Volume 2 No 6, 2026
Journal of Global Research in Multidisciplinary Studies (JGRMS)
Review Paper
Available online at https://saanvipublications.com/journals/index.php/jgrms/index

Technology Acceptance Model (TAM) and Consumer Behaviour in Digital Product Adoption

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***Abstract*—The growth of technology has reached a very fast pace resulting in a shift in consumer behavior and upsurge in the number of people who use products and services that come in digital form like banking on the internet, shopping on the internet, social networks, Artificial intelligence, and electronic payments. This research paper will focus on the role of Technology Acceptance Model (TAM) in explaining consumer behavior towards digital product usage. The research pays attention to how consumer behavior is affected by perceived usefulness (PU) and perceived ease of use (PEOU). Moreover, it reviews the utilization of the TAM within different digital contexts and integration with behavioral theories like TPB, IDT, and UTAUT for good understanding the process of adopting digital goods and services. In addition, the limitations of the TAM are critically analyzed. These limitations include the oversimplification of consumer behavior, lack of consideration of emotional and social aspects of consumer behavior, rapid developments in technology, and cultural differences. According to this paper, modern consumers are influenced by factors other than PU and PEOU.**

Keywords*—Technology Acceptance Model (TAM), Consumer Behavior, Digital Product Adoption, Perceived Usefulness, Perceived Ease of Use, Behavioral Intention, Digital Innovation, Technology Adoption, E-commerce, Digital Consumers.

I. INTRODUCTION

Rapid technological developments in digital technologies have changed the business environment worldwide and greatly affected consumer behaviour. With the emergence of smartphones, mobile apps, online e-commerce, Artificial Intelligence (AI), cloud computing (CC), digital payments, and social media technology, there is an increased adoption of digital products and services by consumers [1][2]. In today's world, consumers make use of digital technologies to communicate, shop, entertain themselves, educate themselves, conduct financial transactions, access health care, and perform other professional tasks[3]. Thus, consumer adoption of digital products has become a critical issue for researchers, organizations, and policymakers. Technical products must also be accepted by consumers for them to achieve success, apart from innovation[4]. Digital goods are readily accepted, while other digital products face a lot of challenges in being adopted by consumers due to problems like complexity, usability issues, trust issues, security concerns, etc. As a result, many investigators have formulated numerous models that explain the behaviour of consumer technology acceptance. The TAM is considered to be among the most notable ones [5]. The TAM was established by Fred Davis in 1989 and is built on the "Theory of Reasoned Action" (TRA), which explains reasons people accept and adopt technology. Two factors primarily underlie the TAM, PU and PEOU, which form the basis of a person's attitude toward technology. The PU is the perceived usefulness of the product or service to the consumer in terms of how the adoption will increase productivity and effectiveness. On the other hand, PEOU is the degree to which the consumer perceives the ease with which the technology can be used [6].

The TAM theory has been developed into an extensive theoretical model through the addition of new factors like trust, risk perception, social pressure, entertainment, facilitating conditions, self-efficacy, and user experience [7]. Such enhancements have made TAM more effective at explaining consumer behaviour in contemporary digital settings where there is constant technological advancement and changes in the marketplace. The theory of TAM has been taken into consideration in different sectors such as e-commerce, mobile banking, education technology, digital money, social networking sites, wearables, AI, and smart devices [8][9]. Consumers' adoption of digital products is a complicated procedure, which is affected by many aspects reaching from psychological, social, technological, and economic perspectives. Modern consumers of digital products are increasingly concerned about experience, convenience, and technological knowledge[10]. In addition to the functional benefits, the choice of adopting some digital products is influenced by other factors including emotional satisfaction, customizability, online review, brand reputation, cybersecurity, and social interaction[11]. Under such circumstances, TAM serves as a structured framework for exploring consumer attitudes toward digital adoption process. The emergence of the digital economy and increasing usage of technology-based services have made it necessary to study the concept of technology acceptance. Organizations take advantage of knowledge acquired through TAM theory to enhance user interface, create customer experience, digital trust and innovation [12][13]. Similarly, technology adoption theories form the basis for creating digital inclusiveness and digital sustainability by policymakers and technology firms.

TAM continues to be one of the most impactful theories of technology adoption, yet criticism against its initial construct includes its tendency to oversimplify consumer behavior

through cognitive perception without considering emotional, ethical, cultural, and cybersecurity concerns related to digital technology adoption.

A. Aim and Objectives

Aim To research the function of the Technology Acceptance Model (TAM) in understanding consumer behaviour towards digital product uptake in today's digital settings.

B. Objective

- To examine the character of TAM in digital product acceptance.
- To analyse the effect of PU and PEOU on consumer behaviour.
- To understand the impact of trust, security, and social factors on technology adoption.
- To evaluate the application of TAM in digital environments.
- To identify the limitations and future scope of TAM in modern digital ecosystems.

II. Research Methods

Qualitative and systematic literature review methodology will be used to analyze the significance of the TAM in elaborating consumer behaviour regarding digital products.

A. Source of Data

Data sources for the research comprise secondary data in peer-reviewed articles, conference papers, books, and other academic sources.

B. Data Source

The relevant literature has been sourced from reputable academic databases like Google Scholar, Scopus, ScienceDirect, Springer, IEEE Xplore, and Web of Science.

C. Period and Scope of Review

Literature published from 2020 to 2025 focusing on TAM, digital consumer behaviour, e-commerce, fintech, AI adoption, mobile banking, social media, and digital technology adoption will be reviewed.

D. Thematic Synthesis Method

The thematic synthesis approach will be employed for categorizing the literature on themes such as financial technology adoption, emotion-based digital adoption, trust and cybersecurity, AI adoption, and application of behavioural theories.

E. Conceptual Knowledge

The methodology allows researchers to gain knowledge about the various technological, psychological, social and emotional aspects of consumer behaviour in modern digital ecosystems.

III. Findings of Systematic Review

The systematic study shows that the TAM is still a key paradigm for digital product uptake. Perceived Usefulness (PU) and PEOU strongly affect customers' attitudes, behavioral intentions, and digital technology adoption. Usability, functionality, trust, cybersecurity, customization, emotional engagement, social impact, and user experience all affect modern customers, according to the review. Mobile banking and fintech adoption studies show that security, reliability, and trust influence digital payment behaviour. Social media and AI research show that fun, emotional attachment, and interaction substantially influence technological acceptance. The review also shows that integrating TAM with behavioral theories like TPB, UTAUT, IDT, and ECT improves technology adoption studies' explanatory power. The data also show that demographic and cultural characteristics including age, gender, digital literacy, and socioeconomic background strongly influence digital adoption. The review concludes that traditional TAM alone cannot explain the complexity of modern digital consumer behavior and requires integration with emotional, behavioral, technological, and socio-cultural dimensions to better understand digital product adoption.

A. Relationship Between Tam and Consumer Behaviour

It is extremely vital to know the connection between TAM and consumer behavior because it allows us to have insights into how people adopt, use, and retain technology-based goods and products. The TAM is an established theory that helps in identifying what drives people's decisions and how their perception towards technology can lead to behavioral intention and behaviour. Digital consumer behaviour can be influenced by many different psychological, technological, and social elements [14]. TAM was developed from the TRA and was aimed to understand user's behaviour towards information systems and technological developments [15]. In theory, there are two elements that determine the uptake of technology by individuals. On the other hand, PEOU stands for the element that is concerned with the ease of understanding and use of a certain technology. In terms of TAM, consumers adopt a certain technology due to their favourable attitudes towards its usage and benefit [16].

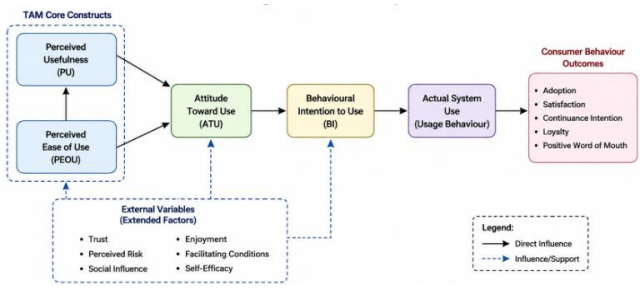

Fig. 1. Relationship between TAM and Consumer Behaviour in Digital Product Adoption

Fig. 1 above: highlights the fact that the process of adoption of digital goods by consumers is largely influenced by two main variables, PU and PEOU. PU is viewed as the extent to which a specific person views technology as making him/her more efficient in performing certain tasks. If consumers view a technology as useful and beneficial to their life or work and believe that it saves time, increases efficiency, or provides high-quality services, then positive attitudes toward adoption will emerge. For instance, customers are more likely to accept m-banking apps, electronic payment mechanisms, and online commerce sites if they see their utility in performing daily tasks. In the same way, the PEOU also impacts consumer behaviour because consumers become comfortable when using any kind of Digital Technology (DT). People like DT which is easy to understand and learn [17]. It is quite possible that a difficult design and interface can create barriers for a user and discourage them from adopting a product. Consequently, the consumers find DT easier to handle when its design and navigation are simple and

understandable. It also states that consumers' attitude towards the technology depends on how useful or easy-to-use it is perceived by them. Attitude leads to the formation of behaviour intention to use DT, which in turn becomes an effective predictor of DT adoption. Generally, positive attitudes tend to lead to higher technology adoption, increased customer satisfaction, and usage intention, while negative attitudes could make individuals either reject the technology or stop using it altogether. Other determinants that affect consumer behaviour in the digital world besides the factors mentioned above include trust, risk perception, social influences, fun, facilitation, and self-efficacy. The issue of trust is especially critical because when considering e-commerce and banking, concerns of privacy and security can assume a critical role for consumers. Similarly, perceived risks regarding financial losses, privacy risks, or technological risks may discourage consumers from adopting digital products[18]. The impact of social influence via different sources, such as peers, social networking sites, or customers' reviews, is also quite significant [19]. Finally, consumer behaviour in terms of adoption of digital products is correspondingly driven by emotions and experiences, as modern customers look for more than just functionality they expect a pleasant experience[20], personalization, etc. As a result, perceived enjoyment and user experience became important determinants of technology acceptance in the modern digital world. The framework of TAM helps organizations better understand the processes involved in consumer behaviour and develop appropriate technologies.

B. Application of TAM in Digital Environments

As a result of rapid development of digital transformation, numerous organizations in different industries rely upon technology-driven approaches and solutions in order to increase their effectiveness, improve interactions with clients, and provide services. This is when TAM becomes relevant, providing an empirical model that can be used for evaluation and adoption of technology through analysis of users' viewpoints in the digital environment [21].

1) Mobile Banking/Digital Payment Systems TAM Application

There have been many instances where TAM theory has been used to investigate issues related to the acceptance of online banking apps, e-wallets, and online payment systems. Preference for digital payment methods has risen considerably due to their convenience and efficiency. The theory of TAM has established that the perceptions of security, usability, usefulness, and reliability of users affect their behavior intention towards the adoption of technology. The financial institutions use TAM to analyze any barrier that might delay the digital banking technology implementation by individuals, such as risk perception, privacy concerns, and fear of technology [22].

2) Implementing TAM on Social Media Sites

Social media websites are yet another major domain wherein TAM has been extensively used by scholars. Studies have adopted TAM to understand consumer behaviour when it comes to adopting social networking sites, content-sharing applications, and online communication software. In social media settings, the components that determine PU are effective communication, information exchange, fun, and sociability, whereas those determining PEOU include user interface and interactivity[23]. In addition, TAM aids in analyzing the impact of enjoyment, social interaction, and participation in social media usage behavior. Companies take insights from TAM in order to enhance digital brand communication [24].

3) Execution of TAM in e-Learning Systems.

As the growth of e-learning and virtual learning increases, TAM becomes more relevant in educational technology studies. The TAM model is employed to study acceptance of e-learning tools, virtual courses, and other technological tools by students and teachers. In e-learning settings, perception of usefulness implies that the use of technology improves learning productivity, academic results, and availability of educational content [25]. PEOU implies the level of system usability, convenience, and navigation. The researchers also consider other variables such as self-efficacy, motivation, technology support, and facilitation in order to get a better understanding of digital learning adoption. Educational institutions use the results of TAM analysis in order to improve their digital learning system, increase learner participation, and improve educational provision. One of the fields where TAM theory can be applied is the area of electronic commerce. The research conducted using the TAM theory analyzes the influence of PU and comfort of use on consumers' behaviour when buying goods online. When consumers visit online stores, they assess the website in terms of convenience, availability, speed of transactions, ease of use, and information quality. When convenient online shopping websites provide an easy way to buy products, then a positive attitude toward using them is formed. Similarly, researchers apply TAM to identify factors like trustworthiness, secure payment methods, timely deliveries, and customized offers that significantly affect online buying behaviour [26].

4) Utilization of the TAM in AI and Smart Technologies

The increased use of AI, Machine Learning (ML), smart devices, and automation technology has widened the scope for using TAM within complex digital ecosystems. Individuals have become more engaged with technologies such as chatbots powered by AI, intelligent assistants, recommendation systems, smart home devices, and wearable technologies. TAM is applied to evaluate consumer perceptions of the value, intelligence, credibility, and usability of these technologies. Researchers include aspects such as transparency, explainability, ethics, and emotionality in TAM models to understand consumer acceptance of these technologies better. Companies use insights from this research to create intuitive, reliable, and customized AI technologies [27].

TAM has been severely critiqued for oversimplification of human behaviour because it considers only human cognition without paying much attention to emotions, culture, social and environmental aspects that affect digital adoption in reality. Modern-day digital users are driven not only by usability and usefulness of digital technologies but also by trust, cybersecurity, customization, social influence, emotional engagement and ethics, which have not been considered within the scope of the initial TAM theory.

Existing TAM-based studies demonstrate strong explanatory power for usability-related adoption; however, they fail to fully explain emotional attachment, personalization expectations, and AI-driven consumer experiences in contemporary digital ecosystems.

C. Integration of TAM with Other Behavioral Theories

Model of Behavioral Theory (TPB). Attitudes, subjective standards, and perceived behavioral control are the components of Icek Ajzen's TPB model that impact the intention to behave. The adoption process in this case is carried out through the consideration of social and control factors via TPB approach whereas TAM takes a different view. It is from this approach that researchers can gain further insights into factors affecting consumer behaviour towards the use of technology. Consumers may embrace mobile payment systems for numerous reasons, including their practicality and user-friendliness as well as the social pressure from friends, family, and colleagues to do so [28]. Similarly, customers' sense of agency over their own actions provides light on whether or not they have the knowledge, competence, and access to tools necessary to make good use of technology. Another combination theory that is gaining popularity in research concerning the use of digital products is TAM with IDT [29]. The theory of innovation diffusion proposed by Everett Rogers is a fascinating one because it helps marketers gain insights into what influences innovation adoption. Aspects such as comparative benefit, comfort, difficulty, trialability, and observability have been identified as some of those influencing innovation adoption processes. Combining TAM with IDT allows one to learn more about innovation factors and their effects on innovation adoption. Relative advantage is the same as usefulness while complexity refers to PEOU. Compatibility refers to how easily the digital good can be fit into the lives of consumers. Another addition to the TAM model is the "Unified Theory of Acceptance and Use of Technology" (UTAUT), which combines some features of technology acceptance theories like TAM, TPB, and IDT. Performance anticipation, effort anticipation, social effect, and enabling conditions are some of the other elements that make up the UTAUT theory. Because it takes demographics like age, gender, and experience into account, the UTAUT theory provides more information about technology adoption and use, which is an advantage [30]. A combination of TAM theory and Expectation Confirmation Theory (ECT) to study post-adoption behaviour and continuity of intention. The use of ECT theory will assist in the study of how expectation confirmation determines consumer fulfillment and nonstop use of technology. The main focus of TAM is intention to adopt technology while that of ECT theory will be in determining long-term behaviour of consumer loyalty and continuous use of technology products. A combination of these theories will be useful in investigating the post-adoption behaviour of consumers who use digital products like e-learning courses and mobile applications. A combination of the TAM theory with the trust and risk perception theory. By using the concept of trust, it becomes easier for us to understand the key determinants of technologies such as electronic commerce, electronic banking, online healthcare, and financial technologies. Consumers before adopting any technology consider factors such as credibility and security of that technology. With the help of perceived risks, it can investigate the concerns of consumers related to monetary loss, security issues, and technology risks [31].

D. Conceptual Framework

The conceptual framework is significant as it helps to understand the relationships between the different aspects influencing the implementation of digital products. According to the expanded TAM model, the factors of perceived usefulness and perceived ease of use help shape the consumer's boldness, intention, and behavior toward technology adoption, whereas other determinants such as trust, perceived risk, emotional involvement, social effect, and cybersecurity can influence consumer behavior. The application of thematic synthesis ensures a higher level of analytical rigor by arranging the literature under several themes rather than just descriptive analysis. For instance, the theme of TAM for financial technology underscores the significance of security, convenience, and trust with regards to mobile banking and online payments' adoption; the theme of emotional variables in digital adoption stresses the role of enjoyment, personalization, and user experience on technology adoption, and finally, the role of trust and cybersecurity proves that consumers would be more inclined to adopt digital technology when privacy and data safety are assured.

E. Related Work

Dwivedi (2019) reviewed the UTAUT, an alternative theoretical framework was also constructed as an empirical evaluation of an alternative theoretical model through which factors affecting the adoption of IS/IT innovations were examined. The new theoretical framework was empirically validated using the integration of "meta-analysis and structural equation modeling" (MASEM). In the meta-analysis process, data were collected from 162 research papers on IS/IT acceptance and usage and the analysis was done on 1600 observations on 21 relations. Attitude was determined to be the primary variable influencing both behavioral purpose and real usage, according to the "structural equation modeling" (SEM) results. Attitude also modifies the connexion amongst behavioral purpose and exogenous variables, and attitude has an effect on actual usage [32].

Rekha and Jain (2019) compared various models of technology adoption that may help in forecasting the intention of consumers for adoption of digital communication when buying cars in India. Primary data was collected by administering questionnaires to 801 car buyers who were both present and potential car consumers in Delhi. The Structural Equation Modeling (SEM) methods of goodness-of-fit, explanatory power, and significance were used to compare the models' performance. Marketers can regulate the uptake of digital communications by observing the Decomposed Theory of Planned Behavior [33].

Patil et al. (2020) It will attempt to look into some of the variables that can help in predicting the probability of implementation of mobile transaction technology by customers in India, which is one of the biggest markets for mobile subscribers in the world. The majority of the literature on mobile transaction technology adoption has concentrated on the applicability of TAM theory for consumer technology adoption. The other point to be considered is the fact that the theory is mainly built from an organizational perspective while being accused of determinism, paying very little attention to individual differences. In this case, the study will make use of meta-UTAUT framework with attitude among other individual differences. Based on an empirical analysis carried out using 491 consumers in India, the factors influencing mobile payments use include performance expectancy, intentions to use and grievance redress. The factors influencing intentions to use include attitude, social influences and facilitating conditions [34].

Tao et al. (2023) investigates the impact of demographics on the customers' acceptance and utilization of m-health. The

usage of variables of Self-Determination Theory (SDT), "Task-Technology Fit" (TTF) led to the creation of an entire m-health acceptance model. The SEM was considered in the examination of the survey results obtained from 623 Chinese consumers who had used m-health services for six months or more. Multi-group analyses were performed on the associations of the variables in the model by different gender and age segments. The study showed that both relatedness and expertise affected the consumers' perceived usability of m-health. The association between ease of use and TTF had an important influence on PU. M-health perceived ease and usage accounted for 81% of the variance of the consumption rate. The study further demonstrated the moderating outcome of gender on the associations of m-health autonomy, usefulness and use. The variables involved include self-motivation (relatedness and competence), perception of technology (ease of use and utility) and TTF [35]. Table I presents a comparative analysis of previous studies on consumer behaviour in digital product and technology adoption, highlighting their objectives, methodologies, theoretical frameworks, key variables, major findings, and contributions to the field.

TABLE I. COMPARISON OF LITERATURE REVIEW.CONSUMER BEHAVIOUR IN DIGITAL PRODUCT

Author & Year	Objective of the Study	Methodology / Sample	Theoretical Framework	Key Variables	Major Findings	Contribution to Study
Dwivedi (2019)	To review UTAUT and develop an alternative theoretical framework explaining IS/IT innovation adoption.	Meta-analysis and SEM (MASEM); data extracted from 162 studies with 1600 observations on 21 relationships.	UTAUT	Attitude, behavioral intention, actual usage, exogenous constructs	Among all the factors affecting behavioral intention and actual usage, attitude stood out as the most relevant construct. The connection between external factors and behavioral intention was moderated to some extent by attitude.	enhanced the predictive power of UTAUT-related frameworks and illustrated the significance of behavioral attitude in technology adoption.
Rekha and Jain (2019)	To compare different technology adoption models in predicting consumer intention toward digital communication in car buying behaviour in India.	Primary survey data from 801 actual and potential car buyers in Delhi; SEM.	Decomposed Theory of Planned Behaviour (DTPB) and technology adoption models	Consumer intention, digital communication adoption, behavioural factors	DTPB provided better explanatory power in understanding consumer adoption of digital communication technologies.	emphasized how important communication and behavioral aspects are to digital customer decision-making.
Patil et al. (2020)	To identify key drivers influencing consumer adoption of mobile payment technology in India.	Empirical analysis using survey data from 491 consumers in India.	Meta-UTAUT integrated with TAM-related consumer constructs	Optimism, perspective, social impact, supportive environments, confidence, worry, resolving complaints, and individual creativity	Mobile payment usage was strongly impacted by behavioral intention, performance anticipation, and grievance redressal. Intention to use was influenced by social influence, attitude, and enabling circumstances.	Extended UTAUT by incorporating individual behavioral differences and consumer-oriented variables in mobile payment adoption.
Tao et al. (2023)	to investigate how consumer acceptance and use of m-health technologies are impacted by demography.	SEM using survey responses from 623 Chinese consumers using m-health services for more than 6 months.	SDT, TTF, and TAM	PEOU, PU, autonomy, competence, relatedness, TTF	Ease of use and TTF strongly influenced PU. PU and ease of use explained 81% variance in m-health usage behaviour. Gender moderated several relationships.	Demonstrated the importance of motivational, demographic, and technological fit variables in digital healthcare technology adoption.

Research Gap: Nonetheless, much of the current research has considered the concepts of PU, PEOU, and behavioral intentions while overlooking other important variables such as AI trust, personalization, emotional involvement, cybersecurity, digital fatigue, and responsible technology use. Numerous investigations have been carried out on mobile banking, e-commerce, and health care but few cross-platform comparative studies have been conducted in the area. Additionally, research involving cultural and demographic diversity is limited especially among emerging economies with varying levels of digital skills, technological infrastructures, and availability. Most research is centered around adoption rather than continuation intentions and customer loyalty. For effective consumer behaviour studies in relation to digital products adoption, integrated and up-to-date frameworks incorporating TAM with other constructs are essential.

F. Challenges and Implications Affect the Consumer Behaviour

1) Oversimplification of Consumer Behaviour

The TAM oversimplifies consumer behaviour by emphasizing PU utility and PEOU as the key drivers of technology adoption. They are indeed important, however, contemporary consumer behaviour in relation to digital products is complex and influenced by psychological, emotional, social, cultural, and environmental factors. At present, consumers evaluate digital products considering factors such as functionality, convenience, trustworthiness, customization, satisfaction, ethicality, and digital experience. It is this weakness that limits the ability of the model to explain customer decision-making processes within the dynamic digital marketplace. The implication of this problem is that both businesses and scholars should apply bigger and more comprehensive behavioral models in their study of digital product adoption. Digital transformation calls for consumer-oriented approaches that emphasize experience, engagement,

trust, and behavioral diversity, rather than usability and utility [36].

2) Limited Consideration of Emotional and Social Factors

Another issue with TAM is its omission of emotional and social factors in customer behaviour. Emotional pleasure, enjoyment, social identity, peer influence, online reviews, and social media interactions influence technology adoption in modern digital contexts. Entertainment, community interaction, social recognition, and emotional engagement inspire digital product and platform users. The original TAM paradigm fails to handle emotional and social factors. Implications of this limitation are crucial for all digital businesses and marketing managers. Digital firms need to concentrate on providing more emotional experiences and social interactions to enhance consumer adoption and loyalty [37]. Personalization, gamification, social interaction, social media interaction, and consumer interaction features are now critical components for enhancing consumer acceptance. Academically, this issue underlines the importance of considering aspects related to emotional intelligence and social influence as important factors when conducting studies on technology adoption.

3) Rapid Technological Changes

The fast development of modern technologies like AI, ML, blockchain technology, internet of things (IoT), virtual reality (VR), and CC is another important threat to TAM. The initial development of TAM took place during a comparatively simpler technological era and may fail to address the intricacies involved in modern intelligent and automated technologies. Modern technologies incorporate problems of algorithm transparency, automation trust, ethics, data security, and interactions between humans and technology, which cannot be addressed by traditional TAM constructs. As far as the implications of rapid technological advancements are concerned, there is an evident necessity to keep updating the technology adoption models to stay relevant in the constantly evolving digital world. In addition, companies developing advanced digital technologies must concentrate on the issues of transparency, security, explainability, and trust-building to stimulate technology adoption. As far as researchers are concerned, they have to expand TAM with such factors as technological ethics, AI trust, cybersecurity perceptions, and automation acceptance [38].

4) Cultural and Demographic Differences

Consumer behaviors in relevance to the technology adoption greatly vary from one culture to another depending on age, demographic factors, education level and socio-economic backgrounds. Issues related to age, gender, socio-economic background, awareness of technology, occupation and cultural values are critical in determining the attitudes of consumers towards technology products. Consumers who are young are more likely to adopt technology quickly than their counterparts who are old because of their level of technological awareness whereas the latter group may tend to resist technology owing to fear of technology or lack of sufficient awareness of technology. The problem here is that there will not be a one-size-fits-all approach to adopting technology policy measures in organizations. There is a need for different approaches for digital products and services that can assist in meeting the needs of different consumer groups. The policymakers and educators should focus on issues concerning digital literacy, technology adoption among individuals, and digital inclusion [39]. This is a matter of great concern to researchers because there is a need for cross-demographic and cross-cultural research.

In addition, the previous debate has thoroughly investigated the shortcomings of the TAM when it comes to comprehending customer behaviour about the adoption of digital products. While TAM does a good job of explaining how people buy tech because it's practical and easy to use, it doesn't do a good job of explaining how the internet is always changing. Factors such as cultural diversity, ethics, emotions, and interactions have a larger impact on today's consumers than just usability and functionality. In fact, the analysis reveals that TAM fails to explain consumer behaviour in adopting technology since the original model overlooks the psychological and emotional factors. Additionally, there are rapid developments in technology with innovations such as AI, blockchain, and smart technology, which create complex behavioral changes. Age differences, society, and economic backgrounds further affect consumer behaviour in technology adoption, making it impossible for the model to capture all the behavioral elements. Therefore, it is crucial to understand that TAM should be developed and extended to include behavioral, psychological,

IV. Conclusion (Future Direction, Policy Implementation)

The TAM is among the highly regarded and extensively used models of research in consumer behaviour in digital product adoption. The TAM has made substantial contributions to consumer behaviour concerning PU, PEOU, and the impact on consumers' attitudes, intentions, and behaviors towards digital products. With changing digital environments and digital product adoption, the TAM has been widely used in e-commerce, mobile banking, health technologies, social media platforms, e-learning systems, and AI applications. The study shows that factors such as trust, security, emotion, social aspects, and user experiences affect the adoption of digital products besides technological features. While the TAM is based on robust theories and models, modern consumer behaviour involves various factors that should be considered. The results also suggest that consumer adoption behaviour differs based on demographics, technological settings, and cultural differences. Aspects like digital literacy, cybersecurity considerations, technology confidence, social interaction, and personalization are becoming critical in determining consumers' adoption behaviour in the modern-day digital market. This implies that companies and researchers should develop more robust and flexible models of behaviour that go beyond the basic tenets of TAM. The future studies on the theory of TAM and consumer behaviour regarding the adoption of digital products should involve considering more aspects relating to technology, behaviour and ethics to strengthen the explanations provided by technology adoption theories. Future studies should explore the role played by recent developments like AI, ML, blockchain, IoT, VR, and metaverse platforms in the acceptance of consumers. Future studies must consider issues involving the use of automated systems, algorithms, AI ethics, and cybersecurity issues. Studies on digital fatigue, affective attachment, gamification, consumer engagement, and hedonic motivation need to be conducted in the context of digital use. Insights into the enduring relationship between consumers and DT can only be gained through longitudinal investigations of post-acceptance behaviour, customer loyalty, continued intention, and

switching behaviour. There is a need for additional cross-cultural studies to identify demographic and cultural differences regarding the acceptance of technologies. TAM along with sustainability and socially responsible innovation theories can shed light on future digital consumption patterns. The adoption of digital products can only happen if proper policies are implemented. To ensure that all stakeholders participate equally in the digital economy, governments must put in place policies that address digital infrastructure, access to the Internet, and technology literacy. For an inclusive digital transformation to happen, there is a need for digital policies that will help minimize the digital divide among urban and rural populations, as well as rich and poor, highly educated and uneducated people. Policies on cybersecurity, data protection, and digital privacy must be made to build consumer trust in the use of DT and services. There is a need to make digital ethics and consumer data policy in order to protect individuals from digital risks and technology immorality.

This study contributes theoretically by extending the TAM to clarify digital product adoption by including behavioral, emotional, social, and technological variables such as trust, cybersecurity, social influence, emotional engagement, and user experience. A comprehensive knowledge of the links between perceived utility, perceived ease of use, behavioral intention, and consumer adoption behavior in current digital contexts is also provided by the study. Businesses, digital marketers, technology developers, and legislators may makes the utilisation of the outcomes of the study to create user-friendly, safe, and consumer-centric digital platforms that boost customer trust, happiness, and adoption. The paper also identifies research gaps in AI adoption, digital ethics, customization, and cross-cultural consumer behavior, suggesting ways to improve technology acceptance frameworks in fast-changing digital environments.

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