	PBCHelp	
	Website navigation	PBCNav	
	Website accessibility	PBCAcce	
	Fully described service	PBCDesc	

model is evaluated by R-square for the dependent latent construct Testing reliability and validity showed the all reflective measure are valid, but for the second group only one measure was invalid (AGOOD) and it dropped from dataset.

**First Group (Passengers):** Figure 2 shows the results of testing of the structural link of proposed model using PLS.

The overall results for the first survey showed that the theory of planned behavior provides good understanding of the factors affecting on e-ticketing adoption. The exogenous factors in the model explained 43.5 percent of intention to use e-ticketing adoption. Perceived risk and trust on organization explained 24.5 percent of trust on website and trust on website, perceived usefulness and perceived risk explained 30.4 percent of attitude.

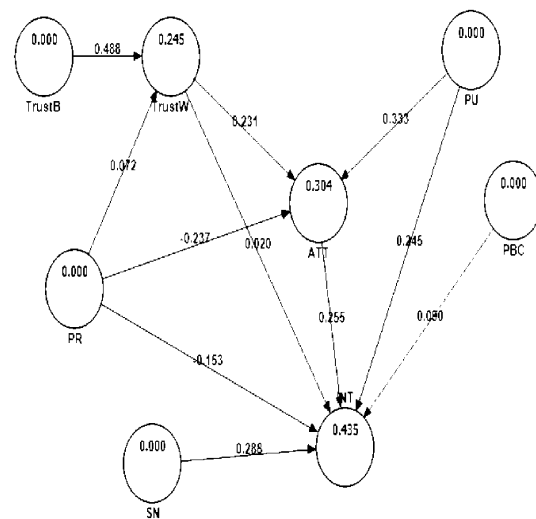


Fig. 2: Estimated result for the proposed model, (first group)

**Effects on Intention:** Comparing the presented results with previous TPB-based studies in IS acceptance, the proposed model has a good explanatory power of the current research model for behavioral intention to use. Among the relationships, subjective norm indicates more importance than attitude in determining behavioral intention to adopt or reject e-ticketing. Attitude significantly impacts customers intention to use e-ticket and perceived usefulness of using an e-service (e-ticket in this study) will increase intention of using e-service, thereby, supporting hypothesis 1. This finding is consistent with the findings of Karami who found a positive link between attitude and intention [21]. Subjective norm as social effect on adoption has significant impact on intention of using e-ticket and supports hypothesis 2. It's necessary to explore the factors affecting on subjective norm formation. Perceived behavioral control (e.g. self-efficacy and facilitating conditions) had not significant impact on intention of using e-ticket among inexperienced users and doesn't support hypothesis 3. Result consistent with the finding of Horst who did not find significant relationship between perceived behavioral control and intention, but it inconsistent with the finding of Karami who found a significant relationship between perceived behavioral control and intention of using service [21,30]. Not only perceived behavioral control did not have significant effect on intention, but also its formative measures (except PBCSPEED) have not positive effect on corresponding construct.

Two types of trust were considered in the present model: Trust on website and trust on organization. There was no significant relationship between trust on website and intention to use e-ticket and it did not support hypothesis 6. Perceived risk had a significant negative impact on intention of using e-ticket and therefore, supported hypothesis 7. This result showed that customers generally will be adopted e-service (e-ticketing) if they do not find it risky. It consists with the Featherman findings [15]. Ruyter suggested that lower risk levels increase trust, perceived quality and intention to use services and there is a negative relationship between risk and attitude[31]. while Ajzen mentioned in theory of planned behavior that consumers would be willing to transact if their risk perceptions were low[4]. Perceived usefulness had a significant impact on intention of using e-ticket and supported hypothesis 10. This result showed that customers will be adopted generally e-service (e-ticketing) if they find it beneficial. It was consistent with the findings of Limayem [9].

**Effects on Attitude:** Perceived risk, trust on website and perceived usefulness are three antecedents of attitude accounting for over 30.4 percent of the variance in this variable. Trust on website had significant positive impact on attitude toward using e-ticket suggesting that trust on website will increase the attitude toward using e-ticket and the results supported hypothesis 5. Perceived risk is another construct that has negative influence on attitude. The obtained showed that perceived risk reduces attitude toward using e-ticket. The result supported hypothesis 8. It was consistent with the finding of Ruyter and Changa and Kolsaker findings [31-33]. Perceived usefulness had significant effect on attitude toward using e-ticketing. It means that any positive outcome of a service will increase the attitude toward accepting the service. Accordingly the result supports hypothesis 11.

**Antecedent of Trust on Website:** Trust on organization and perceived risk accounted for over 24.5 percent of variance of Trust on website variable. Trust to the organization has the strongest positive effect on trust on website with the path coefficient of 0.488. As suggested by t-statistics and path coefficient values, trust on organization had a significant positive effect on trust to the website. Trust on organization had significant impact on customers' trust on to the website that provides e-service. This result supported hypothesis 5 and suggested that click-and-mortar companies would be successful in the world of e-service providers because of the effect of their image on customers. There was relationship between perceived risk and trust on website. Based on t-value which is 0.072 and  $p > 0.1$  we concluded that hypothesis 9 was not supported. This result was inconsistent with the Geffen findings. Although Kim and Prabhakar ignored the relationship between trust and perceived risk constructs, Jarvenpaa suggested that risk mediates the role between trust and the willingness to purchase ticket online [16,32-35].

**Effect of Formative Measures:** In the presented research we dealt with 5 constructs with formative measures (SN, PBC, TRUSTW, TRUSTB and PU). These constructs' measures should be evaluate separately to find out the effect of each measure. Formative measures of constructs existed in the presented model have different effects on the constructs that they should measure. To check the effect of the formative measures we should use their weights. Table 3 (sorted based on customer priorities) represents the effect of each formative measure on the constructs for the first group.

Table 3: Measure model - result for formative measures (Passengers)

Variable	Description	T-Statistics	
PBCSpee	Speed of loading of website	2.855	**
TCert	Certificates of important companies in website	2.848	**
PRLoos	Risk of losing credit card and account control	2.813	**
TLocal	Company's Nationality	2.773	**
PUCost	Reducing Searching Costs	2.760	**
SNFamil	The effect of family members	2.552	**
TBrand	Reputation of brand or company	2.479	**
PUSave	Saving Time	2.220	**
PRTime	Risk of learning time	1.946	*
SNRep	The effect of news and reports	1.876	*
TPriva	Privacy and policy section	1.806	*
TTech	Using latest technology in website	1.804	*
PUAvail	The availability of service (365 * 24*7)	1.766	*
PRPlan	Risk of making problem for travel plan	1.695	*

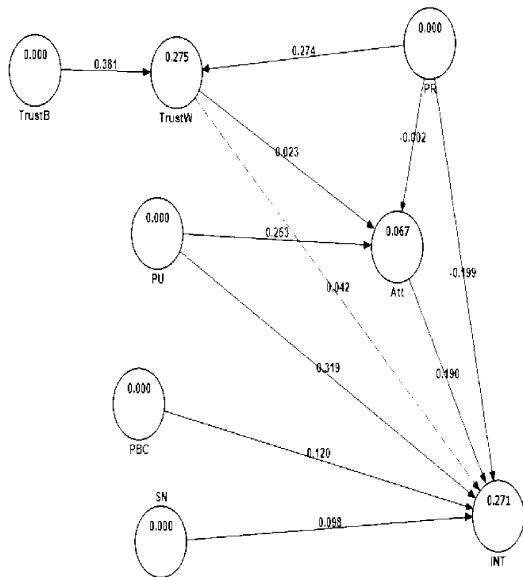


Fig. 3: Estimated results of the proposed model for IT Professionals

**The Second Group (It Professionals):** Figure 3 shows the results of testing of the structural link of the proposed model using PLS. The exogenous factors in the model explained 27.1 percent of intention to use e-ticketing adoption. In compression with the first group, although the situation of research was the same for both groups, the model’s explanatory power increased tangibly. Perceived risk and trust on the organization explained 27.5 percent of trust on the website and trust on the website, perceived usefulness, while perceived risk explained 0.067 percent of Attitude.

**Effects on Intention:** Intention to use e-ticket in this research was jointly predicted by attitude

(t-value=1.7939, p<0.05) perceived behavior control (t-value=1.4047, p>0.1), subjective norm (t-value=1.2293, p>0.1), trust on website (t-value=-0.4662,p>0.1), perceived risk (t-value=-1.8678,p<0.01) and perceived usefulness (t-value=3.1259,p<0.01) and these variables explained 27% of the variance on intention to use e-ticketing (R-square =0.271, Coefficient of determination). Among the relationships, perceived usefulness was a major influencer on individual’s behavioral intention to use e-ticket. Moreover, subjective norm and perceived behavioral control did not have significant impact on intention to use e-ticketing suggesting that for professional persons who work with internet, perceived usefulness and the advantages of using e-ticketing were the most important factors for accepting the service. The result supported hypotheses 1,7, 10 and did not support effect of trust on website(H6), subjective norm (H2), perceived behavioral control (H3) on intention.

**Antecedents of Attitude:** Perceived risk, trust on the website and perceived usefulness, as three antecedents of attitude, accounted for over 0.067 percent of the variance in this variable. This result shows that perceived usefulness (t-value=2.4678 and p<0.01) not only had significant effect on intention, but also has the strongest effect on attitude toward purchasing ticket online. The result supports hypothesis 11. Trust on website (t-value=0.2920 p>0.1) has no significant positive impact on attitude toward using e-ticket and did not support hypothesis 5. Perceived risk is another construct that has negative influence on attitude (t-value=-1.8678, p<0.01). Our finding also showed that perceived risk reduced attitude toward using e-ticket. This result supports hypothesis 8.

**Antecedent of Trust on Website:** The effect of trust on organization and perceived risk antecedents on trust to the website accounted for over 27.5 percent of variance of trust on website variable. Trust on organization has the strongest positive effect on trust on website with the path coefficient of 0.3815, also has significant positive effect on trust to the website. Trust on organization can provide sufficient image for the website. It also has significant impact on customers' trust on the website who provides e-service (path t-value=3.1116, p<0.01). This result support hypothesis 4 and suggests that brick-and-click companies would be successful in the world of e-service providers because of the effect of their image on customers. In the other words, the more an organization has a better image, the more people will trust on its website. There is a relationship between perceived risk and trust on website. Based on t-value which is 2.0976, it concluded that hypothesis 9 was not supported and perceived risk did not have significant negative effect on trust on e-service provider's website.

**Effect of Formative Measures:** The effect of each measure of Formative constructs (SN, PBC, TRUSTW, TRUSTB and PU) is represented in Table 6. For the second group,

the most important factors are, Speed of loading website, availability of service and talking with previous customers. Table 4 represented significant factors influencing IT professionals' adoption to use e-ticketing.

**Comparison of Results:** The final result of two groups are represented in Table 5. Comparison of these two set of results showed that the pattern of adoption changes when the level of IT-related knowledge increases. For both groups attitude toward using e-ticketing, perceived usefulness of using service and trust in organization are positive influencers for using e-ticketing and perceived risk is a negative influencer. IT professionals mainly focus on perceived usefulness which directly affect on their attitude and intention to using e-ticketing. Accordingly, it is assumed that the members of this group are the gateways of IT in the society.

The obtained results in the presented research approved this assumption. Subjective norm does not have a direct influence on IT professionals, but passengers will rely on subjective norm such as reports and news which mainly are published by IT professionals. The ability to control the behavior does not play an important role in accepting e-ticketing in Iran for both groups.

Table 4: Measurement model - result for formative measures (IT professionals)

	Path weight	T Statistics	Proposed effect	
PBCSpee	0.6753	3.4938	+	***
PUAvail	6003	2.49787	+	**
TForum	0.6010	2.4626	+	**
SNRep	0.8047	2.381	+	**
TCert	0.6197	2.2438	+	**
TCrm	0.4939	1.8063	+	*
TInfor	0.4194	1.7452	+	*

Table 5: Structural model results

H	Description	First Group		Second Group				
		Path coefficient	T-statistics	Path coefficient	T-statistics			
		R-Square : 0.435		R-Square : 0.271				
Effects on Intention								
H1	ATT	+	0.255	**2.391	S	0.19	*1.8	S
H2	SN	+	0.288	**2.910	S	0.098	1.23	NS
H3	PBC	+	0.090	1.099	NS	0.120	1.40	NS
H6	TrustW	+	0.020	0.335	NS	0.0418	0.47	NS
H7	PR	-	-0.153	*1.656	S	-0.1988	*-1.87	S
H10	PU	+	0.245	*2.231	S	0.3188	**3.13	S
Effects on Attitude		R-Square : 0.304	R-Square : 0.067					
H5	Trust on website	+	0.231	*2.140	S	0.0225	0.29	NS
H8	Perceived risk	-	-0.237	**2.418	S	-0.0016	0.01	NS
H11	Perceived usefulness	+	0.333	**2.738	S	0.2534	*2.47	S
Effects on trust on website		R-Square : 0.25	R-Square : 0.275					
H9	Perceived risk	-	0.072	0.660	NS	0.2740	*2.0976	NS
H4	Trust to the organization	+	0.488	***4.567	S	0.3815	**3.112	S

NS: Not supported, S: Supported, P-values : \*<0.050, \*\*<0.01, \*\*\*<0.001



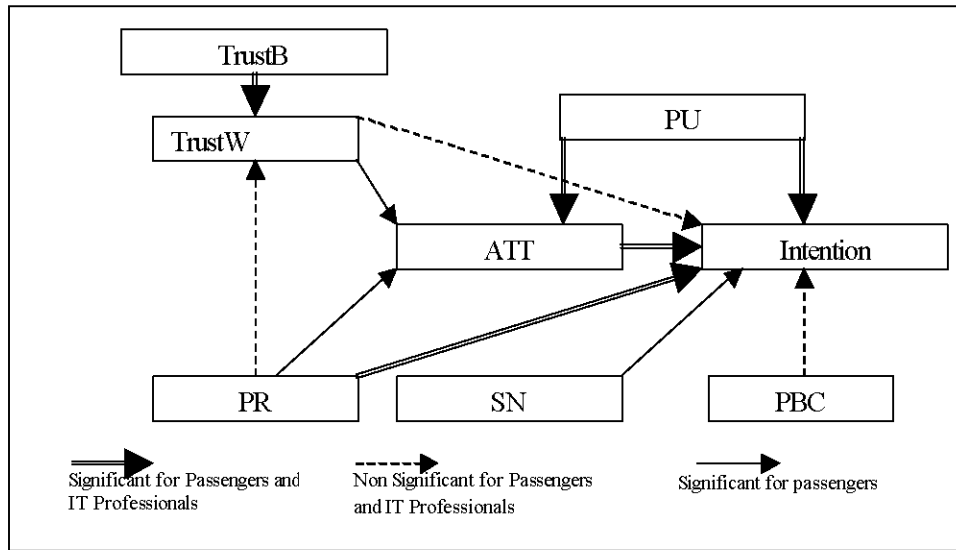


Fig. 4: The comparison of structural model for passengers and IT professionals

While perceived risk decreases intention to use e-ticketing, but it's more tangible for IT professionals. Studying of the attitude related factors showed that perceived usefulness increases attitude toward using e-ticketing, therefore it is more important for passengers than IT professionals. Although, trust on website and perceived risk influence passengers' decision to accept e-ticketing, but IT professionals did not find them important and for both groups trust on organization increased the trust on the website which was predictable. Table 5 shows this comparison. The results of the proposed model for passengers / IT professionals are shown in Figure 4.

## DISCUSSION AND CONCLUSIONS

**Findings:** The purpose of this research was to find the factors affecting e-ticketing adoption in Iran. Two different surveys were conducted to test the model which was mainly based on the theory of planned behavior. For the first survey, a group of passengers with at least minimum ability to use internet, which did not use e-ticketing before, were selected and for the second survey, a group of IT professionals were selected.

Although the main constructs such as trust, perceived risk, perceived usefulness and subjective norms were not difficult to evaluate, but our purpose was to find the factors that form these main constructs. It helps web designers and web developers, marketers and, at the same time, managers to realize what is important for customers and visitors and what makes their service beneficial for both groups of buyers and service providers.

The overall result for the first survey showed that Theory of planned behavior provides good understanding of these factors. The results also showed strong support for the positive effect of subjective norm and attitude on intention to use e-ticket and negative effect of perceived risk. With increasing the level of IT knowledge, the explanatory power of the proposed model decreased, similarly the results supported the effect of IT-related knowledge level and intention to use online services. It's predictable that with the rapidly growing rate of internet users and level of IT knowledge in Iran, the influence of subjective norm, trust on website and attitude toward using e-ticketing on acceptance of service will decrease and the effect of perceived usefulness of service will play more important role than before. Our finding also showed that IT trainings and working in internet related fields may change the people's view on trusting and perceived risk of using websites.

Passengers have many priorities when they want to use an e-service. They usually evaluate the service provider, website of the service provider, risk related factors, then, they consult with professionals and, at the end, they use the service. With increasing the level of IT knowledge, people mainly focus on what they will receive by using the service. They want the e-service to be fast and available from any location. Previous customers have good experience about using e-service. The service must be confirmed by important organizations in related fields. As a fact of globalization and living in a virtual world, the nationality of company does not play an important role for accepting or rejecting an e-service by IT professionals.

The last important factors for the second group were reports and news about the service.

**Managerial Implications:** We hope that this research would answer some industry-specific problems. Although e-ticketing in Iran is successful now, but still much work is needed to increase the rate of adoption of e-ticketing in this country. According to the result obtained in the present research, there are some solutions for increasing customers' adoption of using e-ticketing.

First of all, the managers and IT staffs of airlines should work on the structure of the website. Using the latest technologies to develop the website can be considered as a first step. The second step should be increasing the level of security and reliability of the service in order to receive the related certificates. Providing separated sections for customers' privacy policy when they purchase ticket online is another important factors that may increase trust on website. All these could be considered as important parameters for attitude toward buying ticket online.

The results showed that an organizational reputation has an important influence on the customers' attitude toward using e-ticketing (indirectly) and their trust on the website. This implies that the companies should communicate a strong "e-image" to their customers, using various communication channels. For this purpose, the companies also should try to leverage the existing brand equity. Furthermore, they can link their sites to credible reference sites to back up their good reputation or publish the best practice cases and offer a clear and comprehensive site highlighting the company's mission and identity [31]. At the same time, the effect of perceived usefulness on intention and attitude warns a critical point: when customers want to purchase online, they are able to compare all the offerings, prices, privacy policies, advantages and disadvantages of the provided services by different websites. Technologies and ideas can easily be copied by competitors and grab all the potential customers - or even the currents. The only way is to add special features to the service and use organization reputation. We found that reducing search cost is an important factor for customers to adopt e-ticketing. It shows that both web developers and service providers should design the process of finding and purchasing tickets simple and easy as possible in order to be acceptable by customers and made them satisfied to use the e-ticketing system. The obtained result showed that Iranian customers' will use a website that has better loading speed therefore:

- Web designers should work on simple graphical user interface (GUI). The surveys conducted by the Graphics, Visualization and Usability (GVU) Center at Georgia Tech have consistently shown that slow loading speed is one of the major complaints of web shoppers [36]. Gehrke and Turban suggested that designers use simple graphic and minimize the multimedia plug-in requirement and animation (Gehrke and Turban 1999).
- It should be a successful promotion program that airlines' employees in branches invite people to use e-ticket instead of waiting at counters to receive a paper-based ticket. It would not possible without providing essential equipments such as PCs or laptops for customers, internet connection and employees to help the customers to pass the process of buying e-ticket in branches with answering the questions or offering special brochure about e-ticketing.

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