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The Literature Review on UTAUT 2: Understanding Behavioral Intention and Use Behavior of Technology in the Digital Era

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ABSTRACT

In the rapidly developing digital era, technology has become an indispensable aspect of human life, and has penetrated various fields including work, education and lifestyle. Understanding behavioral intentions and technology use behavior has become an important endeavor for individuals and organizations. In response, researchers have developed a variety of models to analyze this behavior, with the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) as a comprehensive theoretical framework. This review investigates UTAUT 2 based on research published between 2012 and 2024, exploring its significance in deciphering the complexities of technology adoption in the digital era. By examining factors such as performance expectancies, effort expectancies, social influences, facilitating conditions, hedonic motivation, price values, and habits, this review explains their influence on individual decision making. In addition, it evaluates empirical research, addresses emerging criticism, and explores recent advances, aiming to contribute to the advancement of knowledge in technology acceptance. Despite its advantages, UTAUT 2 faces challenges such as contextual adaptation and predicting dynamic behavior. Nevertheless, the future of this technology remains promising as research efforts continue to refine and expand its application in navigating the ever-evolving digital landscape.

1. INTRODUCTION

In the rapidly developing digital era, technology plays an important role in most sectors of human life, including work, education and lifestyle. Behavioral intention and use behavior of technology is not just a choice, but is a basic need for individuals and organizations. To study this phenomenon, researchers have developed various models to analyze behavioral intention and use behavior of technology. One of the models that is the main focus in this research is the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) developed by Venkatesh et al. (2012) as an extension of the previous model. The purpose of developing this model is to present a more comprehensive framework for studying the factors that influence behavioral intentions and use behavior of technology.

The evolution of the digital era is changing the way individuals and organizations interact with technology. Electronic applications, the internet, and software applications have become an integral part of the lives of individuals and organizations, resulting in transformation in various aspects such as business, education, shopping, and social interactions. Behavioral intentions and use behavior of technology in this context are very important. Organizations that can adopt technology quickly and effectively have a significant competitive advantage. On the other hand, technology-savvy individuals have more access to career opportunities and personal development.

The importance of technology use has been widely acknowledged, that factors such as individual psychological aspects regarding the organizational context can influence an individual's decision to accept or reject technology. Facing these challenges, researchers need a good and integrated theoretical framework to better understand behavioral intention and use behavior of technology. This is where UTAUT 2 plays a very important role.

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The purpose of this article is to provide a comprehensive review of UTAUT 2 as a theoretical framework that supports understanding behavioral intention and use behavior of technology in the digital era. By exploring the importance of this model, this article aims to understand how factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, prive value, and habit influence individual thinking. In addition, this article will also evaluate related empirical research, examine emerging criticisms, and explore the latest research in understanding behavioral intention and use behavior of technology. Thus, it is hoped that this article can make a significant contribution to the development of knowledge in the context of technology acceptance, as well as facilitate further research and innovation opportunities in understanding how individuals and organizations adopt technology towards a more advanced digital era.

2. LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) is a theoretical model that has a key role in interpreting behavioral intention and use behavior of technology in the digital era. To understand this model more deeply, it is important to investigate the history and background of its development.

UTAUT 2 is an extension of the UTAUT model originally introduced by Venkatesh et al. (2003). This model is built on a number of previous technology acceptance theories, including Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Combined TAM and TPB (C-TAM-TPB), Motivation Model (MM), Personal Computer Utilization Model (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). The original UTAUT model identified four main factors that influence behavioral intentions and use behavior towards technology, namely performance expectations, effort expectations, social influence, and facilitating conditions. However, along with technological advances and the need for further exploration, UTAUT underwent development into UTAUT 2 in 2012.

The background to the development of UTAUT 2 emerged as a response to criticism of the initial UTAUT model. Although UTAUT has become a popular theoretical framework for understanding behavioral intentions and use behavior of technology, criticism of the model has prompted further development. These criticisms include the need to consider broader contextual factors, such as organizational culture and environment, and explore these factors further. Apart from that, the complexity of behavioral intention and use behavior along with the rapid development of technology has resulted in behavioral intention and use behavior becoming increasingly complex and varied. Users not only consider utilitarian factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions, but also hedonic and social factors in determining whether to adopt or use a technology. In dealing with this complexity, a more comprehensive and integrated theoretical framework is needed in understanding behavioral intention and use behavior of technology. UTAUT 2 was developed as an effort to overcome this challenge by integrating new factors such as hedonic motivation, price value, and habits (Venkatesh et al., 2012). Thus, the development of UTAUT 2 is an answer to the need for a more precise and comprehensive theoretical framework in understanding behavioral intention and use behavior of technology in an increasingly complex and rapidly developing context.

Understanding the history and context of this development will provide a deeper understanding of the transformation of the UTAUT model to UTAUT 2, as well as the reasons behind the expansions and modifications implemented to the model. With a better understanding of this context, we can appreciate the value and relevance of UTAUT 2 in understanding the phenomenon of behavioral intention and use behavior of technology in today's digital era.

Table 1. Comparison of UTAUT 2 with The Previous Model

No	Model	Main Focus	Difference	Usage
1	*Theory of Reasoned Action* (TRA) Source: Fishbein dan *Ajzen (1975)*	TRA focuses on two main variables: Attitude and Subjective Norm. Attitude refers to an individual's evaluation of the behavior they want to carry out, while Subjective Norms refer to the individual's	TRA does not include behavioral control factors like those in UTAUT 2, such as ease of use and social support. This means that TRA does not consider technical and environmental factors that	TRA has provided a foundation for the development of further technology acceptance models. However, due to its limitations in considering behavioral control factors, TRA has

No	Model	Main Focus	Difference	Usage
		perception of the social pressure they feel to do or not to do that behavior.	can influence technology usage behavior.	been replaced by more complex models such as the Theory of Planned Behavior (TPB) and UTAUT 2. Nevertheless, the concepts introduced by TRA remain an important basis in understand human behavior.
2	*Theory of Planned Behavior (TPB)* Source: Ajzen (1991)	TPB expands the concept of TRA by adding perceived behavioral control variables. Apart from Attitudes and Subjective Norms from TRA, TPB also includes Perceived Behavioral Control, which is an individual's perception of his or her ability to carry out that behavior.	The main difference between TPB and UTAUT 2 is that TPB is still limited to variables that are more psychological in nature and does not take into account technical and social factors that are considered important in UTAUT 2. In TPB, factors such as social support and technical factors such as convenience the use of technology does not get as much attention as it does in UTAUT 2.	TPB has been used in a variety of contexts, including the use of technology, to predict individual behavior. Although it has made valuable contributions to understanding human behavior, the TPB has also been replaced by more complex and integrated models such as UTAUT 2. Despite this, the TPB remains an important basis in human behavior research
3	*Technology Acceptance Model (TAM)* Source: Davis (1989)	The main focus of TAM is to understand the acceptance and use of technology by emphasizing two main variables: Perceived Usefulness and Perceived Ease of Use. Perceived Usefulness refers to an individual's belief that using technology will improve their performance or work performance, while Perceived Ease of Use refers to an individual's belief about how easy it is to use the technology.	Although TAM and UTAUT 2 have a similar focus on understanding technology acceptance and use, the main difference lies in the scope of factors considered. UTAUT 2 expands the TAM concept to include broader social and contextual factors, as well as moderating variables such as prior experience and attitudes, which are not explicitly considered in TAM.	TAM has been used widely in various contexts, including business, education, and information technology, to predict use behavior of technology. Although still used in research and practice, TAM has been replaced by more integrated and comprehensive models such as UTAUT 2, which provides a deeper understanding use behavior of technology.
4	*Combined TAM and TPB (C-TAM-TPB)* Source: Taylor dan Todd (1995)	C-TAM-TPB is a combination of the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), which combines concepts from both models to provide a more holistic understanding of technology usage behavior. These include TAM variables such as Perceived Usefulness and	Although C-TAM-TPB attempts to combine elements from TAM and TPB, the main difference with UTAUT 2 is that C-TAM-TPB is still limited to variables that are more psychological in nature and does not take into account the technical and social factors that are considered important in UTAUT 2.	C-TAM-TPB has been used in several studies to predict use behavior of technology. However, due to limitations in the range of factors considered, this model may not be as comprehensive as UTAUT 2 in understanding use behavior of technology. Some researchers may prefer UTAUT 2 because of its overall broader integration of factors in the

No	Model	Main Focus	Difference	Usage
		Perceived Ease of Use, as well as TPB variables such as Attitudes, Subjective Norms, and Perceived Behavioral Control.		context of technology behavioral intention and use behavior.
5	*Motivational Model (MM)* Source: Davis *et al.* (1992)	The main focus of the Motivational Model (MM) is to understand individual motivation in adopting and using technology. This model emphasizes the role of intrinsic and extrinsic motivation in use behavior of technology .	The main difference between MM and UTAUT 2 is in their approach to behavioral intention and use behavior of technology. MM focuses more on individual motivation as the main factor influencing behavior, while UTAUT 2 places more emphasis on various psychological, social and contextual factors that influence behavioral intention and use behavior of technology.	MM has been used in research to understand individual motivation in a variety of contexts, including use behavior of technology. However, due to its narrower approach in considering other relevant factors such as ease of use and social support, MM may not be as comprehensive as UTAUT 2 in understanding use behavior of technology. Some researchers may choose UTAUT 2 because of its broader coverage of the various factors that influence use behavior of technology.
6	*Model of Personal Computer Utilization (MPCU)* Source: Thompson *et al.* (1991)	The primary focus of the MPCU is to understand the factors that influence an individual's use of personal computers. This model emphasizes characteristic variables such as individuals, computer characteristics, and environmental factors that influence use behavior of computer.	The main difference between MPCU and UTAUT 2 lies in the cover and approach. MPCU focuses more on personal computer use and the individual characteristics that influence that use, whereas UTAUT 2 is broader in its coverage, considering a variety of psychological, social, and contextual factors that influence the behavioral intention and use behavior of technology in general.	MPCU has been used in research to understand personal use behavior of computer by individuals. However, due to its more limited focus on personal computer use and lack of inclusion of broader social and contextual factors, MPCU may not be as comprehensive as UTAUT 2 in understanding use behavior of technology in general. Some researchers may choose UTAUT 2 because of its broader coverage and more integrated approach to understanding behavioral intention and use behavior of technology.
7	*Innovation Diffusion Theory (IDT)* Source: Rogers (1995)	IDT focuses on the spread of innovation in society and how innovation is received and adopted by individuals or groups. This theory examines the process of how innovation is initiated, accepted, and used by members of society.	The main difference between IDT and UTAUT 2 is in their approach and focus. IDT focuses more on the broad process of innovation diffusion, including factors such as communication, socialization, and social learning, whereas UTAUT	IDT has been used in various contexts to understand how innovations are received and adopted by society, including in technological contexts. However, due to its broader focus and lack of inclusion of more specific technical and

No	Model	Main Focus	Difference	Usage
			2 focuses more on the behavioral intention and use behavior of technology specifically, considering various psychological, social, and contextual factors that influence use behavior of technology .	psychological factors, IDT may not be as comprehensive as UTAUT 2 in understanding use behavior of technology in depth. Some researchers may choose UTAUT 2 because of its more specialized coverage and more integrated approach to understanding behavioral intention and use behavior of technology.
8	*Social Cognitive Theory (SCT)* Source: Compeau and Higgins (1995)	SCT focuses on the interactions between individual factors, behavior, and the social environment. This theory examines how individuals learn through observation, social interaction, and personal experience, as well as how environmental factors influence individual behavior.	The main difference between SCT and UTAUT 2 is in their approach and focus. SCT places more emphasis on learning processes and social interactions in shaping individual behavior, while UTAUT 2 focuses more on the specific acceptance and use of technology, considering various psychological, social and contextual factors that influence use behavior of technology.	SCT has been used in a variety of contexts, including understanding use behavior of technology. However, because of its broader focus and less inclusion of more specific technical and contextual factors, SCT may not be as comprehensive as UTAUT 2 in understanding use behavior of technology in depth. Some researchers may choose UTAUT 2 because of its more specific coverage and more integrated approach to understanding behavioral intention and use behavior of technology.
9	*Unified Theory of Acceptance and Use of Technology (UTAUT)* Source: Venkatesh *et al.* (2003)	The main focus of UTAUT is understanding behavioral intention and use behavior of technology. This model identifies four main variables that influence use behavior of technology, namely perceptions about performance (performance expectations), perceptions about effort (effort expectations), social conditions (social influence), and factors that influence behavioral intentions (facilitating conditions).	The main difference between UTAUT and UTAUT 2 is the combination of factors from several previous models, such as the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), and Theory of Planned Behavior (TPB), as well as the addition of moderating variables such as gender, age, experience, and attitude.	UTAUT has become a popular theoretical framework in predicting use behavior of technology and has been used widely in various contexts and research. This model helps organizations design more effective strategies for adopting and implementing technological innovations, as well as increasing technology adoption by end users. As an integrated and comprehensive theoretical framework, UTAUT is often used by researchers and practitioners to understand use behavior of technology.

No	Model	Main Focus	Difference	Usage
10	*Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2)* Source: Venkatesh *et al.* (2012)	The main focus of UTAUT 2 is understanding behavioral intention and use behavior of technology in the digital era. This model identifies the main factors that influence an individual's intention to adopt and use new technology, including performance expectations, effort expectations, social conditions, and factors that influence behavioral intentions (facilitating conditions), Hedonic Motivation, Price Value, and Habit.	The main difference between UTAUT 2 and previous models starts from: UTAUT, integrates eight different models, namely Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Combined TAM and TPB (C -TAM-TPB), Motivational Model (MM), Personal Computer Utilization Model (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). UTAUT 2 broadens the scope by considering broader social and contextual factors.	UTAUT 2 has been used widely in various studies and contexts to predict use behavior of technology. This model has proven effective in helping organizations design more effective strategies for adopting and implementing technological innovations, as well as increasing the rate of adoption and use of technology by end users. As a comprehensive and integrated model, UTAUT 2 is often the main choice for researchers and practitioners in understanding use behavior of technology.

Table 2. Variables Forming The UTAUT 2 Model

No	Variable		Usage
1	Exogenous variables (predictors) with the notation "X_1"	Performance Expectancy (PE)	Performance Expectancy (PE) refers to how much users believe that using technology will improve their performance or effectiveness in achieving certain goals. This relates to individuals' beliefs that using technology will help them do their work or achieve better results.
2	Exogenous variables (predictors) with the notation "X_2"	Effort Expectancy (EE)	Effort Expectancy (EE) is an individual's perception of how easy or difficult it is to use technology. If individuals feel that using technology is easy, they are more likely to accept and use it. On the other hand, if individuals feel that using technology requires a great deal of effort, they may be reluctant to adopt it.
3	Exogenous variables (predictors) with the notation "X_3"	Social Influence (SI)	Social Influence (SI) includes the influence of people around an individual, such as friends, family, or coworkers, on behavioral intentions and use behavior of technology. Social support or pressure from others can influence an individual's decision to adopt or use a particular technology.
4	Exogenous variables (predictors) with the notation "X_4"	Facilitating Conditions (FC)	Facilitating Conditions (FC) refers to environmental or situational factors that influence an individual's ability to use technology. This includes resource availability, organizational support, technology infrastructure, and accessibility that can facilitate or hinder the use of technology.

No	Variable		Usage
5	Exogenous variables (predictors) with the notation "X_5"	Hedonic Motivation (HM)	Hedonic Motivation (HM) involves the emotional aspects of technology use, such as the pleasure or satisfaction an individual obtains from such use. If individuals feel happy or get high satisfaction from using technology, they are more likely to use it actively.
6	Exogenous variables (predictors) with the notation "X_6"	Price Value (PV)	Price Value (PV) includes individuals' perceptions of the value they receive from using a technology compared to the cost or effort required to adopt it. If individuals feel that the benefits or value of using technology outweigh the costs, they are more likely to adopt it.
7	Exogenous variables (predictors) with the notation "X_7"	Habit (HB)	Habit (HT) refers to an individual's level of habit in using technology in their daily life. If individuals have formed a habit of using technology regularly, they are more likely to continue using that technology.
8	Endogenous variable (criterion) with the notation"Y_1"	Behavioral Intention (BI)	Behavioral Intention (BI) is an individual's desire to carry out certain behavior, in the context of UTAUT 2, this behavior is behavioral intention and use behavior of technology. It is a direct predictor of technology use behavior. The higher a person's behavioral intentions, the more likely they are to adopt and use technology.
9	Endogenous variable (criterion) with the notation"Y_2"	Use Behavior (UB)	Use Behavior (UB) refers to the actual act of using technology by an individual. This is the result of previously stated behavioral intentions. In UTAUT 2, technology use behavior is the final result of an individual's intention to adopt and use technology.
10	Moderating variable with the notation "M_1"	Age	A person's age can influence the relationship between key variables and use behavior of technology. Behavioral Intention and use behavior of technology may differ across age groups, and younger people may be more likely to accept new technology than older people.
11	Moderating variable with the notation "M_2"	Gender	Gender can moderate the relationship between the main variables and use behavior of technology. Research shows that preferences, perceptions and experiences using technology can vary between men and women.
12	Moderating variable with the notation "M_3"	Experience	Previous experience with technology can moderate the relationship between key factors and use behavior of technology. Individuals who have previous technology experience may adopt new technology more quickly than less experienced individuals.

3. EMPIRICAL RESEARCH AND FINDINGS

In an effort to understand behavioral intention and use behavior of technology, many researchers have used a theoretical framework known as the Unified Theory of Acceptance and Use of Technology (UTAUT) 2, a theoretical model developed to explore individuals' intentions and behavior in accepting and using technology. Empirical research adopting UTAUT 2 as a theoretical foundation has made a valuable contribution in deepening our understanding of the variables that influence technology adoption in various contexts. By utilizing concepts such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, prive value, and habit, these studies have provided important

insights into how individuals make decisions regarding behavioral Intention and use behavior of technology.

Table 3. Summary of Empirical Results of Previous Research Based on UTAUT2

No	Title	Technology	Relationship	Result
1	*Consumer Acceptance and Use of Information Technology: Extending The Unified Theory of Acceptance and Use of Technology* Source: Venkatesh et al. (2012)	Mobile Internet	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI PV – BI HB – BI HB – UB BI – UB	Supported Supported Supported Supported Supported Supported Supported Supported Supported Supported
2	*Understanding Mobile Banking: The Unified Theory of Acceptance and Use of Technology Combined with Cultural Moderators* Source: Baptista and Oliveira (2015)	Mobile Banking	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI PV – BI HB – BI HB – UB BI – UB	Supported Not Supported Not Supported Not Supported Not Supported Supported Not Supported Supported Supported Not Supported
3	*Why So Serious? Gamification Impact in The Acceptance of Mobile Banking Services* Source: Baptista and Oliveira (2017)	Mobile Banking Services	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI PV – BI HB – BI HB – UB BI – UB	Supported Supported Supported Not Supported Supported Not Supported Supported Supported Supported Supported
4	*Predicting The Acceptance and Use of Information and Communication Technology by Older Adults: An Empirical Examination of The Revised UTAUT2* Source: Macedo (2017)	Information and Communication Technology	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI PV – BI HB – BI HB – UB BI – UB	Supported Supported Supported Supported Not Supported Supported Not Supported Supported Supported Supported
5	*Acceptance of Mobile Banking in Islamic Banks: Evidence from Modified UTAUT Model* Source: Raza et al. (2017)	M-Banking	PE – BI EE – BI SI – BI FC – BI HM – BI PV – BI HB – BI BI – UB	Supported Supported Not Supported Supported Supported Supported Supported Supported

No	Title	Technology	Relationship	Result
6	*Adoption of Digital Payment Systems in The Era of Demonetization in India: An Empirical Study* Source: Sivathanu (2017)	Digital Payment Systems	PE – BI EE – BI SI – BI FC – BI HM – BI HB – BI BI – UB	Supported Supported Supported Supported Supported Supported Supported
7	*Acceptance and Use of Mobile Banking: An Application of* UTAUT2 Source: Kwateng et al. (2018)	Mobile Banking	PE – BI EE – BI SI – BI FC – BI HM – BI PV – BI HB – BI HB – UB BI – UB	Not Supported Not Supported Not Supported Not Supported Not Supported Supported Supported Supported Supported
8	*Investigating Consumer Intention to Accept Mobile Payment Systems Through Unified Theory of Acceptance Model an Indian Perspective* Source: Gupta and Arora (2019)	Mobile Payment Systems	PE – BI EE – BI SI – BI FC – BI HM – BI HB – BI BI – UB	Supported Supported Not Supported Supported Not Supported Supported Supported
9	*Mobile Banking Usage and Gamification: The Moderating Effect of Generational Cohorts* Source: Çera et al. (2020)	Mobile Banking	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI HB – BI HB – UB BI – UB	Supported Not Supported Not Supported Supported Not Supported Supported Supported Supported Supported
10	*South African Millennials' Acceptance and Use of Retail Mobile Banking Apps: An Integrated Perspective* Source: Thusi and Maduku (2020)	Retail Mobile Banking App	PE – BI EE – BI SI – BI FC – BI FC – UB HM – BI PV – BI HB – BI HB – UB BI – UB	Supported Not Supported Not Supported Not Supported Supported Not Supported Not Supported Supported Not Supported Supported
11	*Extending UTAUT2 in M-Banking Adoption and Actual Use Behavior: Does WOM Communication Matter?* Source: Farzin et al. (2021)	M-Banking	PE – BI EE – BI SI – BI FC – BI HM – BI PV – BI HB – BI BI – UB	Supported Supported Supported Supported Supported Supported Supported Supported
12	*The Use of Fitness Centre Apps and Its Relation to Customer Satisfaction: A UTAUT2 Perspective* Source:	Fitness Centre Apps	PE – BI EE – BI SI – BI FC – BI	Supported Supported Supported Supported

No	Title	Technology	Relationship	Result
	Barbosa et al. (2021)		HM – BI	Supported
			HB – BI	Supported
			BI – UB	Supported
13	*Fintech Use, Digital Divide and Financial Inclusion* Source: Odei-Appiah et al. (2021)	FinTech	PE – BI	Supported
			EE – BI	Not Supported
			SI – BI	Not Supported
			FC – BI	Supported
			FC – UB	Supported
			HM – BI	Not Supported
			PV – BI	Not Supported
			HB – BI	Supported
			HB – UB	Supported
			BI – UB	Supported
14	*Factors Affecting User Acceptance for NFC Mobile Wallets in The U.S. and Korea* Source: Shin and Lee (2021)	NFC Mobile Wallets	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Not Supported
			HB – BI	Supported
			BI – UB	Supported
15	*Islamic Mobile Banking Smart Services Adoption and Use in Jordan* Source: Yaseen et al. (2022)	Mobile Banking Smart Services	PE – BI	Supported
			EE – BI	Not Supported
			SI – BI	Not Supported
			HM – BI	Supported
			BI – UB	Supported
16	*Understanding Mobile E-Wallet Consumers' Intentions and User Behavior* Source: Esawe (2022)	Mobile E-Wallet	PE – BI	Supported
			EE – BI	Not Supported
			SI – BI	Supported
			FC – BI	Not Supported
			FC – UB	Supported
			BI – UB	Supported
17	*Islamic Social Financing and Efficient Zakat Distribution: Impact of Fintech Adoption among The Asnaf in Malaysia* Source: Ahmad and Yahaya (2022)	Fintech	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Not Supported
			FC – BI	Supported
			FC – UB	Supported
			HM – BI	Not Supported
			PV – BI	Not Supported
			HB – BI	Supported
			HB – UB	Supported
			BI – UB	Supported
18	*Investigating The Unexpected Determinants of Cryptocurrency Adoption in The UAE* Source: Jegerson et al. (2023)	Cryptocurrency	PE – BI	Supported
			EE – BI	Not Supported
			SI – BI	Supported
			FC – BI	Not Supported
			FC – UB	Supported
			HM – BI	Supported
			PV – BI	Supported
			BI – UB	Not Supported
19	*Neobanking Adoption – An Integrated UTAUT-3, Perceived Risk and Recommendation Model* Source: Bhatnagr and Rajesh. (2023)	Neobanking	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Supported
			FC – BI	Supported
			FC – UB	Supported
			HM – BI	Supported

No	Title	Technology	Relationship	Result
			PV – BI	Supported
			HB – BI	Supported
			HB – UB	Supported
			BI – UB	Supported
20	*Understanding Consumers' Intentions to Use QR Code Menus in The Post-COVID-19 Pandemic* Source: Koay and Ang (2024)	QR Code Menus Restaurants	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Supported
			FC – BI	Not Supported
			HM – BI	Not Supported
			HB – BI	Supported
21	*Understanding Consumers' Adoption of E-Pharmacy in Qatar:Applying The Unified Theory of Acceptance and Use of Technology* Source: Halbusi et al. (2024)	E-Pharmacy	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Not Supported
			FC – BI	Supported
			HM – BI	Supported
			HB – BI	Supported
			BI – UB	Supported
22	*Modelling eco-friendly smart home appliances' adoption intention from the perspective of residents: a comparative analysis of PLS-SEM and fsQCA* Source: Chanda et al. (2024)	Smart Home Appliances	PE – BI	Supported
			EE – BI	Not Supported
			FC – BI	Supported
			HM – BI	Supported
			PV – BI	Supported
			HB – BI	Not Supported
			SI – BI	Not Supported
23	*Factors affecting performance expectancy and intentions to use ChatGPT: Using SmartPLS to advance an information technology acceptance framework* Source: Camilleri (2024)	ChatGPT	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Supported
24	*What factors determine the intention to use and recommend public autonomous shuttles in a real-life setting?* Source: Quinones *et al.* (2024)	Public Autonomous Shuttles	PE – BI	Supported
			EE – BI	Not Supported
			SI – BI	Not Supported
			FC – BI	Supported
			HM – BI	Supported
25	*Unlocking determinants of smart construction: an integrated model of UTAUT2, TTF, and perceived risk for IoT acceptance in AEC industry* Source: Wang *et al.* (2024)	Architecture, Engineering, and Construction (AEC) Industry	PE – BI	Supported
			EE – BI	Supported
			SI – BI	Not Supported
			HM – BI	Supported
			HB – BI	Not Supported
			FC – BI	Supported

Case studies on the application of UTAUT 2 in various organizations provide valuable insight into how this theoretical framework can be applied to understand behavioral intention and use behavior of technology in diverse contexts, such as: fintech, cryptocurrency, neobanking, fitness centers, restaurants, pharmaceuticals, and others.

4. CRITICISM AND CHALLENGE

Criticism of UTAUT 2 can be addressed on several fronts, including criticism of overly broad generalizations and an inability to consider specific contextual factors. One of the main criticisms of UTAUT 2 is that this model tends to generalize too broadly regarding behavioral intention and use behavior. of technology. The model is built on data from multiple organizations, which may cause difficulties in

considering the differences that exist between these contexts. As a result, doubts arise whether this model can provide deep insight into ehavioral intention and use behavior. of technology in a specific context.

Another criticism of UTAUT 2 is the model's failure to consider specific contextual factors in behavioral intentions and use behavioral of technology. This model emphasizes psychological and social factors that generally apply across situations, but is often unable to accommodate variations in a particular organizational context. As a result, the model cannot provide a deep understanding of how specific contextual factors may influence behavioral intentions and use behavioral of technology.

Undertaking critical consideration of criticisms of UTAUT 2 can provide valuable insight into how its validity and relevance in practical contexts may be affected. Criticism of overly broad generalizations may raise doubts about the validity of UTAUT 2 in specific contexts. If the model is unable to consider contextual factors specific to a particular organization, then its validity in predicting behavioral intentions and use behavior of technology in that context may be questionable. Therefore, researchers should carefully consider whether UTAUT 2 is suitable as a theoretical framework that best fits their specific context, or whether further modification or development is necessary.

Criticism of UTAUT 2 emphasizes the importance of further research to refine and expand the model. With an understanding of the criticisms presented, researchers can direct their efforts to improve the validity and relevance of UTAUT 2 in more specific practical contexts. This may involve additional developments to account for more detailed contextual factors or conducting more comprehensive empirical research to test the model in a variety of organizational contexts.

UTAUT 2 remains a valuable theoretical framework for understanding behavioral intention and use behavior of technology broadly. Despite criticism of this model, a number of empirical studies have supported its validity and relevance in various contexts. However, researchers must remain cautious in applying and interpreting the results of these models, especially when considering research-specific contextual factors.

5. LATEST DEVELOPMENTS AND INNOVATIONS

Recent efforts in development and modification related to UTAUT 2 demonstrate an interesting trend in efforts to increase the validity and relevance of this model in understanding behavioral intention and use behavior of technology. Some recent research has attempted to incorporate more specific contextual factors into the UTAUT 2 model, such as considering industry characteristics, organizational culture, and environmental factors that may influence technology adoption. By taking these factors into account, the model can become more relevant in practical contexts. Several studies have also expanded the understanding of moderating variables within the UTAUT 2 theoretical framework, including exploring the role of additional moderating variables that may influence the relationship between the main factors. By expanding understanding of moderating variables, the model can provide deeper insight into the dynamics of behavioral intention and use behavior of technology.

Recent research highlights the importance of testing the UTAUT 2 model in a variety of industrial, geographic, and organizational contexts. It aims to validate the model in a variety of different situations and evaluate the extent to which it can be widely used. By testing the model in various contexts, the model can be adjusted to reflect variations in behavioral intention and use behavior of technology. Derived models based on UTAUT 2 with a special focus on certain contexts or specific dimensions of behavioral intention and use behavior of technology. This includes developing models for specific organizations or specific technology use situations. By designing derived models, researchers can adapt the UTAUT 2 theoretical framework to suit more specific research or application needs.

This latest initiative reflects ongoing efforts to increase the validity and relevance of UTAUT 2 in understanding behavioral intention and use behavior of technology. By continuing to refine and expand this model, we can gain a deeper understanding of the factors that influence behavioral intention and use behavior of technology and design more effective strategies to encourage more widespread behavioral intention and use behavior of technology.

6. IMPLICATIONS AND RECOMMENDATIONS

Understanding UTAUT 2 can provide organizations with a number of valuable practical implications in efforts to improve behavioral intention and use behavior of technology. By understanding the key factors that influence behavioral intention and use behavior of technology, organizations can design more optimal user experiences. This includes ensuring that the technology introduced has clear benefits, is easy to use, and meets user expectations. Designing a better user experience can help increase adoption rates and user satisfaction.

Based on an understanding of the factors that influence behavioral intention and use behavior of technology, organizations can develop training and education programs that are more targeted. This includes providing training that focuses on increasing users' confidence in the benefits of the technology (performance expectancy) and increasing ease of use (effort expectancy). By providing effective training, organizations can increase the skill level of a wider range of users.

Understanding factors such as social support (social influence) and supporting conditions (facilitating conditions) can help organizations in designing policies and procedures that support behavioral intention and use behavior of technology. This includes providing support from management and colleagues for the use of new technology, as well as ensuring that the necessary infrastructure and resources are available to support behavioral intention and use behavior of technology.

Organizations can use the UTAUT 2 theoretical framework as a basis for ongoing evaluation and monitoring of behavioral intention and use behavior of technology. By monitoring factors that influence behavioral intention and use behavior, organizations can identify areas where they need to make improvements or additional interventions to improve behavioral intention and use behavior of technology.

By applying knowledge of UTAUT 2 in behavioral intention and use behavior of technology strategies, organizations can increase their chances of success in implementing new technology and utilizing it effectively to achieve their business goals. By focusing on the factors that influence behavioral intention and use behavior of technology, organizations can design better user experiences, increase the effectiveness of training and education, develop supportive policies and procedures, and conduct ongoing evaluations to achieve success in behavioral intention and use behavior of technology.

7. CONCLUSION

UTAUT 2 has made a significant contribution to understanding behavioral intention and use behavior of technology. By considering factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, prive value, and habit, this model has helped design more effective strategies to increase behavioral intention and use behavior of technology in various contexts. UTAUT 2 has been proven to be able to predict behavioral intention and use behavior of technology in adopting technology with a high level of accuracy. The practical implications of this model have been proven to provide valuable guidance for organizations in improving behavioral intention and use behavior of technology.

UTAUT 2 has brought many benefits, but this model still faces a number of challenges. One is the challenge of adapting models to more varied contexts and evolving technologies. Other challenges include considering more specific contextual factors, such as organizational culture and organizational characteristics, as well as overcoming shortcomings in predicting complex and dynamic behavioral intention and use behavior. Nevertheless, the future prospects for UTAUT 2 remain bright. By continuing to carry out ongoing research and developing this model, we can increase our understanding of behavioral intention and use behavior of technology and design more effective strategies to promote technology adoption in the ever-growing digital era.

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