Mobile Augmented Reality: In Reference to UTAUT Perspective in Relation to Smart Tourism

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Abstract

Purpose

Man's unending need for getting more, discovering for more insatiable thirst which gives the purpose to the tourist for tourism. Destination search is not limited with only brick and mortal websites through desktop computers with the increase acceptance of mobile device and enhanced used of innovation in wireless networks; mobile is used as a new way for destination search as mobile tourism. The aim of the study is to find out the impact on users in accepting or adopting the augmented reality with the use of mobile in tourism and destination search. A conceptual model is proposed, combining the two theories that is Unified Theory of Acceptance and Usage of Technology (UTAUT) with the Task Technology Fit (TTF) to study behavioral pattern and user behavior on any four dimensions: (1) Performance Expectancy (2) Effort Expectancy (3) Social Influence (4) Facilitating Conditions.

Design/ Methodology/ Approach

A Questionnaire was completed by a sample of 100 respondents in Lucknow, Uttar Pradesh. Both the methods UTAUT and TTF were combined to form a new model. A hypothesis is created according to the available literature.

Research Implication

The conceptual framework provides valuable facts for increased used of mobile for tourism and travel related needs of the tourist.

Findings

The result will try to explain that model account for 70% of the variance in Behavior Intention (BI) in relation to the actual use of augmented reality for mobile phones is about 50%.

Originality Value

With the increase in the use of mobile phones and vast availability of web 2.0 through the use of internet and the use of augmented reality mobile technology is increasing and customers are gathering diversified information in relation to real work and increased use of Augmented Reality in Tourism.

Keywords: Mobile Augmented Reality, UTAUT, TTF, E-Tourism, Behavior Identification

1. Introduction:

With the increase in the use of internet and ICT technology the use of augmented technology in the tourism sector is also increasing with leaps and bounds. Augmented Reality (AR) has increased the number of application usage in travel and tour purposes of the travelers and tourist in time of their destination search. The further study will help to understand the mobile technology with the amalgamation of Augmented Reality Technology (ART) to satisfy the needs of the tourist through an application on mobile phones (Olsson et al., 2011). The main aim of the research is to find out the behavior of the tourist/travelers regarding the use of Mobile Augmented Technology in tourism.

This paper examines two theories namely:

(1) Unified Theory of Acceptance and Usage of Technology (UTAUT)

(2) The Task Technology Fit (TTF) model.

Firstly, according to Venkatesh et al., 2003 the Unified Theory of Acceptance and Usage of Technology, UTAUT and UTAUT2 (Venkatesh et al., 2012), investigates the communication of users with the technology and subsequently finding their behavior and analysis of it. Secondly, according to Goodhue and Thompson, 1995 The Task Technology Fit (TTF) model examines how the consumer according to his task and degree of requirement select a particular technology and fit into that technology. This study aims at studying the two models that is UTAUT, UTAUT2 and TTF model. This study will provide the outline on the importance of Mobile Augmented Reality Technology and its uses and behavior impact on tourism and tourists of Lucknow region.

2. Literature Review:

2.1 Augmented Reality with the use of mobile in tourism and destination search:

With the increase use of web 2.0 and with the increase use of mobile phones, the shift of the technology to the mobile phones has created the use of Augmented Technology and the applications based programs helps the tourist to search the destination for their travel needs. Augmented reality enables the tourist to use live information about the destination they are searching for and get relatable information regarding the destination (Kourouthanassis et al.,2014), this not only help the tourist with guidance of the destination but the basic need of the traveler as accommodation, cabs, restaurants, locations of certain places and tourist attraction places. According to, Chen 2014, Augmented reality help the tourist with conducive information regarding the ATM's, car parking areas, metros, weather forecast of that particular area visited by the tourist. In the words of Trojan 2016, the convenient information which is provided by Augmented Reality application help the traveler to organize their trip with customization and personalization and according to their POI (Point of Interest). As web 2.0 and internet has become the most important part of users life, therefore Augmented Mobile Reality provide the consumers an opportunity not only to use the application for their support but also use the social media for sharing their destination needs, for searching information, for posting their views, sharing their pictures, and sharing related information and tips (Kounavis et al., 2012). According to, Lashkari et al., 2010, researchers have analyzed that Mobile Augmented Reality Technology has enabled the users to know about the surroundings and the environment of that tourist places for further help in their destination search. The Mobile Augmented Technology for Tourism helps the tourist to be more defined about their destination in a more creative way or in a creative approach (Richards 2011) and impromptu in their behavior (Wang et, al., 2012). Not everything is perfect with the Mobile augmented Technology, as limited use and availability of the appropriate content which the user require and unavailability of Visual Reality (VR), so user or traveler are unable to see through what they know in details about the surroundings and the prevailing environment (Yovcheva et al., 2012).

2.2 Technological Compliance:

The Unified Theory of Acceptance and Usage of Technology (UTAUT) formulated by Venkatesh et al., 2003, aims to explain the user's objective to search for information system for consecutive user behavior. The proposed theory explores that there are four constructs that are (1) Performance Expectancy (2) Effort Expectancy (3) Social Influence (4) Facilitating Conditions. Among the four proposed theories the first three are the direct determinative of user behavior and intention for using the augmented technology, whereas the fourth determinant has the direct relation with the intention of the user. In this the Gender, Age, Experience and Voluntariness act as a moderator to impact the four key construct on the user intention and behavior. Later Venkatesh et, al. 2012 also developed the Unified Theory of Acceptance and Usage of Technology 2 i.e., UTAUT2, assimilating the three other construct sybaritic motivation, monetary value and habit. The extended model of UTAUT, UTAUT2 has postulated more of the social network technology delivering network usage technology and makes it more user friendly from the consumer's point of view. Hedonic Motivation is an important part in consumer value and technological acceptance (Dickinger et al., 2006), with the addition of monetary value and habit of the user, the advance model UTAUT2 has become more prominent as with the passage of time and effort with motivation and monetary value and habit of the user has also been observed. It has been also observed that the use of habit and monetary value has also intensifies the user intention and behavior while using mobile internet for using Mobile Augmented Reality application for tourism. According to Goodhue and Thompson, 1995 The Task Technology Fit (TTF) model examines that how the consumer according to his task and degree of requirement select a particular technology and get fit in into that technology. It also depends on the user intention to adopt a particular technology or advances in technology until and unless it fit between their task and uses and doesn't hamper their performance or improve their performance (Junglas et al., 2008; Lee et al., 2007).

3. Conceptual Framework:

The Task Technology Fit (TTF) may define TTF as Performance Expectancy (PI), Behavioral Intention (BI) and User Behavior (UB) and UTAUT, UTAUT2 in Mobile Augmented Technology in Tourism. Under mentioned is the construct of both TTF and UTAUT, UTAUT2 model are elongated. In the words of Gebauer and Ginsburg (2009), observed that Task Technology Fit of using mobile technology is considered by task attribute combined by technology acceptance leads to following hypothesis.

H1: The impact of task attributes will be positive on Task Technology Fit

H2: The impact of technology will be positive with Task Technology Fit.

According to Schrier et al., 2010, Task Technology Fit (TTF) influences the user performance expectancy. It varies according to the user/tourist/ traveler demand for Mobile Application performance to be according to their will, less time taking, omnipresent, user- friendly to improve their performance.

H3: The Impact of Task Technology Fit will be positive on user's Performance Expectancy (PE)

Accordingly, a good Fit Technology will improve the User Behavior (UB) and Behavior Intention (BI), whereas if the task doesn't fit the user need so there will be negative User Behavior (UB) and Behavior Intention (BI) (Lee et al.,2007).

H4: The Impact of Fit Technology will be positive towards User Behavior (UB)

H5: The Impact of Fit Technology will be positive towards Behavior Intention (BI)

With the use of technology, user can take benefits of Mobile Augmented Technology as it is pervasive in application, immediacy, which enable the user to use the application without hassle and feel easy and saves time and effort (Zhou at al., 2010).

H6: The impact of Fit Technology will be positive on user Effort Efficiency (EE)

Performance Expectancy (PE) as the name suggest is the behavior of the user to expect from the Mobile Augmented Reality for tourism that they do the task as efficiently as the user expect the application to do and they ensure that the service is providing them the desired inputs for the task to be accomplished (Venkatesh at al., 2003).

H7: The impact of performance Expectancy (PE) on Behavior Intention (BI) will be positive on the user depending on their age and gender.

According to The Unified Theory of Acceptance and Usage of Technology (UTAUT), Effort Expectancy can be defined as the lack of difficulty faced by the user at time of defining the users Behavior Intention (BI) using the Mobile Augmented Technology for Tourism (Venkatesh at al., 2003). In addition to the above, Effort Expectancy (EE) also affect Performance Expectancy (PE). This is explained in a manner that every user has certain expectations with the Mobile Augmented Technology and if the application is good then the effort to use the application will be lesser in comparison to other applications.

H8: The impact of Effort Expectancy will be more and positive on Behavior Intention (BI) depending on the age and gender of the user.

H9: The impact of Effort Expectancy will be more and positive on Performance Expectancy (PE) depending on the age and gender of the user.

Social Influence (SI) as the names suggest that the user is influenced by the social group and the decision making is influenced by the environment in which the user entails, such as peer, family, colleagues and friends (Lopez-Nicolas et al., 2008). Their opinion enables the user to take the decision regarding the Mobile Augmented Reality Technology for tourism related searches (Zhou et al., 2010).

H10: The impact of Social Influence (SI) on Behavior Intention (BI) is positive depending on the age and gender of the user.

Facilitating conditions (FC) has a significant importance towards attitude and usage of user in terms of be behavior control and this will reflect the technical know-how of the Mobile Augmented Reality Technology in Tourism and the generating the knowledge, ability and resources (Venkatesh et al. 2003; Venkatesh et al. 2012). In a way the user behavior is accessed through user intention.

H11[1]: The impact of Facilitating Condition (FC) on User Behavior (UB) will be positive depending on the age and gender of the user.

H12[2]: The impact of Facilitating Condition (FC) on User Intention (UI) will be positive depending on the age and gender of the user.

While defining Hedonic Motivation, the user uses the fun and active part of the technology, where user is motivated through the pleasure that is provided by technology (Brown and Venkatesh 2005). Therefore, Hedonic Motivation is led as a prognosticator to use the mobile Augmented Technology in searching their destinations.

H12: The Impact of Hedonic Motivation (HM) on users Behavior Intension will be positive depending on the gender and age of the user.

Another construct of the theory is Price Value (PV) that is when the user takes the application above the monetary value and has a positive influence over the intention of the user (Venkatesh et,al. 2012). Usually the monetary value is considered as when the user uses the mobile augmented application, so for running that application the need for internet is very important and recharges of using internet pertains to monetary value.

H13: The impact of Price Value (PV) on User Behavior Intention (BI) will be positive depending on the age and gender of the user.

Habit is a construct that reflect the past experiences of the user and accordingly take the recent decisions (Venkatesh et,al. 2012). According to Kim and Malhotra (2005) user previous usage also help them to decide or accept the recent technologies and future use of it.

H14*1: The impact of Habit on User Behavior Intention will be positive depending on the age and gender of the user.

H14*2: The impact of Habit on User Intention (UI) on technology will be positive depending on the age and gender of the users.

According to, Venkatesh et.al, 2003, there is a theory for each and every model that user Behavior Intention (BI) will have positive impact on user Behavioral Technology (UBT).

H15: The impact of user Behavior Intension (BI) on user Behavior Technology (UBT) will be positive depending on the age and gender of the user.

4. Research Methodology:

The entire construct is available for the measurement from the Literature. The measurement was done using the seven point Likert Scale, ranging from Strongly Agree to Strongly Disagree. The questionnaire was filled by 100 respondents. When correlation between the two sample distributions of the first and second respondent groups was analyzed using the Kolmogorov-Smirnov (K-S) test, we found non-response bias (Ryans, 1974). In addition to this, common method bias was also examined using Harman's one factor- test (Podsakoff et al., 2003), and found to be of no significance in the data set.

5. Data Analysis and Findings:

The study is conducted to analyse the relationships defined in the research model, Smart PLS 2.0 M3 (Ringle et al., 2005) was used for three different reasons: (i) not all items in the data were distributed normally ($p < 0.01$ based on Kolmogorov-Smirnov's test); (ii) the research model had not been previously developed; and (iii) the research model was considered to be complex.

Table 2 presents the t-values, average variance extracted (AVE), composite reliability (CR) and Cronbach's alpha (CA). Since the reliability indicator unit loading must be greater than 0.7 (Henseler et al., 2009), the items FC4 (0.68), U4 (0.56), U5 (0.56), and U6 (0.66) were eliminated as they presented a lower value than that required and it also lacked statistical data for evidences. All items were statistically significant at 1% according to the analysis of the t-statistics values.

The constructs reliability is measured considering two indicators into account: (1) Composite Reliability (CR) and (2) Cronbach's Alpha (CA). According to Hair et al. (2010), CR analysis the reliability and internal consistency of each construct and degree at which the items constitute the mentioned constructs. CA approximates the reliability, taking into consideration the indicator inter-correlations and infer that all indicators are equally reliable (Henseler et al., 2009).

Finally, to test discriminant validity of the constructs the data present in Table 3 could be analyzed through two criteria: i.e. (1) Fornell-Larker measure and cross-loadings. The first theory states that the square root of AVE must be greater than the correlations between the construct (Henseler et al., 2009), while the another one necessitates that the loading of each indicator must be higher than all the cross-loadings (Chin, 1998). As conferred in Table 3, the square roots of AVE (elements exhibited in the diagonal) were greater than the correlation between each pair of constructs (elements exhibited off-diagonal). Moreover, our findings proved that the patterns of loadings exceeded the cross-loadings, consequently both measures were fulfilled. Regarding UTAUT2, not all direct constructs were statistically significant. Performance Expectancy (= 0.11; $p < 0.10$), Facilitating Conditions (= 0.15; $p < 0.01$), Hedonic Motivation (= 0.21; $p < 0.01$), and Habit (= 0.38; $p < 0.01$) were symbolic in defining Behavioral Intention to use Mobile Augmented Technology in tourism, whereas, Effort Expectancy, Social Influence and Price Value were not included. TTF had good indicator (= 0.14; $p < 0.01$) for determining Behavioral Intention to use Mobile Augmented Technology in tourism. It is also crucial to note that Effort Expectancy (= 0.40; $p < 0.01$) was proved to justify Performance Expectancy.

Table 3 summarizes the results of PLS estimation and findings revealed that not all of the constructs were statistically significant.

Task Characteristics (= 0.17; $p < 0.01$) and Technology Characteristics (= 0.49; $p < 0.01$) were statistically significant in determining Task Technology Fit (TTF). In addition, TTF was statistically significant in determining Behavioral Intention (0.14; $p < 0.01$) for Mobile Augmented Reality Technology in Tourism, and also demonstrated to have a positive effect on Performance Expectancy (= 0.37; $p < 0.01$). Technology Characteristics (= 0.66; $p < 0.01$) was also used to examine the Effort Expectancy. With reference to, UTAUT2, not all effects explicitly statistically significant. Performance Expectancy (= 0.11; $p < 0.10$), Facilitating Conditions (= 0.15; $p < 0.01$), Hedonic Motivation (= 0.21; $p < 0.01$), and Habit (= 0.38; $p < 0.01$) were significant in determining Behavioral Intention to use Mobile Augmented Technology for tourism, whereas Effort Expectancy, Social Influence and Price Value were not taken into consideration. Also, TTF had good indicators (= 0.14; $p < 0.01$) for determining Behavioral Intention to use Mobile Augmented Technology. It is also necessary to idenify that Effort Expectancy (= 0.40; $p < 0.01$) was confirmed to examine Performance Expectancy. Conclusively, all indicators classifying usage of Mobile Augmented Technology were confirmed, TTF =0.29; $p < 0.01$), Habit (= 0.31; $p < 0.01$) and Behavioral Intention (= 0.15; $p < 0.10$), except the Facilitating Conditions. Regarding UTAUT2 mediators (age and gender), they are unable to satisfy the relevant value (≥ 1.65; $p \leq 0.10$) to be statistically significant for the research model.

6.1 Theoretical Implications

Findings show that Facilitating Conditions (FC) have low consequences on the intention to use (H11^1) and possibly they are not influenced to user behavior (H11^2), compairing with UTAUT2 model. Though Fascinating, the result was a type of the study conducted by San Martín and Herrero (2012), the evaluation of which was how consumers from the rural area find their accommodation by tourist, when it was put in to consideration with respect to hospital services (Aggelidis and Chatzoglou, 2009) and resultant to which it was found that FC to influence behavior.

Such results also show the updated knowledge of tourists regarding technological innovations when using mobile applications and it make it easy for the user to use (Ukpabi and Karjaluoto, 2016). In coordination with this finding is the analysis of a correlation between TTF and UTAUT2 constructs, as Technology Characteristics strongly influence EE, suggesting that a higher use of technology and user friendliness in mobile application users powers facilitating conditions.

The results regarding EE, Social Influence (SI), and Price Value (PV) over Behavioral Intention (BI) suggest that respondents are not anxious with the use of Mobile Augmented Technology for tourism, nor they are concerned with the opinion of others – relatives, friends and colleagues – regarding these technologies or their price. Finally, considering the effects on Use Behavior, all constructs (TTF, Habit, and BI) were significant except FC, meaning that respondents are not concerned to adopt the technology. This further examines the fundamental nature of Mobile Augmented Technology in tourism, which still needs to be tested and examined when compared to acceptance of other mobile technologies (Han et al., 2013).

6.2 Practical Implications

Mobile Augmented Reality Technology in tourism service providers should devote themselves examining the different aspect of the market with the objective of understanding the consumers and by this they can understand the consumer and know how to gratify them. A tourist whose aim to enjoy the moment they have been for the destination will only need the particular and important information regarding theplaces and the destination they want to cover. Consumers in different stages of their lives think thoroughly regarding their demands and needs. It can vary to age group and gender and also according to their demographics. Moreover, it is necessary to understand that consumers are becoming more demanding, and an easier way to entertain and attract them towards the services provided by the service providers. The user feels more anxious towards (Hedonic Motivation – HM) the use of an application that is meant for their destination searches (Performance Expectancy – PE), and with technological developments (Facilitating Conditions – FC) an application can be helpful to a tourist in defining their road map towards their destination search. Prior to a trip, consumer always plan for the different things for beginning the trip (i.e., weather condition, transportation facility, how and where to book a hotel), or if they explore new ways, they will definitely need a navigation system. They will explore about the places to be visited, where to find the tasty food and how to explore that area (i.e. cultural guidance, restaurant advice, events in town). Sometimes, if the tourist is travelling outside the country will be needing translation tools that would be extremely useful. Finally, Mobile Augmented Reality Technology will be benefiting both suppliers and tourists as it will provide both efficacy and convenience.

6.3 Limitations and Future Research

The 100 responses provided a significant overview of Mobile Augmented Reality Technology for tourism acceptance. In addition, this study could be used to study other geographical areas. This will not only conduct segmentation analysis from a consumer perspective but also the defining different solutions according to attributes and anticipated benefits of using the technology.

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Constructs	Items		Source
	I find mobile internet useful in my destination search	PE1	
	I think that mobile internet enhances my chances of getting things that are important to me in my destination search	PE2	
Performance Expectancy (PE)			
	I think mobile internet would enable me to conduct destination searches	PE3	
	activities more quickly		
	Learning how to use mobile internet for destination search activities	EE1	
	its easy for me		
	My interaction with mobile internet in destination search activities is	EE2	
Effort Expectancy	clear and understandable		
(EE)	I find mobile internet easy to use in destination search activities	EE3	
	It is easy for me to become adept at using mobile internet	EE4	
	in destination search activities		
	People who are impacted by my behaviour think that I should use	SI1	Venkatesh et al. (2003),
	mobile internet in my destination search activities		

	People who are paramount importance to me think that I should use		Venkatesh et al. (2012)
		SI2	
	mobile internet in my destination search activities		
Social Influence (SI)	People in my peer who use mobile internet services		
	in destination search have more prominence than those who do	SI3	
	not		
	Having mobile internet services in destination search is a		
		SI4	
	Prestige symbol in my peer		
	I have the necessary resources to use mobile internet in		
		FC1	
	Destination search activities		
	I have the available knowledge to use mobile internet in		
		FC2	
Facilitating	Destination search		
Conditions (FC)	Mobile internet in destination search is compatible with		
	other technologies I use	FC3	
	I can get help from others when I have difficulties using	FC4	
	mobile internet during my destination search		

	Using mobile internet in destination search is fun	HM1	
Hedonic Motivation (HM)	Using mobile internet in destination search is funfilled	HM2	
	Using mobile internet in destination search is very captivating	HM3	
Price Value (PV)	Mobile internet for destination search is fairly priced	PV1	Venkatesh et al. (2012)
	Mobile internet for destination search is a good value for the money	PV2	
	At a prevailing price, mobile internet destination search provides a good value	PV3	
Habit (H)	The use of mobile internet in destination search has become a habit for me	H1	
	I am addicted to using mobile internet for destination search	H2	
	I should use mobile internet in destination search	H3	
	Using mobile internet in destination search has become Everyday activity for me	H4	
	I intend to continue using mobile internet in destination search	BI1	

	in the future activities		Venkatesh et al.
Behavioural Intention (BI)	I will always try to use mobile internet in my destination search	BI2	(2003), Martins et al. (2014)
	I am planning to continue to use mobile internet intermittently in	BI3	
	Destination search		

Table 1: List of al constructs

Construct	Item	Loading	*t*-Value	AVE	CR	CA
Task Characteristics (TKC)	TKC1	**0.9599**	97.98	0.93	0.96	0.92
	TKC2	**0.97**	151.17			
Technology Characteristics (TEC)	TecC1	**0.85**	33.58	0.80	0.94	0.92
	TecC2	**0.93**	93.00			
	TecC3	**0.93**	97.58			
	TecC4	**0.87**	48.57			
Task Technology Fit (TTF)	TTF1	**0.95**	118.04	0.89	0.96	0.94
	TTF2	**0.95**	88.98			
	TTF3	**0.93**	75.64			
Performance Expectancy (PE)	PE1	**0.89**	61.34	0.82	0.93	0.89
	PE2	**0.93**	83.36			
	PE3	**0.89**	54.45			
Effort Expectancy (EE)	EE1	**0.91**	65.55	0.83	0.95	0.93
	EE2	**0.91**	54.75			
	EE3	**0.90**	44.19			
	EE4	**0.92**	57.53			
Social Influence (SI)	SI1	**0.90**	63.86	0.71	0.91	0.87
	SI2	**0.92**	84.11			
	SI3	**0.78**	24.50			
	SI4	**0.75**	20.54			
Facilitating Condition (FC)	FC1	**0.84**	37.75	0.69	0.90	0.85
	FC2	**0.89**	63.20			
	FC3	**0.90**	83.01			

Hedonic Motivation (HM)	HM1	**0.96**	147.63	0.89	0.96	0.94
	HM2	**0.95**	127.41			
	HM3	**0.93**	83.80			
Price Value (PV)	PV1	**0.93**	68.77	0.90	0.96	0.94
	PV2	**0.96**	147.46			
	PV3	**0.94**	99.80			
Habit (H)	H1	**0.91**	85.50	0.77	0.93	0.90
	H2	**0.81**	36.94			
	H3	**0.86**	39.11			
	H4	**0.93**	126.25			
Behavioural Intention (BI)	BI1	**0.89**	56.50	0.82	0.93	0.89
	BI2	**0.89**	65.30			
	BI3	**0.93**	87.50			
Usage Behaviour (U)	U1	**0.89**	19.09	0.00	0.00	0.00
	U2	**0.86**	17.66			
	U3	**0.72**	11.24			

Table 2: The Loading measurement model of reliability measures (CR and CA) and AVE.

	Mean	SD	TKC	TEC	TTF	PE	EE	SI	FC	HM	PV	Habt	BI	U	Gender	Age
TKC	4.5	1.75	**0.96**													
TEC	4.64	1.49	0.59	**0.90**												
TTF	4.72	1.51	0.56	0.76	**0.94**											
PE	5.08	1.60	0.58	0.60	0.55	**0.90**										
EE	5.40	1.48	0.34	0.49	0.45	0.56	**0.91**									
SI	3.49	1.85	0.36	0.43	0.41	0.48	0.31	**0.84**								
FC	5.12	1.62	0.35	0.48	0.48	0.46	0.71	0.31	**0.83**							
HM	4.67	1.65	0.50	0.54	0.56	0.68	0.50	0.50	0.50	**0.95**						
PV	3.59	1.60	0.21	0.39	0.31	0.33	0.29	0.27	0.37	0.31	**0.95**					
H	3.68	1.85	0.64	0.59	0.56	0.69	0.47	0.52	0.50	0.68	0.32	**0.88**				
BI	5.04	1.70	0.53	0.61	0.59	0.67	0.54	0.45	0.57	0.71	0.31	0.76	**0.91**			
U	3.42	1.07	0.60	0.54	0.54	0.53	0.36	0.31	0.35	0.45	0.25	0.57	0.54	**NA**		
Gender	0.37	0.48	-0.08	0.02	0.08	0.02	0.00	-0.04	0.05	-0.04	-0.04	-0.01	0.03	-0.05	**NA**	
Age	30.09	8.93	-0.15	-0.10	-0.09	-0.03	-0.09	-0.06	-0.11	-0.05	0.02	-0.11	-0.05	-0.03	0.16	**NA**

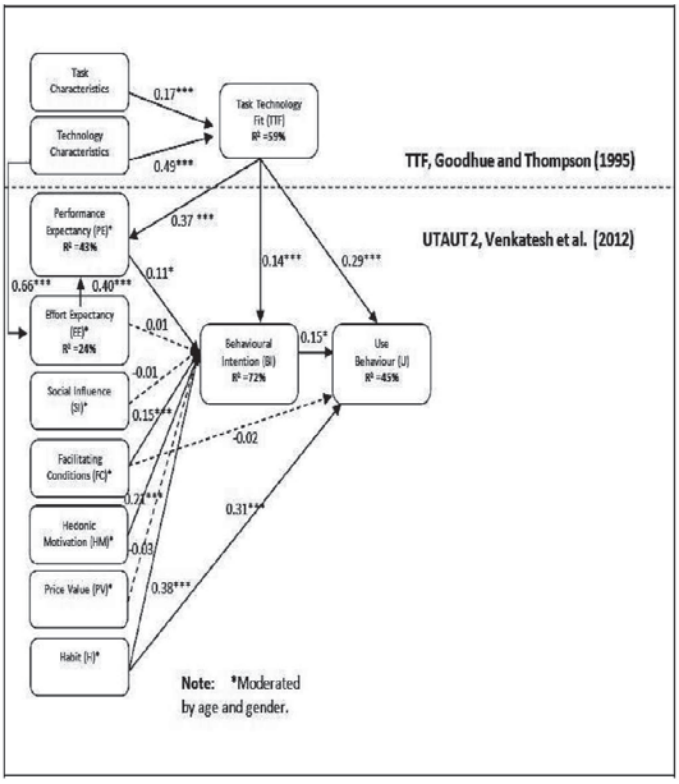

Figure 1: Research Model

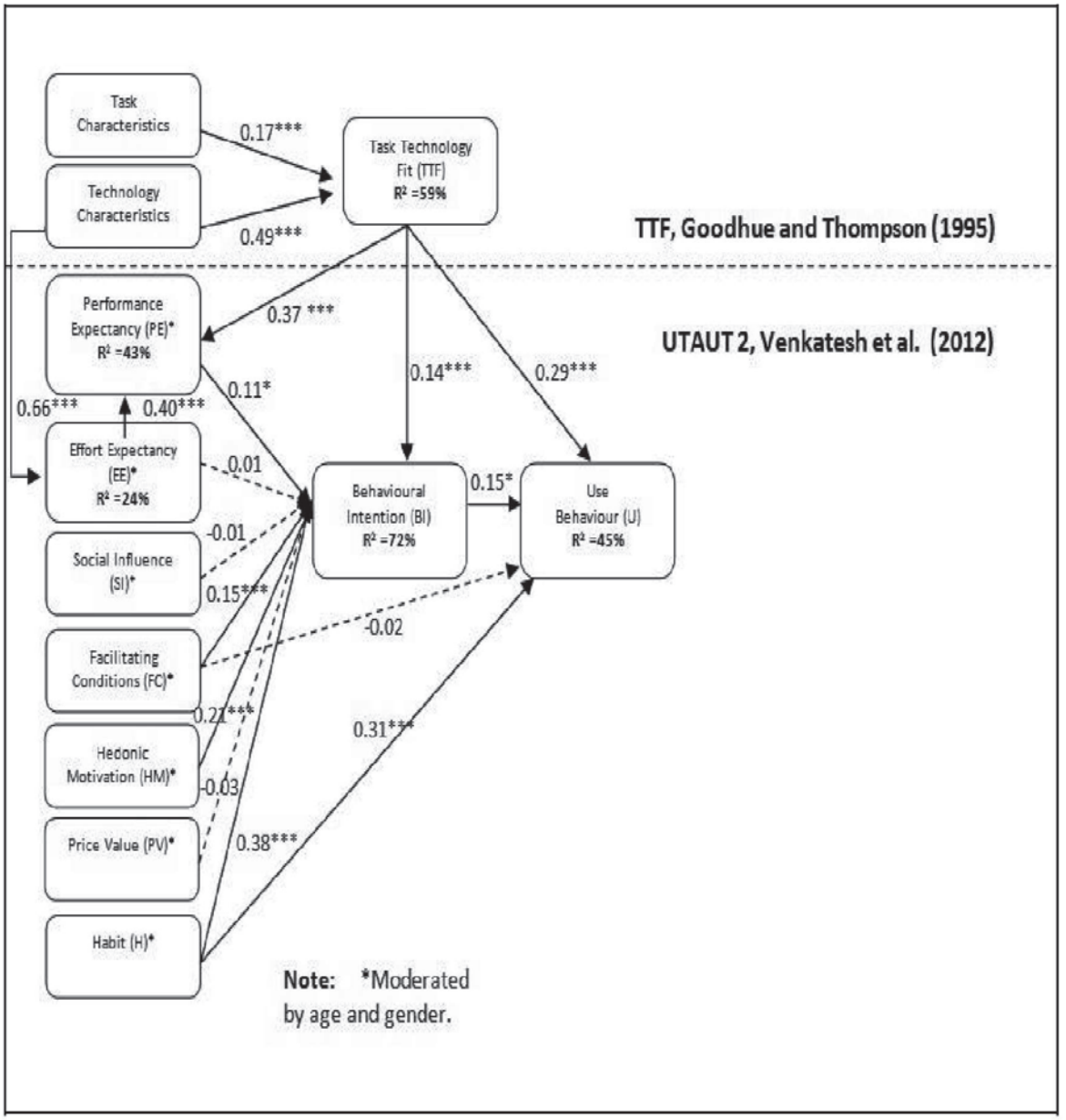

Figure 2: Resultant Model for TTF+UTAUT2 with path co-efficient and r-square

Hypotheses	Path	Findings			Moderators	Conclusion
		R^2		*t*-value		
	Task Technology Fit	59%				
H1	Task Characteristics		0.17	3.15 ***	None	Supported
H2	Technology Characteristics		0.49	8.50 ***	None	Supported
	Performance Expectancy	43%				
H3	Task Technology Fit		0.37	6.06 ***	None	Supported
H9	Effort Expectancy		0.40	6.37 ***	Age, Gender	Partially supported *
	Effort Expectancy	24%				
H6	Technology Characteristics		0.66	14.21 ***	None	Supported
	Behavioural Intention	72%				
H4	Task Technology Fit		0.14	2.80 ***	None	Supported
H7	Performance Expectancy		0.11	1.76 *	Age, Gender	Partially supported *
H8	Effort Expectancy		0.01	0.10	Age, Gender	Not supported

Figure 3: Resultant Model for TTF+UTAUT2 with path co-efficient and r-square

H10	Social Influence		-0.01	0.23	Age, Gender	Not supported
H11a	Facilitating Conditions		0.15	2.68 ***	Age, Gender	Partially supported *
H12	Hedonic Motivation		0.21	3.64 ***	Age, Gender	Partially supported *
H13	Price Value		-0.03	0.75	Age, Gender	Not supported
H14a	Habit		0.38	6.89 ***	Age, Gender	Partially supported
	Use Behaviour	45%				
H5	Task Technology Fit		0.29	3.82 ***	None	Supported
H11b	Facilitating Conditions		-0.02	0.27	Age, Gender	Not supported
H14b	Habit		0.31	4.75 ***	Age, Gender	Partially supported *
H15	Behavioural Intention		0.15	1.65 *	None	Supported

Table 4: Structural Model results for TTF + UTAUT2