Examining the Factors Impact the User's Continued Intention to Use IoT Services: The Case of Saudi Arabia

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Abstract
The Internet of Things (IoT) is evolving as a substantial growth in info technology, with the ability to enhance the living standards. However, to increase the IoT's value, accumulating additional individual info is needed, which precedes to anxieties about personal information and user privacy defilements. the purpose of this study is to provide a healthier understanding about the sustained meaning to usage IoT services by examining the factors that motivate user to usage IoT services and the factors that hindrances the adoption and sustained to usage IoT services in the context of Saudi Arabia. Specifically, this study will explore how perceived benefits, privacy concern, and personal barriers toward innovation affect the user intentions to continue to use IoT services. The findings of this study established an ordinary properly model. The study revealed that perceived benefits, personal barriers toward innovation, and privacy concern have a significant impact on continued intention to us IoT services.
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Introduction

Due to the rapid growth in connectivity of smart devices via the Internet, chances for Internet of Things (IoT) are booming (Kao et al., 2019). Furthermore, IoT has been acknowledged as existence share of the basis for industry 4.0 due to the prospect that it can cause excessive vicissitudes to the current businesses (Dutton, 2014). The Internet of Things (IoT) facilitate smart devices to communicate data with one another and share information between user and the device. Hsu & Lin (2016) defined Smart devices as, " Smart objects are seemed as a bodily embodiment with conversation functionality, owning a completely unique identifier, some fundamental computing competencies and a way to detect physical phenomena and to prompt actions having an impact on bodily reality" (p-516). The IoT is getting a considerable interest from different industries including home appliances, transport, intelligent building, manufacturing, energy saving, and healthcare, (Lee & Lee, 2015; Wang et al., 2018) which will meaningfully effect the welfare of human existences (Lee & Lee, 2015). IDC report (2016) estimates that more than 152 thousands IoT smart plans will be linked each miniature by 2025. According to Gartner (2018), 25 billion IoT smart plans will be in usage in 2021, and 64 billion

will be in use in 2025. Also, Mckinsey Digital (2015) estimates that IoT market has the potential to generate $4T to $11T in economic value by 2025.

The Internet of Things (IoT) is evolving as a substantial growth in info technology, with the ability to enhance the living standards. However, to increase the IoT's value, accumulating additional individual info is needed, which precedes to anxieties around personal info and user confidentiality defilements (Hsu & Lin, 2016). Thus, the continued growth of the IoT elevates major issues concerning the privacy of the user information that being accumulated from users' smart devices which may impact the penetration of IoT services (Kim et al., 2019). rendering to NETSCOUT's Danger Intelligence Report (2018), "Five minutes is The common quantity of time that it takes for an IoT tool to be attacked once connected to the Internet." Hence, These issues may affect the adoption and continued use of IoT smart devices.

Prior researches have examined various topics and issues related to IoT devices, Wang et al,. (2018) examined the benefits and risks associated with IoT plans adoption, Kim et al,. (2019) and Arias et al,. (2015) investigated the security and privacy concerns, Mani and Chouk (2017) examined the reasons behind the IoT resistance to use, El-Haddadeh et al,. (2019) inspected the perceived value of IoT devices. Mital et al,. (2018) inspected the IoT devices usage in the context of healthcare, Hsu & Lin (2016) studied perceived benefits on consumers' IoT continue to use. However, these studies have absorbed on assessing the basics of IoT acceptance and usage. Hwang et al. (2016) piercing out that the tests of acceptance IoT devices are hitherto to be completely traveled. In line with these studies, we consider continued to use IoT services to be interested by two groups of issues: Perceived benefits (NE) and Privacy Concern (PC).

In addition, Hsu & Lin (2016) indicated that Personal barriers such intrusiveness, tradition barriers, and technology dependence may impact the IoT smart devices continual usage, thus these factors need to be explored. These factors are crucial for innovation resistance when presenting new innovations to the market because they may raises complications to the adoption and continued to use an innovation (Mani & Chouk, 2017). Chen et al. (2018) indicated that tradition barriers - accepting a new innovation will change their lifestyle -has a positive impact on innovation resistance. The tradition barrier considered as a psychological barrier, hence, users' belief may struggle with the adoption of new innovation (Laukkanen, 2016). Also, smart devices possession and usage increase, technology dependence may increase (Mak et al., 2018), which discloses the amount of eras operators select to use any technology (Fan et al., 2018). Thus, technology dependence is a crucial measure to assess technology usage and the success of a technology (Fan et al., 2018). Intrusiveness anxieties based on users' belief that the facility breadwinner inappropriately intervenes hooked on their personal life. (Ahmed et al., 2020). For example, Cortes and Vela (2013) stated that " Perceived intrusiveness of mobile marketing might also result in a poor attitude in the direction of cell marketing or even rejection it." Thus, the impact of intrusiveness concerns will prompt an initial step towards understanding the IoT smart devices usage. (Ahmed et al., 2020).

Literature Review

Internet of Things

The notion of Internet of Things (IoT) is the composition and collaboration of devices, networks, sensors, and other smart objects that are connected (Bartlett, 2020). IoT refers to the massive numbers of smart objects that connected to each other wirelessly via the internet for accumulating and exchanging information. Gilchrist (2017) defined Internet of Things as "A system of interrelated computing gadgets, virtual machines, items, or human beings which are furnished with unique identifiers and the potential to switch information over a community without requiring human-to-human or human-to-computer interplay. (p. 5)." Specifically, Hsu and Lin (2016, p. 516) clear IoT keen devices as "As a physical embodiment with conversation capability, owning a unique identifier, some primary computing capabilities and a way to detect bodily phenomena and to prompt actions having an effect on bodily truth." The IoT keen devices are backed by applications that are offered by the manufacturer which facilitate the customer to monitor and manage the IoT smart device (Taylor et al., 2020).

Sharing Information in IoT can be conducted through smart devices that are armed by sensors, by gathering info from time to time and sharing it by additional plans or operators (Kim et al., 2019). The IoT services permit users to cooperate promptly with smart devices to increase living standards and work productivity (Hsu & Lin, 2016). However, the privacy concerns related to IoT devices arise from IoT applications regarding to the data that being collected and shared with others (Bartlett, 2020). The trade-off amid the two concepts clarifies the readiness or the intent to deliver individual info to IoT smart devices (Choi et al,.2018; Kim & Kim, 2018; Sun, Wang, Shen & Zhang, 2015). IoT smart plans and services markets are rising fast. Hence, connected investigation to the IoT domain is too evolving, nonetheless operator centric investigation on individual information in IoT domain is still missing (Shin, 2017).

Perceived Benefits

Perceived benefit describes the possibility that the act will produce a positive result (Wang et al., 2021). Perceived benefit comes in different ways such as financial rewards, more personalized experience, and communal advantage in reappearance for sharing individual info (Smith, Dinev, & Xu, 2011). When users believe that their actions will eventually produce benefits for them, the consequence can be anticipated to maintain the users' motivation for a long-time (Schunk and DiBenedetto, 2020). Thus, the benefits generated from a smart device or system happen to be a requirement for its use (Park, Park, & Lee, 2014). Chen and Lin (2015) stated that here is a optimistic association amid the apparent value of blogs and continuance meaning to usage them. To strengthen the understanding of users' intention to usage the IoT smart plans, apparent welfares may considered as a predictor. Thus, founded on the answers of these educations on the

relations amid apparent welfares and the continued intention to usage IoT services , we suggest the following hypothesis:
H1: Apparent welfares of IoT smart devices will must a optimistic result on sustained intention to usage IoT services.

Perceived Compatibility and Perceived Complementarity

Indirect network externality is a market-mediated influence that appears when there is a correlation amid client usefulness and balancing services or crops (Lai et al., 2007). Compatibility has been described as “the degree to which innovation is seemed to be consistent with an individual’s contemporary values, desires, and beyond reports. " (Moore & Benbasat, 1991, p. 195). Wang et al. (2018) stated that compatibility were originate to be definitely connected to apparent welfares of smart home devices. Gumussoy, Kaya, & Ozlu. (2018) found that the compatibility amid the topographies demonstrated by a smartphone and customers’ existence is a crucial element in mobile investment application. Furthermore, mobile compatibility is a test for the facility's breadwinner to accomplish mobile development with multi-screen interfaces (Shin & Biocca, 2017). In addition, Haya, Haris, and Nuraeni. (2021) found that the advanced the compatibility will result in improved the welfares of employing the e-banking facilities. Thus, we future that those who observe IoT smart plans as well-matched with the way they live are more likely to perceive the use of IoT smart devices as valuable. So, we propose the next theory:
H2: apparent compatibility will have an optimistic result on perceived welfares of IoT smart devices.
Apparent complementarity refers to "users who They can get many complementary functions and services inclusive of downloading videos and video games to improve their communication with different users" (Strader, Ramaswami, & Houle, 2007, P. 778). According to network effect theory, the accessibility of complementary products or services will enhance the perceived benefits of these products (Tseng and Teng, 2014). As the amount of pertinent complementary crops upsurge, the perceived value of using these products by users will increase. Hong, Cao, and Wang. (2017) studied the mobile social app and found that apparent complementarity have significantly positive effects on apparent welfares. So, we propose the next theory:
H3: perceived complementarity will have a positive result on apparent welfares of IoT smart devices.

Number of IoT Services and Perceived Critical Mass

Direct network externalities refer to the benefits produced by new users (Zhang, Li, Wu, & Li, 2017). Rendering to Hsu and Lin. (2016), in the context of IoT services, straight network externalities can be alienated into two kinds: number of facilities and apparent dangerous form. The offering and sharing of IoT facilities rely on the number of connected smart devices and services, the number of users which will have a straight result on apparent benefit (Kim et al.,

2019). So, the users base their usage decisions as the more IoT facility is obtainable, the additional valued and valuable it is apparent to be (Hsu & Lin, 2016). The second type of Direct network externalities in the context of IoT facilities is the perceived dangerous form. The term dangerous form is clear as the "Minimal adopters of interactive innovation to growth the fee of self-sufficiency" (Mahler & Rogers, 1999 p. 721). In the context of IoT, apparent dangerous form refers to as users' anticipation of how many other users will usage IoT services or services (Hsu & Lin, 2016). Which means that more users will use a exact technology or services, meanwhile they observe that the number of users by the new technology is growing (Kao et al., 2019). While IoT smart devices is in initial stage of novelty, attainment dangerous form is an significant amount for perceived benefit. So, we propose the next theory:
H4: Number of IoT services will have a positive effect on perceived benefits of IoT smart devices.
H5: perceived critical mass will have a positive result on perceived benefits of IoT smart devices.

Privacy Concern

Information confidentiality anxieties denote to users anxieties associated with the group and usage of individual info by manufactures and e-commerce (Son & Kim 2008). The stored information could be a simple heartbeat, or the location of the user as well as the personal lifestyle. For example. When users want to monitor their keen home plans finished other plans (e.g., smartphones) ended the Internet, they allow their personal information to be released to the manufacturers or the service providers without their' permission (Wang et al., 2018). Thus, privacy concern regarding to personal information occur. Too, since of the info that these devices can collect and store, and end up a prime target for attackers looking to achieve this records (Arias et al., 2015). Aforementioned anxieties are additional increased in relative to IoT domain since of the features of IoT facilities, which contain numerous requests that store and analyze user personal info (Kim & Park, 2020). Wuenderlich et al. (2015) stated that these privacy anxieties will grow as the growth of keen devices and facilities will increased. Therefore, we suggest the following hypothesis:
H6: Privacy Concern when using IoT smart devices determination have a negative result on sustained meaning to use IoT services.

Trust and Information Sensitivity

Kim et al. (2019) stated that Info compassion and faith are indicators of confidentiality danger. In the e-commerce works, faith is defined as " The perception that permits purchasers to willingly grow to be liable to on-line retailers after thinking about the characteristics of outlets " (Pavlou, 2003 p. 106). Tsourela and Nerantzaki (2020) indicated that trust is proven to be a crucial factor of usefulness, social meaning, and boldness. Trust is considered as the entry to technology receipt, mainly in the IoT field, as of your personal data is at a possible danger (Prayoga & Abraham, 2016). Users' trust may inspire their repeated meaning indirectly to usage the IoT facilities even though they resist to use it (Kim & Park, 2020). As we move to digitalized

the personal information and sharing it, the privacy concern of IoT service will increases. Tsourela and Nerantzaki (2020) stated that IoT plans and facilities require access to user's information, thus, they necessity be constructed below a "zero trust" paradigm (Tsourela & Nerantzaki, 2020). In addition, Yang, Chen, and Wei (2015) originate that apparent faith in mobile facilities has a negative impact on apparent danger, and has a positive impact on users' apparent welfares. Therefore, we suggest the following hypothesis:
In addition, Info compassion is the confidence that sure info strength consequence in the damage of confidentiality if exposed to others. Thus, trust and information sensitivity have a significant impact in determining information disclosing behavior (Kim et al., 2019).
H7: Trust will have a negative result on privacy concern when using IoT smart devices
H8: Information compassion will have a positive result on privacy anxiety when using IoT smart devices.

Personal Barriers Toward innovation

Prior research revealed that user innovativeness has a strong association with social meaning (Jackson et al., 2013). Although IoT's devices and services main objective is to make an person's life easier and better, there may be other concerns that might hinder its adoption and continued to use. Prayoga and Abraham (2020) found that IoT adoption is initiated on techno-psychological perceptions, thus, IoT adoption should be described in terms of it's affective, behavioral, and technical aspects. Furthermore, Mani and Chouk (2017) stated that psychological barriers occur when the innovation disturbs the user's beliefs such as tradition. In the technological era, the relationships between users and real usage are arbitrated by social intention (Rauschnabel et al., 2015). Therefore, we suggest the following hypothesis:
H9: Personal barriers will have a negative result on sustained intention to use IoT services.

Intrusiveness, Tradition Barriers, and Dependence on Technology

Intrusiveness, in psychological context means, is a state that the individual is awakened to reclaim the lost freedom (Brehm & Brehm, 2013). This concept can be employed to IoT smart devices context that when IoT smart devices' users are encountered with a highly intrusive services, they show reactance by declining to accept the service's permission request. Hérault and Belvaux (2014) found that intrusiveness has a negative impact on users' adoption toward smart devices. In addition, Ahmed et al. (2020) studied the prediction factors toward the adoption of IoT services and revealed that invasiveness container be an barrier to the usage of tradition numerical facilities. Thus, smart products might be seen as intrusive due to their ability to execute actions without having the user's authorization (Mani & Chouk, 2017). Based on the prior studies, intrusiveness is careful to must a negative influence on user behavior. So, we suggest the next theory:
H10: Intrusiveness will must a positive result on personal barriers when by IoT smart devices.

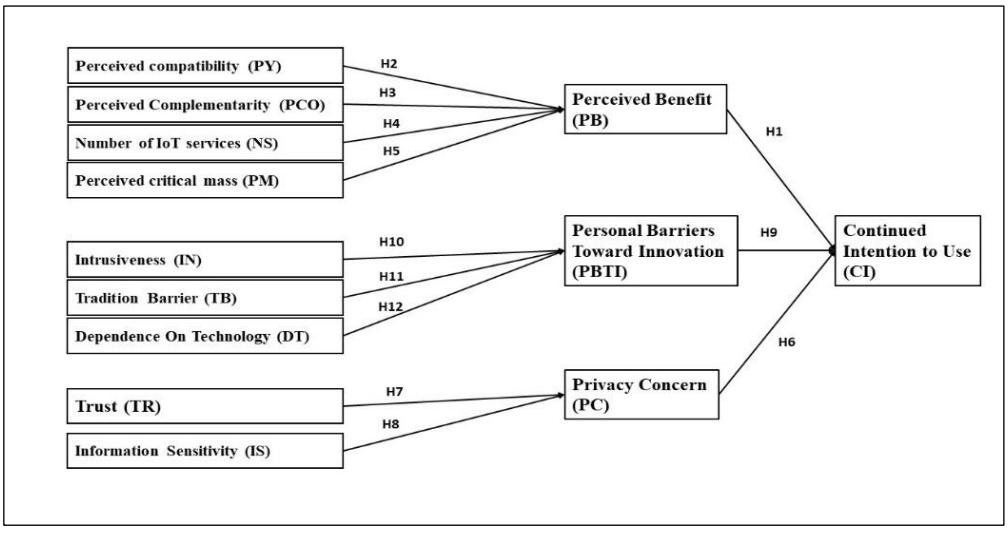
The custom barrier occurs when an novelty is unsuited with the user's current politics, morals, and prior involvements (Ram and Sheth, 1989). For example, new technological innovations digitized many services that has been conducting face to face. Thus, a essential for human interaction might dishearten users after continue using these new technological innovations (Evanschitzky et al., 2015). Thus, individuals may reject to use these new technological innovations because it goes against the need for human interaction (Mani & Chouk, 2017). Dotzauer & Haiss (2017) found that tradition barrier is a crucial issue that adversely impacts the meaning to accept mobile payment facilities. For example, Cheng et al. (2018) stated that tradition fence substantially cause the resistance to use e-wallet. From the prior studies we can conclude that if the practice of IoT keen plans needs a alteration in current philosophy or everyday procedures, users are additional motivated to grow confrontation to IoT smart plans. Therefore, we propose the next hypothesis:

H11: Tradition barrier will have a positive result on personal barrier when using IoT smart devices.

Dependence on technology defined as " Rely on a diffusion of hardware, tools, software programs, and processes to help resolve troubles or perform specific capabilities" (Fan et al., 2016. p. 4). Internet and technology devices have become an essential aspects in our live such as school, family, and which cause users to be dependent on these technology devices and programs (Mani & Chouk, 2017). Vickers, 2017) indicated that smartphones increase the users' dependency on technology. For example, De Souza (2017) noted that location-based services in smartphones establish a new paradigm on social dependency between the user and smartphones. As dependency on technology increases, users will be more addicted toward the use of these technology. Dhir et al. (2015) defined addiction as " A greater excessive shape of dependence and may be represented as a pathological situation that occurs because of the misuse and overuse of era." In the setting of IoT, we suggest the next theory:

H12: Dependence on IoT smart devices will have a positive result on personal barriers when by IoT smart devices.

Figure 1. Research model



Research Model

To investigate the causes that impact the continued meaning to use IoT services , this study used the identified constructs impacting perceived benefits, privacy concern, and Personal barriers that were developed in prior research (El-Haddadeh et al., 2019; Hsu & Lin, 2016; Mani & Chouk, 2017; Sadiq et al., 2021; Wang et al,. 2018) (see Fig. 1). The main constructs identified for perceived benefits were perceived compatibility, perceived complementarity, number of IoT facilities, and perceived dangerous form. For privacy concern, the main constructs identified were trust and information sensitivity. For personal barriers, the main constructs identified were tradition barrier, intrusiveness, and dependence on technology. Based on the literature analysis, perceived benefits, privacy concern, and personal barriers are the key elements for the user sustained meaning to usage IoT services .

Research Methodology

This study applied a quantitative research approach to empirically this study will explore how perceived benefits, privacy concern, and Personal barriers affect the user intentions to last to usage IoT facilities in the context of Saudi Arabia. A review tool were industrialized founded on authenticated events after prior works research (El-Haddadeh et al., 2019; Hsu & Lin, 2016; Mani & Chouk, 2017; Sadiq et al., 2021; Wang et al,. 2018). Altogether concepts were slow by a 7-point reply gauge. Then the researcher used the pre-test instrument as he lead a test on a example of 4 specialized professors and analyzed the answers he obtained. Next, the researcher sent the questionnaire to 600 individual participants and received 477 answers, with a response rate of 80%. Then, in the data-checking process to ensure its validity and validity of the analysis process, the researcher took steps to identify missing data, check for biases in the response group (when users tagged all elements with the same result), and outliers. This left 38 answers. Finally, the step of analyzing the data contains 439 complete answers. The researcher analyzed it using the PLS method using SmartPLS. Table 1 shows descriptive and demographic statistics for the study participants.

Table 1: Descriptive statistics and demographics of participants (N = 439)

Item	Frequency	Percentage (%)
Gender		
Male	**313**	**71**
Female	**126**	**29**

Age		
Under 18	3	0.6
18 – 24	312	71
25 – 34	31	7
35 – 44	60	13.6
45 – 54	26	6
55 – 64	8	1.8
65 or more	0	0
Education		
High School or less	70	16
Diploma	17	4
Bachelor	332	75
Master	14	3
Doctorate	7	2
Number of Years Using Smartphones		
Less than 5 years	31	7
5 – 10	187	42.5
11 – 15	126	29
16 – 20	62	14
21 – 25	23	5
More than 25	11	2.5

Results

The Model Measurement

A confirmatory factor analysis (CFA) was used vis the partial least squares (PLS) method to ensure the validity of the general model and to evaluate whether the events for the dormant variables were also dependable issues. This study usage Cronbach's alpha as an pointer for dependability assessment of all concept. Rendering to (DeVellis, 2016), a Cronbach's alpha (CA) over 0.7 is acceptable; the Cronbach's alphas of CI, DT, IN, IS, NS, PB, PBTI, PC, PCO, PM, PY, TP, TR were 0.671, 0.801, 0.885, 0.832, 0.731, 0.866, 0.857, 0.711, 0.824, 0.844, 0.794, 0.596, 0.758, indicating a high level of reliability for all constructs, except TP (Table 2). In adding, to measure interior dependability, composite reliability (CR) was usage, with the results demonstrating that, beside except TP construct, all constructs have tall internal dependability values beyond 0.70, as shown in (Table 2).

Table 2: Results of the reliability and validity tests (N = 439)

	Number of Items	Cronbach's Alpha	R^2	Composite Reliability	Average Variance Extracted (AVE)
CI	3	0.761	0.317	0.860	0.674
DT	4	0.801		0.868	0.623
IN	4	0.885		0.920	0.743
IS	5	0.832		0.881	0.598
NS	5	0.731		0.822	0.481
PB	5	0.866	0.624	0.903	0.651
PBTI	3	0.857	0.542	0.913	0.778
PC	2	0.711	0.271	0.874	0.776
PCO	5	0.824		0.877	0.587
PM	4	0.844		0.895	0.682
PY	4	0.794		0.879	0.708
TP	3	0.596		0.832	0.712
TR	3	0.758		0.860	0.671

Cross loadings were conducted to measure discriminant cogency (Hair et al., 2016), with resulting values demonstrating that discriminant cogency was met (Table 3). Average variance extracted (AVE) was conducted to measure convergent cogency (Hair et al., 2016). AVE values for all constructs were well above 0.50.

Table 3: Cross–loading (N = 439)

	CI	DT	IN	IS	NS	PB	PBTI	PC	PCO	PM	PY	TP	TR
CI1	0.733												
CI2	0.891												
CI3	0.831												
DT1		0.728											
DT2		0.846											

DT3		0.732											
DT4		0.842											
IN1			0.795										
IN2			0.883										
IN3			0.894										
IN4			0.872										
IS1				0.753									
IS2				0.770									
IS3				0.801									
IS4				0.766									
IS5				0.776									
NS1					0.616								
NS2					0.746								
NS3					0.664								
NS4					0.690								
NS5					0.743								
PB1						0.818							
PB2						0.854							
PB3						0.798							

PB4						0.779							
PB5						0.784							
PBTI1							0.903						
PBTI2							0.855						
PBTI3							0.887						
PC1								0.878					
PC2								0.883					
PCO1									0.739				
PCO2									0.773				
PCO3									0.730				
PCO4									0.804				
PCO5									0.783				
PM1										0.782			
PM2										0.818			
PM3										0.851			
PM4										0.851			
PY1											0.853		
PY2											0.849		
PY3											0.822		

TP1												**0.846**	
TP2												**0.841**	
TR1													**0.824**
TR2													**0.834**
TR3													**0.800**

The Model Estimation

The model was assessed via Smart PLS and demonstration of the R^2 criteria, by trail constant analysis (Hair et al., 2016). R^2 designates the quality of the physical model, and in this study its value proves the exogenous dormant variables' (DT, IN, IS, NS, PB, PBTI, PC, PCO, PM, PY, TP, and TR) shared belongings on the endogenous latent variable (CI). As exposed in Table 3, the R^2 of CI is 0.317 and thus is above the satisfactory verge of 0.25, showing that the general model is satisfactory (Hair et al., 2016).

A path constant is usage to evaluate relations amid concepts in a physical model (Hair et al., 2016). The consequences demonstrate seven paths with significant relationships (IN→ PBTI, IS → PC, PB→ CI, PBTI→ CI, PC→ CI, PCO→ PB, and PY→ PB) and four paths with no significant relationship (DT→ PBTI, NS→ PB, PM→ PB, TP→ PBTI, and TR→ PC), as exposed in Table 4.

Table 4: Results of PLS analysis (N = 439)

Structural paths in model	PLS path coefficient	Standard Deviation (STDEV)	P Values	Significance level
DT -> PBTI	0.001	0.043	0.990	NS
IN -> PBTI	0.699	0.041	*0.000*	***
IS -> PC	0.526	0.047	*0.000*	***
NS -> PB	0.046	0.061	0.450	NS
PB -> CI	0.498	0.046	*0.000*	***
PBTI -> CI	-0.085	0.042	*0.041*	*
PC -> CI	0.130	0.047	*0.006*	**
PCO -> PB	0.432	0.061	*0.000*	***
PM -> PB	0.108	0.070	0.121	NS

PY -> PB	0.345	0.056	*0.000*	***
TP -> PBTI	0.079	0.042	0.061	NS
TR -> PC	-0.009	0.043	0.824	NS

***p < 0.05, **p < 0.01, ***p < 0.001. NS, not significant.**

The p-value is usage to validate the meaning value in hypotheses testing. A small p-cost (commonly ≤ zero.05) signifies strong indication for removal the null hypothesis, representative that the hypothesis is reinforced. In this study, bootstrapping changed into usage to generate p-values for very paths, which for H1, H2, H3, H6, H8, H9 and H10 were underneath 0.05, representative that H1, H2, H3, H6, H8, H9 and H10 are reinforced.

Discussion

The purpose of this study was to measure the cogency of the version and to analyze the effect of perceived benefits, personal barriers toward innovation, and privacy concern on continued intention to us IoT services in Saudi Arabia. The answers of this study established an general decent model. Furthermore, of 12 hypotheses, seven were reinforced by the consequences of this study.

The study revealed that perceived benefits, personal barriers toward innovation, and privacy concern have a important influence on sustained intention to us IoT services, which was similar to what was anticipated. the findings verified that perceived benefits have an impact on the user's sustained intention to usage IoT facilities, which is similar to the finding in the literature (El-Haddadeh et al, 2019; Hsu & Lin, 2016). In addition, In decisive the important issues affecting users' apparent benefits for IoT facilities, the consequences authenticated two major factors: Perceived compatibility and perceived complementarity, which means that as the IoT services being consistent with the existing value, accessible, and provide many functions, user continued intentions to usage IoT services will be enhanced. Although, the study indicated that apparent benefits has an important influence on user continued intentions to use IoT services, number of using IoT services and perceived critical mass have no impact on apparent benefits. Thus, increasing the number of users by IoT services will not affect the user sustained intention to usage IoT services.

The results reveal that personal barriers toward innovation had fewer result on users' meaning to sustained intention to usage IoT services comparative to apparent welfares. The path after personal barriers toward innovation to sustained meaning to usage IoT services was significant, however, two out of three factors decisive the important issues affecting users' apparent benefits for IoT services which are tradition barrier and dependence on technology were insignificant and had no impact on personal barriers toward innovation. Thus, the findings indicates that users are less concerned about their tradition and dependence on technology when determining their meaning to usage IoT services. This findings were similar to the finding in the literature (El-Haddadeh et al, 2019; Hsu & Lin, 2016).

The results showed that privacy concerns must a positive impact on sustained meaning to usage IoT facilities. This results were verified by the significant impact by information sensitivity on privacy concerns. This means that users confidence that personal info strength consequence in the damage of confidentiality if exposed to IoT services providers. However, the effect differs by the kind of IoT services. IoT services offer useful modified facilities founded on user's individual info. For example, Kim et al (2018) who investigated the influence of IoT services on healthcare, keen home, and keen transport revealed that Info compassion has no important result on the readiness to deliver user's confidentiality info regarding their healthcare. Though, in the same study users were reluctant to deliver individual info when by smart home IoT services. one possible way to reduce information sensitivity is by offering the necessary assurances (El-Haddadeh et al, 2019) such as giving users the control of privacy settings (feng & Xei, 2019). In addition, the results indicated that trust has no important influence on confidentiality anxieties, which means that faith has no influence on increasing the continued meaning to usage IoT services. The literature has different findings regarding to the impact of trust Kim et al., 2018; Trojanowski and Kułak, 2017; Yang, Lee & Zo, 2017). One way to explain the different findings in the literature is that users representing different cultures may have different expectations, which determine the level of trust.

Limitations & Future Research

This study has several limitations. The first limitation was the survey investigate the users sustained meaning to usage IoT services in general. However, different IoT services may have different users perceptions toward using them. A future research would be to perform similar research using specific IoT services such as mobile payment and Google map and compare the results between both of them. Another limitation is that this study did not shelter very issues that might touch user's continued intentions to use IoT services. Future studies should consist of other factors, inclusive of pride, character of the trainer, real talent stage in using the device, and its effect on continued intentions to use IoT services. Last limitation is that this study was based on participants in Saudi Arabia. Thus, the simplification of the results to additional connected technology arenas wants to be understood cautiously. Future studies must be lead in additional republics to explore and compare the variances with diverse antecedents to this study findings.

Conclusions

This study was conducted to examine the user's sustained intention to usage IoT services. The answers of this study established an general decent model. Furthermore, of 12 hypotheses, seven were reinforced by the consequences of this study. The study revealed that perceived benefits, personal barriers toward innovation, and privacy concern have a important influence on sustained meaning to us IoT services, which was similar to what was anticipated. the answers confirmed that apparent benefits must an influence on the user's sustained meaning to usage IoT services. In addition, In decisive the important issues affecting users' apparent benefits for IoT

services, the results authenticated two major factors: Perceived compatibility and perceived complementarity, which means that as the IoT services being consistent with the existing value, accessible, and provide many functions, user continued intentions to usage IoT services will be enhanced.

The results showed that privacy concerns must a positive impact on continued meaning to usage IoT services. the results indicated that trust has no important influence on confidentiality anxieties, which means that trust has no influence on increasing the continued meaning to use IoT services. Unique way to explain the different findings in the literature is that users representing dissimilar cultures may have different expectations, which determine the level of trust.

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