Internet of Things (IoT) Adoption in Higher Education Institutions: An Empirical Study in Saudi Arabia Universities

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Abstract—The Internet of Things (IoT) may offer many advantages to academic institutions, but its adoption, like other technologies, may also result in unanticipated risks and the necessity of significant organizational adjustments. This study examines the adoption of IoT by Saudi public and private universities. It targets the students and teachers to measure their intentions and actual behaviors to adopt IoT in academic research. An exhaustive literature review is necessary to create the research hypotheses and classify the anticipated benefits and risks of the Internet of Things (IoT). For the purpose of gaining an understanding of the relationships between university and technology, the study offers a theoretical framework by developing research hypotheses. The study used a quantitative research design by administering the survey questionnaires among the students and teachers of 7 public and private universities in Saudi Arabia. The study received 338 filled responses from the survey questionnaires. The findings showed that perceived usefulness and ease of use significantly and positively influence the intention to adopt IoT. Additionally, perceived ease of use significantly and positively influences perceived usefulness. Finally, the study found that the intention to adopt IoT significantly and positively influences actual user behavior to adopt IoT in academic research. The study recommends that the internet of things (IoT) may then provide universities with a multitude of benefits. It is necessary to make modifications to the organization, its procedures, and its systems to cultivate capabilities and make sure that IoT is compatible with the objectives of academic institutions

Keywords- Internet of things (IoT), technology acceptance model (TAM), Saudi public and private universities, PLS-SEM

I. INTRODUCTION

The "Internet of Things" (IoT) is a rapidly expanding network of physical objects that are capable of communicating with one another and with other internet-enabled devices using the internet [1]. The Internet of Things enables us to control and manage the physical world closely [1]. The implementation of IoT could provide businesses with a wide variety of benefits, and the big data that may result from its implementation may provide businesses with the opportunity to gain valuable insights [2]. On the other hand, there is a plethora of dangers and factors, any one of which may possess significant and unintended consequences for businesses and their goals in employing IoT [3]. The Internet of Things may eventually become a component of the structures that limit the actions of individuals. For instance, implementing IoT for network access to enter education may improve efficiency; however, reducing the human aspect of hardworking in getting an education may introduce unanticipated risks, such as a higher prevalence of vandalism, necessitating the establishment of new organizational structures to reduce these risks. In the available literature, various benefits and risks for organizations are discussed; however, no analysis combines these benefits with the risks associated with them to provide an all-encompassing perspective. There is a need to confront the possibly unexpected effects of IoT adoption [4]. There is also a need to examine the impacts of IoT adoption on organizations systematically [5]. A little focus has been given to how the adoption of IoT may affect educational institutions either in terms of gaining benefits or minimizing uncertainties, which has led to unforeseen effects which have resulted in requests for further study in this area. Consequently, ripple effects have led to calls for further study in this way [6].

Implementing IoT creates a demand for new competencies, personnel with the necessary skills, and new organizational forms and procedures [6]. For instance, because of a lack of skilled staff [7] and restricted learning and educational options, figuring out and employing qualified employees can present enormous difficulties [8]. According to several researchers [7, 9, 10], many businesses resist new technology and change [10]. Additionally, the Internet of Things (IoT) makes it possible for devices to be connected to any entity at any time, from any location in the world, resulting in a dramatic shift in every facet of our lives. The evolution of the Internet of Things delivers comprehensive services across all industries, including manufacturing and education. People's interactions with and perceptions of technology are fundamentally changing due to the Internet of Things. The Internet of Things industry is just entering its formative years [11].

Applications of the Internet of Things are already being used in various fields, including medical services, smart retail, and education. Due to the pervasive nature of IoT devices, schools and academic institutions are considering incorporating them into educational activities to benefit students, teachers, and the total academic system. Implementations of the internet of things are currently being suggested to address various pedagogical methods, objectives, subject areas, and perceptions in the educational sector. Although it may be easy to envision specific applications of the Internet of Things (IoT) in educational settings, others are more complex. For instance, because the Internet of Things devices can track things, it stands to reason that IoT can be used to monitor students' attendance and classroom activities, as suggested by Alotaibi [12] and Jiang [13]. Nevertheless, monitoring can also be utilized in a variety of other contexts. Studies have concentrated on monitoring the students and devices in online education and virtual research labs [14, 15, 16]. The Internet of Things (IoT) is also used in education for more practical applications. For instance, Valpreda and Zonda [17], the authors proposed an Internet of Things-based system intending to enhance students' knowledge regarding learning and education in universities. There have been other studies [18, 19] conducted on the use of IoT to educate students with learning needs. Therefore, the study aims to examine the behavioral intentions and actual use of IoT in Saudi Arabian universities.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A. Adoption of Internet of things (IoT)

The learning that takes place in higher education institutions and the various components of rationale should be entirely mirrored by the Internet of Things (IoT) [20], and it should also eventually reflect the intent that is served by higher education. An individual-centered inspiration within ethical, academic, physical, and fashionable learning characterizes higher education. It is probable to see IoT underneath the premise that the higher education system must confirm the overall satisfaction for students, teachers, and the major universities that are under the identical scope of instruction and learning, where the sense of success is achieved for the students from the viewpoint of the education, and the teachers are happy with the method of the teaching. The Internet of Things surrounds local area networks (LANs) and pre-existing facilities for the general public that are housed within the education framework [21]. The Internet of Things adds new layers, such as the base coat and the response layer, making the total number of layers in this architecture five [20]. These layers are in addition to the perceptual layer, the internet layer, and the application server. The so-called "support layer" refers to the method of digitizing physical and virtual elements, which is the primary guide for developing the Internet of Things; without this link, the Internet of Things would not exist. Response Surface is the importance of evaluation status reply to the Internet of Things (IoT) agreement, with the end goal of making changes and alterations. The "Response level" (command and supervision layer) corresponds to the level of control exercised by the academicians (bosses/teachers), i.e., the level of order and cohesion that allows them to understand their "knowledge base" along the data and ultimately exert their authority over it [21].

B. Technology Acceptance Model and IoT adoption in Saudi universities

The adoption of IoT presents several opportunities for a company, including reducing costs, enhancing offerings and services, and preventing potential risks [22]. According to Coombs et al. [23], in the next 10 years, the Internet of Things is expected to become a significant IT-enabled company trend. The advantages of the IoT to buyers are significant [24]. According to Coombs et al. [23], IoT adoption and use are expected to become more common, making them essential parts of the Digital Infrastructure. Nevertheless, there is a need for additional research to investigate the capabilities that are required for the company to adopt the IoT.

The researcher has tried to determine the factors that users consider when deciding whether or not to accept IoT. For instance, the behavior of users is affected in all facets of their daily lives by the Internet of Things applications of Things [25]. According to a study by Acquity Group, only 4% of customers have Internet of Things devices installed in their homes, while 7% of customers have Internet of Things devices that they wear. According to Acquity Group [26], this demonstrated a need for more awareness and buying expenses on the part of customers regarding IoT. A slow rate of IoT adoption is another barrier to consumer use of the Internet of Things [27, 28]. Other barriers include cost, security, as well as ease of use. Ericsson [29] discovered that Danish companies' most significant obstacles to IoT adoption are the management of technological advances, the availability of competent individuals, and the resistance of employees. Other authors developed an Internet of Things acceptance model based on TAM concerning additional integrity, social influence, user-friendliness, and other variables. They found substantial support for the effects of perceptions of Usefulness, perceived ease of use, and perceived behavioral control on behavior intent to use the internet of things (IoT). In addition, Coandadiputra and Carissa [30] discovered that perceived ease of use affects perceived Usefulness. According to Coandadiputra and Carissa [30]'s findings, PU is the determining factor in the technological acceptance of new offerings in the retail sector of electric appliances. Kang et al. [31] used Technology Acceptance Model (TAM) integrating educational and learning factors to Research Variables affecting the adoption of IoT. They discovered that the sensor functional factors affected the adoption of mobile phones regardless of users. They noticed that Perceived Usefulness affects Behavioral Intentions directly and Perceived Ease of Use impacts Behavior Intention indirectly via impacting Perceived Usefulness.

Research conducted by Roy et al. [32] examines how poor urban societies adopt innovations based on the Internet of Things (IoT). They concluded that the innovation needed to deliver exceptional service was based on three advantages:

- the value that was using the scheme provided to the users
- the support that the users received

International Journal on Recent and Innovation Trends in Computing and Communication
ISSN: 2321-8169 Volume: 13 Issue: 1
***Article Received:** 25 November 2024 **Revised:** 12 December 2024 **Accepted:** 30 January 2025*

- the training that was provided to the users regarding how to use the scheme

Kahlert [33] noted that perceived usefulness and ease of use influence people's intentions to adopt Internet of Things (IoT) services, particularly in online retail. These factors predict user intentions and influence IoT technology acceptance. In a larger study of IoT adoption, Al-Momani et al. [34] introduced a conceptual framework that integrates perceived usefulness and ease of use with other critical influences. Their framework includes social influence, which accounts for peer and societal expectations, IT knowledge, which measures users' technical proficiency and familiarity with IoT systems, and safety and privacy concerns, which address users' concerns about data and interaction security in IoT environments. These factors create a more complete IoT adoption model, especially online retail. In India, Mital et al. [35] discovered that the utility and usability of IoT-enabled smart devices significantly impacted users' willingness to adopt them. This study showed that positive perceptions of ease of use and usefulness significantly increased users' openness to using IoT devices daily.

Kim et al. [36] investigated the effect of a smart refrigerator on the user's perceptions of its PU, PEOU, intention to use, and self-efficacy regarding its utilization. They discovered that the user who was given information about the visual cues had a more positive attitude toward the smart refrigerator regarding its PU, PEO, intention to use, and self-efficacy. According to the findings of Singh et al. [37], the ability of institutions to adopt IoT for various uses within their institution is positively affected by PEOU and the perceived usefulness of the technology. Kim [38] investigated the effects of social presence, perception expertise, other source identification, and expertise on individuals' attitudes toward the Internet of Things and the quality of transmitted data. He discovered that social existence and perceptions expertise were impactful mediators in human–Internet of Things interaction and that people responded to a new system differently depending on the cultural context in which they were raised. Furthermore, it is suggested that further research may examine the moderating impacts of various cultures in the context of the Internet of Things. Therefore, the study proposes the research hypotheses:

H1: Perceived usefulness significantly and positively influences intention to use of internet of things (IoT) in Saudi universities.

H2: Perceived ease of use significantly and positively influences intention to use of internet of things (IoT) in Saudi universities

H3: Perceived ease of use significantly and positively influences perceived usefulness of internet of things (IoT) in Saudi universities.

H4: Intention to use significantly and positively influences actual use of internet of things (IoT) in Saudi universities.

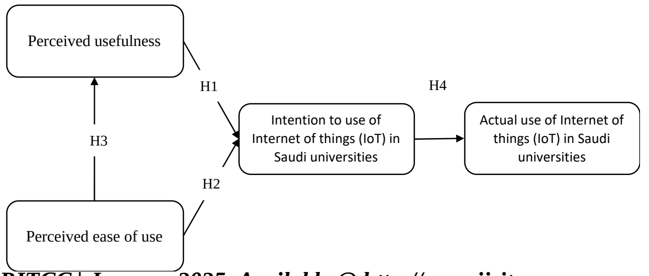

Figure1. Theoretical Framework

III. Research Methodloly

This study aimed to investigate users' behavioral intentions regarding the utilization of IoT technologies in Saudi universities. The research frameworks utilized for this study were the technology acceptance model by introducing IoT in Saudi universities. A scientific questionnaire survey was used to collect the data to evaluate the research aims. This method was administered by both personal delivery and email. In this study, quantifiable statistics, as well as an analysis of the data collected from questionnaires, were used. The questionnaire for the survey is divided into two parts. The first section contains information about the respondent's demographic background. The second portion of the questionnaire for the survey was developed based on the studies that were relevant and had been verified in the past. Item scales have been adapted to the higher educational institutions (HEIs) context in Saudi Arabia by making minor adjustments. The variables that will be examined in this particular research are as follows: perceived usefulness (six items), perceived ease of use (six items), behavior Intention (three items), and usage behavior (three items). The items that make up the TAM factors were taken from various previous studies Davis [39], Venkatesh et al. [40] and Venkatesh & Davis [41]. This section gathers the eagerness to use technologies related to the internet of things in the future. The questionnaires used a five-point Likert scale to assess responses, and participants were asked to select which items best represented their viewpoints (1=strongly disagree, 5=strongly agree). For the purpose of this study, the sample target consisted of university students and staff members who belonged to Saudi Arabia universities. 409 questionnaires were distributed among the students and faculty members of the universities. In order to guarantee that the responses of the respondents are kept private and are only used for research purposes, the questionnaires are given out concurrently with the emergence. Of the 338 questionnaires sent back, 71 were disqualified from the responses and could not be filtered because they lacked the necessary complete data. Finally, the study used 234 valid and complete survey questionnaires. After being filled out, the questionnaires were coded and entered into SPSS so that the data could be computed and analyzed further in Smart PLS. The statistical measures of reliability, connection, and regression analysis were utilized in the process of analyzing the data. For this purpose, the study Smart PLS.

A. Data Analysis

This study uses Smart PLS 4.0 to test the hypotheses and evaluate the model using the widely used partial least squares (PLS) technique, which is based on component-based structural equation modeling (SEM) [42]. Previous research [43, 44] noted that PLS-SEM was chosen because it confirms measurement construct reliability and validity. The PLS-SEM method is helpful because it produces reliable and statistically robust results even with smaller sample sizes and more complex models [45]. Study analysis is two-stage. First, an algorithm is run with

International Journal on Recent and Innovation Trends in Computing and Communication
ISSN: 2321-8169 Volume: 13 Issue: 1
***Article Received:** 25 November 2024 **Revised:** 12 December 2024 **Accepted:** 30 January 2025*

5000 subsamples to test construct validity and reliability rigorously. Next, the bootstrapping method is used with 5000 subsamples to assess independent variable effects on dependent variables. This approach follows Hair et al. [43], who recommended 5000 bootstrap subsamples to ensure robust inference, surpassing the valid inferences from the original dataset. The study tests variable relationships and model adequacy and accuracy.

The study uses IBM SPSS for frequency analysis of the 338 participants' demographic data, as shown in Table 1. This two-stage process follows PLS-SEM modeling best practices to ensure comprehensive, accurate, and statistically sound analysis.

Table 1 Demographic Information

		Frequency	%
Gender	Male	180	53.3
	Female	158	46.7
	Total	338	100.0
Ethnicity	Rural	180	53.3
	Urban	158	46.7
	Total	338	100.0
University sector	Public	125	37.0
	Private	213	63.0
	Total	338	100.0
Age	Up to 30	143	42.3
	31-35	165	48.8
	36 & above	30	8.9
	Total	338	100.0
University department	Social Sciences & Arts	44	13.0
	Science & Technology	83	24.6
	Media & Communicatio n studies	110	32.5
	Physics	101	29.9
	Total	338	100.0

IV. RESULTS

This study used SEM-PLS path modeling because it was best for handling non-normal data and a large sample size. PLS-SEM was chosen because of its flexibility in accommodating broad, non-rigid distributional assumptions and its use of non-parametric evaluation techniques focusing on prediction accuracy [42]. Taylor et al. (2008) noted that this method is particularly useful for analyzing complex indirect effects with multiple mediators. In situations where parametric assumptions fail, PLS-SEM works well. The PLS-SEM analysis and bootstrapping results were reported using the latest literature guidelines [47], ensuring robust and reliable conclusions. The study benefits from PLS-SEM's methodological strengths in handling predictive models and indirect relationship complexity by using this approach.

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A. Assessment of measurement model

Define To test the validity and reliability, the convergent validity was evaluated by analyzing the factor loadings of the construct-items and the extracted average variance (AVE). Item factor loadings and average variance extracted were examined to determine construct convergent validity. As per previous guidelines [47, 48], factor loadings for all four constructs were tested using the algorithm technique with 5000 subsamples. A loading above 0.70 indicates adequate convergent validity. All outer loadings of the final scale items met or exceeded this criterion in this analysis, ensuring that their inclusion did not reduce construct reliability or AVE values. All items remained in the model. All AVE values exceeded 0.50, confirming the constructs' convergent validity [42]. Additionally, discriminant validity was assessed using the Fornell-Larcker criterion [49]. The square root of the AVE for each construct was greater than the correlations with other latent variables, proving discriminant validity. Due to its low factor loading, one perceived ease of use item (PEOU6=0.604) was removed from the measurement model using a series of algorithms. Table 2 shows factor loadings, and Table 3 shows AVE values within acceptable thresholds, confirming the study's convergent validity. On the other hand, table 3 shows good Cronbach alpha and composite reliability because both criterions have good and higher values than 0.7.

Table 2 Factor Loading

	1	2	3	4
AU1	0.870			
AU2	0.839			
AU3	0.867			
ITU1		0.785		
ITU2		0.806		
ITU3		0.811		
PEU1			0.757	
PEU2			0.880	
PEU3			0.862	
PEU4			0.873	
PEU5			0.840	
PU1				0.706
PU2				0.851
PU3				0.791
PU4				0.803
PU5				0.775
PU6				0.763

Note: 1-Actual use of IoT in Saudi universities, 2=Intention to use of IoT in Saudi universities, 3=Perceived ease of use, 4=Perceived usefulness

Table 3 AVE Values

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Actual use of IoT in Saudi universities	0.822	0.894	0.737
Intention to use of IoT in Saudi universities	0.720	0.843	0.641
Perceived ease of use	0.898	0.925	0.712
Perceived usefulness	0.873	0.904	0.612

International Journal on Recent and Innovation Trends in Computing and Communication
ISSN: 2321-8169 Volume: 13 Issue: 1
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Each first-order construct was assessed using a reflective measurement model, which required evaluating both convergent and discriminant validity [45, 47]. To assess convergent validity, the reliability of each construct was examined by analyzing the significance of its factor loadings. The factor loadings for each item were significant at the p < .001 level, confirming their relevance. The study further validated the constructs' reliability and validity, demonstrating strong internal consistency through composite reliability and Cronbach's alpha, with both values meeting or exceeding the recommended threshold (Cronbach's α ≥ .70, composite reliability ≥ .70) [45, 47, 48]. In addition, the average variance extracted (AVE) for all constructs was higher than 0.50, which showed that convergent validity was achieved [49]. The study also made sure that all four constructs had high levels of composite reliability and Cronbach's alpha, which can be seen in Table 4. This makes the measurement model even more reliable and robust.

Table 4 Cross Loading

	1	2	3	4
AU1	0.870	0.519	0.501	0.602
AU2	0.839	0.474	0.492	0.579
AU3	0.867	0.504	0.522	0.626
ITU1	0.445	0.785	0.439	0.540
ITU2	0.494	0.806	0.396	0.427
ITU3	0.458	0.811	0.423	0.407
PEU1	0.439	0.477	0.757	0.485
PEU2	0.519	0.436	0.880	0.492
PEU3	0.528	0.395	0.862	0.473
PEU4	0.513	0.467	0.873	0.526
PEU5	0.480	0.427	0.840	0.480
PU1	0.427	0.297	0.349	0.706
PU2	0.586	0.519	0.501	0.851
PU3	0.533	0.471	0.487	0.791
PU4	0.585	0.463	0.506	0.803
PU5	0.585	0.405	0.422	0.775
PU6	0.555	0.498	0.450	0.763

Note: 1-Actual use of IoT in Saudi universities, 2=Intention to use of IoT in Saudi universities, 3=Perceived ease of use, 4=Perceived usefulness

The study assessed the discriminant validity of the constructs by comparing each indicator's loading on its corresponding first-order construct to its loadings on other constructs. The analysis confirmed that all first-order construct loadings exceeded 0.70, which is consistent with established benchmarks [42, 47]. Furthermore, each indicator had the highest loading on its respective latent variable when compared to other constructs, indicating the measurement model's discriminant validity [49]. The square root of the AVE for each construct, displayed along the diagonal of the measurement model, was consistently greater than its correlations with other constructs, indicating that the constructs have discriminant validity [42, 46]. Furthermore, discriminant validity was confirmed by evaluating cross-loadings, as shown in Table 3, and the Fornell-Larcker criterion, as shown in Table 5, which ensured the measurement model's robustness.

Table 5 Fornell-Larcker Criterion

	1	2	3	4
Actual use of IoT in Saudi universities	0.859			
Intention to use of IoT in Saudi universities	0.582	0.801		
Perceived ease of use	0.588	0.524	0.844	
Perceived usefulness	0.701	0.575	0.584	0.783

Note: Diagonal values represent the square roots of AVE and below values represent correlation coefficients

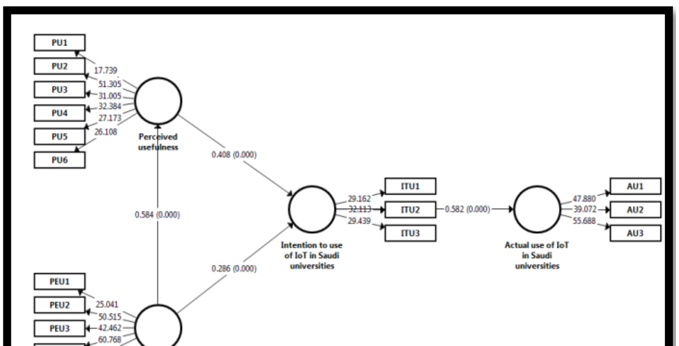
B. Assessment of the structural model

To evaluate the structural model, analyze the path coefficients and R² values to determine the proportion of variance explained by the model [42, 45]. The study specifically tested all of the model's hypothesized relationships, focusing on the mediating effects. The bootstrapping method, with 5,000 resamples, was used to generate coefficients and t-statistics, providing a reliable measure of the relationships [47]. The SEM-PLS path model considered both the direct effects and outer loadings of the latent variables. The magnitude of the path coefficients reflects the strength of the direct effects, and indirect effects are calculated by multiplying the coefficients along the mediational pathways [46]. To determine the statistical significance of these effects, the bias-corrected 95% bootstrap confidence interval approach was used, resulting in accurate and reliable results [46].

The study tested the research hypotheses using structural equation modeling (SEM). The study found that perceived usefulness has a significant positive impact on the intention to use Internet of Things (IoT) technology in Saudi universities, with a path coefficient of β=0.408, t-value=8.459, and p-value=0.000, supporting Hypothesis 1. Similarly, perceived ease of use significantly and positively influences the intention to use IoT in the same context, with a path coefficient of β=0.286, t-value=5.394, and p-value=0.000, supporting Hypothesis 2. Perceived ease of use significantly increased perceived usefulness, with a path coefficient of β=0.584, t-value=13.236, and p-value=0.000, supporting Hypothesis 3. The study found that the intention to use IoT had a significant positive impact on its actual use in Saudi universities (path coefficient = 0.582, t-value = 15.181, p-value = 0.000), supporting Hypothesis 4. Notably, perceived usefulness emerged as the most influential factor driving IoT adoption in Saudi Arabian universities, demonstrating its critical role in promoting the technology's use.

Table 6 Structural Equation Modeling

	Beta	t-value	P Values
H4. Intention to use of IoT in Saudi universities -> Actual use of IoT in Saudi universities	0.582	15.181	0.000
H2. Perceived ease of use -> Intention to use of IoT in Saudi universities	0.286	5.394	0.000
H3. Perceived ease of use -> Perceived usefulness	0.584	13.236	0.000
H1. Perceived usefulness -> Intention to use of IoT in Saudi universities	0.408	8.459	0.000



C. R2 and adjusted R2

Exogenous constructs' impact on explaining variance within endogenous constructs is measured by R^2 [44]. The R^2 value is interpreted using established thresholds: a R^2 of 0.25 or higher indicates a weak effect, 0.50 or higher suggests a moderate effect, and 0.75 or above reflects a strong effect [42, 45, 47]. According to Table 7, perceived ease of use accounted for 34.1% of the variation in perceived usefulness, indicating a weak effect. Similarly, the combination of perceived usefulness and perceived ease of use accounted for 38.5% of the variation in intention to adopt IoT in Saudi universities, indicating a weak effect. Furthermore, the intention to use IoT explained 33.9% of the variation in the actual use of IoT in Saudi Arabian universities, indicating a weak effect. Despite low R^2 values, the study found that each exogenous construct significantly explained the variance in the corresponding endogenous constructs.

Table 7 R^2 and Adjusted R^2

	R Square	**R Square Adjusted**
Actual use of IoT in Saudi universities	0.339	0.337
Intention to use of IoT in Saudi universities	0.385	0.381
Perceived usefulness	0.341	0.340

V. DISCUSSION

This study aims to examine the factors that affect users' acceptance of Internet of Things (IoT) technologies in public and private universities in Saudi Arabia (KSA). The findings lend credence to the validity of the model suggested to explain user behavior regarding the acceptance of technology within the context of Internet of Things (IoT) technologies. The study found that a user's perceptions of usefulness and perceived ease of use significantly and positively influence the user's intention to use Internet of Things (IoT) technology. The study proposed an extended TAM model wherein the intention to adopt the internet of things (IoT) in Saudi Arabian universities influences the actual adoption of IoT in Saudi Arabian universities. The study also found that these factors influenced users' intention to use the Internet of Things technology. Also, the national culture has an impact on how helpful something is perceived to be and how easy it is to use. This finding is consistent with the researcher's perspective, according to which perceived ease of use plays a very significant role and helps determine user behavior when it comes to the adoption of new technology. In a comparison of the regression coefficient of the forebears of the behavior intent to use IoT technology in Saudi universities, the perceived usefulness and perceived ease of use needs to perform the most impactful predictor than that of the factor of TAM model. This lends support to findings from earlier TAM research that found perceived usefulness and perceived ease of use to be the primary factors that determine whether or not a user will employ a given technology. While aspects of technology adoption IoT acting as a dependent variable are supplementary determinants, they have a less significant bearing on a person's intent to use. Even so, this is something that can be altered with the results of previous studies that witnessed a stronger effect of perceived ease of use and intention to use of IoT in Saudi Arabia universities. These findings show that this is something that can be changed. This disagreement points to the necessity of conducting additional research.

VI. CONCLUSION

This research aims to develop a suggested model for implementing internet-of-things (IoT) technology in Saudi public and private universities. A review of the relevant published material revealed that the research being conducted in this area is still in its infancy, indicating a pressing need for additional investigation. A new model for adopting Internet of Things (IoT) technologies has been developed based on the TAM and national cultures dimensions. The new model has created a better knowledge of the factors influencing the acceptance of Internet of Things systems in Saudi public and private universities. Due to the fact that these elements shaped unique cultures, norms, and common interests, they influenced and modified either positive or negative personal behavior. This was the case because these factors caused individuals to take action or make judgments regarding acts. This research provides a helpful and insightful perception of the key influential factors in users' intentions and behaviors concerning using Internet of Things technology. The study contributes to the existing body of knowledge by offering empirical support for a new model of Internet of Things adoption and bridging a gap in incorporating aspects of the intention to adopt IoT in the academic context into a new model. This person was the researcher. Supplying perceived ease of use and perceived usefulness as the predictor variables to intention to use IoT and actual use of IoT that explain and predict adoption of new advanced technologies, and then evaluating the TAM model after all of this has been done. This research may serve as a foundation for additional research in the future that may validate the model. This model can also assist businesses implementing Internet of Things technologies or the managerial staff from public and private universities in implementing effective Internet of Things based on organizational factors and other variables in the institution. In future studies, the researchers recommended carrying out more evidence-based research in this area and testing a new model for adopting IoT in various countries and settings.

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