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ADOPTION BEHAVIOUR OF CRYPTOCURRENCY: THE UTAUT 2 FRAMEWORK EVIDENCE (MODERATING EFFECT OF GENDER IN PAKISTAN)

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ABSTRACT

It is based on the previous findings, and the study confirms the direct correlations between the primary independent variables, hedonic motivation, and ABC and adds new insights to the existing literature by analysing age as a continuous moderating variable. Through the use of a greater dataset of 532 participants who participated in a period of one year, the study increases the strength and the power of the statistics of the previous studies which were designed on a smaller group of participants. The study uses a two-step partial least squares Structural Equation Modelling (PLS-SEM) to measure direct and interaction effects. Although some research has previously considered innovativeness as a moderating variable, the empirical study has not been extensive enough to support this idea, the current research enriches the literature by operationalizing age as a continuous moderator, thus the research can consider individual differences more carefully. The results also support known indirect effects and prove that gender is a significant moderator of important relationships in the model, providing a more profound understanding of behavioural mechanisms underlying ABC. Such findings narrow the gap in theoretical knowledge by outlining the role of demographic factors in PLS-SEM models and offer practical value to the tailoring of strategies in different age groups.

Keywords: *Adoption behaviour, cryptocurrency, technological advancement*

Introduction

The growth of the internet, technological developments, and the rise in internet accessibility have contributed significantly to the transfer of traditional cash payments to the digital payment systems, and thus, the reformation of the monetary systems worldwide. Blockchain is one of the emerging technologies that have raised significant scholarly attention in various fields because of its transformational ability. It forms the foundation of a wide range of applications including financial systems and social services and has significantly transformed the modern business environment. With the increased adoption of blockchain technology in e-commerce platforms, the adoption of cryptocurrencies has been increasing rapidly. Satoshi Nakamoto wrote a white paper (Miers, 2013)on 1 November 2008 sent to the cryptography mailing list. Soon after the proclamation of the idea, Nakamoto presented the work in a workable format on the same date. He also published source code with elaborate instructions on how to execute it (Nakamoto, 2009).

Bitcoin and Ethereum are prominent and leading cryptocurrencies that are leading the advantage of the decentralized nature of blockchain to upkeep transparent and secure transactions. Blockchain is an immutable distributed registry; however, despite its inherent safety characteristics, it is prone to misuse by bad actors.

The introduction of Bitcoin in the year 2008 and its official release in the year 2009 led to the incremental development of the blockchain technology.

All the currencies possess their own specialized features, which help them to become different about others. Meanwhile, the demand of cryptocurrencies to be accepted is increasing, which demonstrates an increasing gap in knowledge in the market. The emergence of cryptocurrencies is an ever-growing need that creates the necessity to create technical features that should be based on good practices. There are many studies that have been placed in their context to other countries (Abramova, 2016; O. Alqaryouti, 2020).

Cryptocurrency and Pakistan: Owing to a growing interest in alternative financial instruments and a population that is more tech-savvy, the use of cryptocurrencies has increased dramatically in Pakistan during the past few years. With an estimated 20–27 million users and high rates of retail adoption, (Khan, 2025) the country has already become one of the leaders in cryptocurrency usage, despite the regulatory framework being unclear because virtual currencies are neither fully legalized nor even officially regulated. The government has introduced steps to improve the infrastructure of digital assets, including the creation of the Pakistan Crypto Council (PCC) and the Pakistan Digital Assets Authority, (Anmol, 2025) the goals of which are the creation of regulatory frameworks, the attraction of international investment, (Zeeshan, 2025) and the modernization of the financial system.

The leaders of the State Bank of Pakistan, the heads of the largest banking organizations in the country, and senior leaders of Binance, among them Global Chief Executive Officer Richard Teng, (Anmol, 2025) met and discussed the formation of the digital asset ecosystem in Pakistan. The summit aimed at mapping the future actions of the country in the context of having a safe, transparent, and innovation-oriented regulatory framework of digital assets. The key priorities that were identified during the discussion are responsible deployment of on- and off-ramp infrastructure, enhanced compliance and anti-money laundering/counter-terrorism financing (AML/CFT) standards, enhanced transparency in the market, and the further integration of regulated financial institutions in the digital asset environment. (News, 2025). Moreover, Pakistan has dedicated excess electricity to support Bitcoin mining and artificial intelligence data centers, which means it is a strategic move to utilize blockchain technology to grow the economy. Nevertheless, these developments show that the nation is moving from crypto scepticism to active participation in the digital economy, despite the current regulatory uncertainty, (Khan, 2025)which is reinforced by the State Bank of Pakistan's claim that cryptocurrencies have no official legal status.

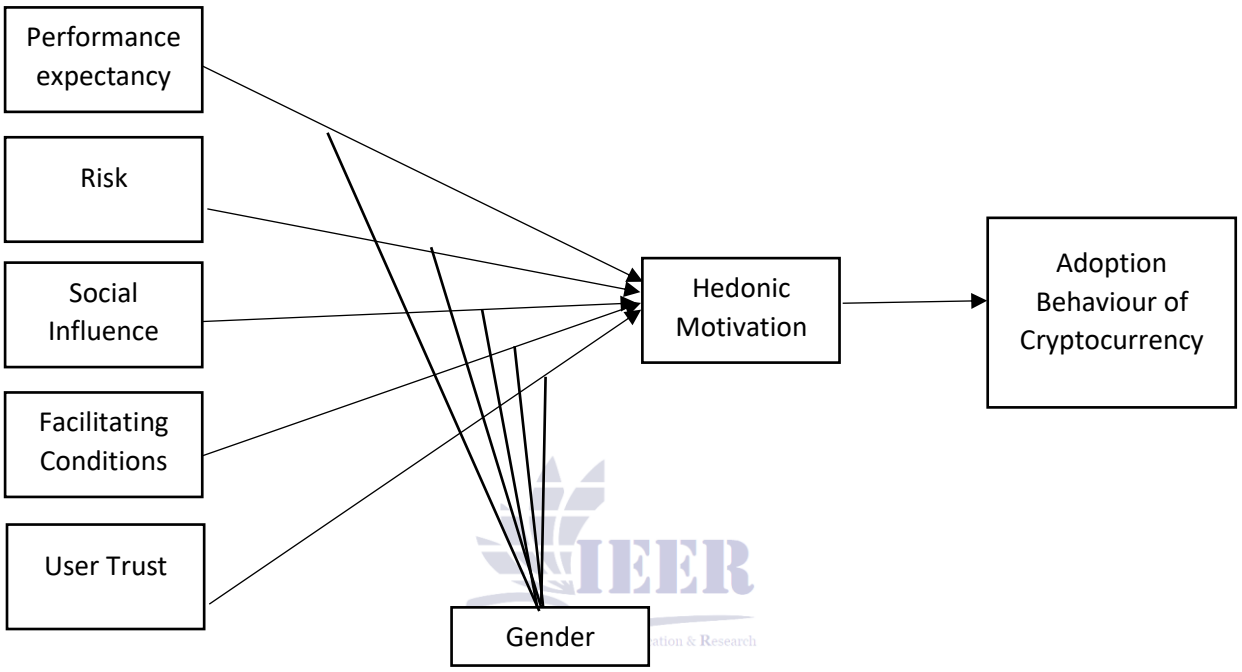
The adoption of cryptocurrencies among the general population is limited, and the distribution of interest among people has a high regional concentration, despite the increase in the number of those who are interested worldwide. Previous studies have found that technological and psychological factors that affect adoption (Sami, 2025)have varied; however, the findings obtained have been extremely dispersed and local. This study attempts to conduct a systematic study of the major factors that trigger the intention to use cryptocurrency, focusing especially on perceived usefulness, perceived trust, and perceived risk. The study adds to the current body of scholarly work by providing empirical data to gaps in the literature since the country of Pakistan has been under minimal academic focus in research.

Problem statement:

The behavioral determinants of cryptocurrency adoption is not well comprehended in the local context (Rana, 2025)despite the fact that cryptocurrency has rapidly spread in Pakistan with a large number of people, (Zeeshan, 2025) particularly a youthful and technologically skilled demographic, showing signs of wide adoption despite the ambiguous state of regulations and legal ambiguity, the number of transactions and users of cryptocurrency has been recorded to have enhanced dramatically even the market that is ambiguous on the issue of regulation, Prior research, including an earlier study that examined determinants of cryptocurrency adoption with innovativeness as a moderating variable, found the moderating effect of innovativeness to be statistically insignificant, suggesting that individual innovativeness alone does not effectively explain adoption behavior (Sami, 2025) in Pakistan's

unique socio-economic environment. Moreover, available literature tends to implement the general technology adoption models without a sufficient incorporation of key behavioral concepts like perceived benefits, risk, social influence, facilitating conditions, and user trust into one framework. Consequently, it is not clear how these factors affect cryptocurrency adoption mechanisms, and how these processes differ based on the demographic characteristics of gender (Venkatesh, 2012). Thus, a more in-depth study needs to be conducted to generate a complete hybrid of the process of these behavioral, social, and demographic elements interacting with hedonic motivation as a mediator to shape the cryptocurrency adoption behavior in Pakistan.

Liter



Literature Review:

This literature review will be used to synthesize the available studies on behavioural determinants to the adoption of cryptocurrency in Pakistan. In particular, the review aims to incorporate the conclusions of previous empirical and theoretical research that would help outline the most important psychological, technological, socio-cultural, and regulatory factors that influence the intent and choice among people to use cryptocurrencies. This review will give a detailed information by considering the variables of perceived usefulness, perceived risk, trust, awareness, social influence and regulatory uncertainty to understand how behavioural dynamics works within the Pakistani context. Besides, the synthesis identifies patterns, consistencies, and contradictions between studies, which allows to analyze the existing body of knowledge critically. By doing this, the review states such gaps in the literature as a lack of longitudinal evidence and representation of specific demographic groups and justifies the necessity to conduct further research. Finally, the proposed synthesis will form a theoretical and empirical basis on the analysis of cryptocurrency adoption behaviour in Pakistan and enlighten policymakers, financial institutions and researchers on elements that can be used to support or deter adoption.

Theoretical Foundations

The research is based on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) that offers the in-depth framework of studying consumer adoption of new technologies. UTAUT2 would be suitable in examining the behavior of adopting cryptocurrency in Pakistan as it incorporates technological, psychological, and social elements that shape the behavioral intention and usage.

In this study, the model is modified, and the researcher adds other constructs to it, specifically perceived risk and user trust to ensure that the study captures the distinctive features and uncertainties linked to using cryptocurrencies.

Performance Expectancy:
Performance expectancy is refer as usefulness, are the perceptions of individuals with respect to the benefits (Davis, 1989) of using cryptocurrencies including investment opportunities, reduced transaction costs, faster money transfers, financial independence, and hedging against inflation. This construct is consistent with performance expectancy in UTAUT2 (Venkatesh V. &., 2016), which has invariably been found to be a powerful predictor of behavioral intention. Perceived benefits have a special role (Alalwan, 2016) in the Pakistani setting as the economy is unstable, currency is undervalued, and traditional financial services are inaccessible to the population. Increased perceived benefits are consequently assumed to have a positive.

Risk:
Risk is a formal expression of the fears of the users (Alalwan, 2016) with regard to the possible losses and it includes financial volatility, security breach, fraud, regulatory uncertainty and lack of legal protection. The level of uncertainty (Bauer, 1960) is more likely to be high in order to adopt cryptocurrencies as compared to traditional financial technologies, thus making risk perception a decisive variable. Empirical research has shown that the perceived risk has a negative impact on behavioral intention, a position that is further enhanced in developing economies where regulation systems are still unclear. Therefore, the perceived risk is expected to become a barrier to cryptocurrency adoption in Pakistan.

Social Influence:
Social influence refers to the extent to which people view that their important others, (Alalwan, 2016)including peers, family members, coworkers, or social networks on the internet, (Ajzen, 1991)are recommending the use of cryptocurrency. This construct is in line with the (Venkatesh, 2012) social influence aspect of the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). Social influence is expected to play an important role (Davis, 1989) in influencing adoption intention in the context of Pakistan, a collectivist society where peer judgments play an important role in determining financial decisions.

Facilitating conditions:
Facilitating conditions are the presence of technical and infrastructural resources needed to use cryptocurrency (Dwivedi, 2019) and they include Internet access, access to mobile devices, digital payment systems and the relevant technical skills. This construct is in line with the dimension of facilitating conditions of the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) that is empirically related to behavioral intention (Davis, 1989)and actual use behaviors. In the case of Pakistan, the digital inequalities and the technological preparedness rates might have a considerable impact on the ability of individuals to be ready to use cryptocurrency.

User Trust:
User trust can be defined as the belief (Alalwan, 2016) the people are having on cryptocurrency systems, platforms, and exchanges, the blockchain technology on which they are built. Even though the original UTAUT2 model does not explicitly introduce the notion of trust, it is a well-known fact that it is one of the most important factors affecting online financial services and fintech applications adoption. Within the explicit relationship of cryptocurrency, where the process of transactions is decentralized and mostly immutable, trust as a functional practice is used to reduce uncertainty and thus promote adoption. As a result, user trust is included in the model as a predictive element of adoption behaviour.

Mediating Role of Hedonic Motivation
Hedonic motivation is theorized (Dhar, 2000) its dimensions is superior when consumers select among numerous items as the disposition of fun, thrill or delight (Venkatesh V. &., 2016)that is induced by the use of cryptocurrency, especially trading and speculative activities, In line with the (Venkatesh V. &., 2016) Unified Theory of Acceptance and

Use of Technology 2 (UTAUT2), one of the hypotheses is hedonic motivation that is the moderating factor that increases the relationship between the antecedent variables, that is, perceived benefits, social influence, facilitating conditions, and user trust and the outcome, which is the behaviour of adopting cryptocurrency. Those who feel more hedonic satisfaction with the use of cryptocurrencies are therefore more willing to seek the perceived benefits and react to social encouragement, thus escalating their intentions to use the technology.

Moderating Role of Gender

The UTAUT model assumes the presence of four moderators, that is, gender, age, experience, and voluntariness to expand its predictive validity. Since its formulation, UTAUT model has extensively been used to explain how people adopt technologies. (Dwivedi, 2019). to gender is theorized to play a moderating role. Research on job-related attitudes (e.g., Hall and Mansfield 1975; Porter 1963). Gender and age differences have been shown to exist in technology adoption context. (Morris, 2000),

Besides, men are comparatively than women, are agreeable employ more energy to incredulous different restraints and hitches to chase their objectives, while women inclined to emphasis more on the degree of effort that involved in the process of achieving their higher objectives The current study also examines gender as the moderating factor in the connection of independent predictors (Hall, 1971)and cryptocurrency adoption behaviour. Disparities in risk perception, trust, and financial decision-making between men and women have also been reported in previous literatures about the adoption of financial technology. Men inclined to rely on facilitating conditions when considering use of a new this can be partially consider perception (Venkatesh V. &., 2000).

The inclusion of gender as mediators (Venkatesh M. , 2003) (Lian, 2014) will bring the study to explain how demographic variables mediate how individuals respond to perceived benefits, risks, and social factors, thus providing a more detailed understanding of cryptocurrency adoption behavior in Pakistan.

Adoption Behaviour of cryptocurrency:

Behavioural control into its essential belief structure in the context of technology adoption (Dwivedi, 2019) The adoption behavior of cryptocurrency is typically understood in the context of digital finance studies as the stated intentions to use, invest, (Davis, 1989) or continue using technologies (Sami, 2025) jointly with their actual usage patterns (i.e., the degree to which they use cryptocurrency as a medium of exchange, investment vehicle, or payment instrument). This construct forms one of the key pillars of cryptocurrency research since it encompasses the determinants that dictate the choice of users to implement the decentralized financial technologies, (Taylor, 1995) thus combining psychological, social, economic, and technological determinants.

The empirical studies regularly place the adoption behaviour in contexts of technology-acceptance models. To use the example of scholars who apply the Technology Acceptance Model (TAM) and its derivatives, the behavioural intention to use cryptocurrency is considered the most explanatory variable in the adoption; other constructs, including perceived usefulness, perceived ease of use, and social norms, are proven to affect the behavioural intention, which, in turn, is connected with observed usage behaviour (Mofokeng et al., 2024). With Pakistan being a case in point, empirical evidence in the environment of emerging economies shows that the adoption behaviour is significantly explained by a set of behavioural and perceptual determinants. Indicatively, a research that used a prolonged Technology Acceptance Model found that subjective norms, technical self-efficacy, perceived usefulness, and perceived ease of use explained a significant percentage of the behavioural intention to adopt cryptocurrency. Additionally, the perceived risk had a strong impact in specific samples, but not necessarily negative, i.e. it did not negatively necessarily influence adoption by some subgroups (Frontiers in Psychology, 2021).

Furthermore, cross-cultural and larger fintech studies show that trust, social influence, facilitating conditions, and perceived risk are salient predictors of adoption behaviour in heterogeneous populations, with the socio-demographic variables of age and gender serving

as moderator variables (Social Innovation studies on cryptocurrency adoption). To conclude, the dependent variable of cryptocurrency adoption behaviour, which is a behavioural intention and actual usage behaviour of users, is the resultant of a complicated interaction between technological perceptions, such as perceived usefulness and perceived ease of use, social and behavioural factors, including social influence and trust, and perceived risk, therefore, making it an effective outcome variable in studies about cryptocurrency adoption.

Research Questions

RQ1: Does Hedonic Motivation mediate the relationship between each independent variable (Performance Expectancy, Perceived Risk, Social Influence, Facilitating Conditions, Usefulness/Trust) and ABC?

RQ2: Does Gender condition (moderate) the indirect effect of each independent variable on ABC through Hedonic Motivation?

Hypothesis

H1a: Hedonic Motivation mediates the relationship between Performance Expectancy and ABC

H1b: The gender will moderate the effect of Performance Expectancy on hedonic motivation, such that the effect is stronger for males.

H2a: Hedonic Motivation mediates the relationship between Perceived Risk and ABC.

H2b: The gender will moderate the effect of Risk on hedonic motivation, such that the effect is stronger for females.

H3a: Hedonic Motivation mediates the relationship between Social Influence and ABC

H3b: The gender will moderate the effect of Social Influence on hedonic motivation, such that the effect is stronger for males.

H4a: Hedonic Motivation mediates the relationship between Facilitating Conditions and ABC.

H4b: The gender will moderate the effect of Facilitating Conditions on hedonic motivation, such that the effect is stronger for males.

H5a: Hedonic Motivation mediates the relationship between User Trust and ABC.

H5b: The gender will moderate the effect of User Trust on hedonic motivation, such that the effect is stronger for females.

Research Methodology

All of the scales were adapted from prior research. The items are included in the Appendix. The scales for the UT AUT constructs (i.e., performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioral inten- tion) were adapted from (Venkatesh V. &., 2016),Entirely items were measured using a five point Likert scale, with the being "strongly disagree" and "strongly agree.". Gender was coded using a 0 or 1 dummy variable where 0 represented male and 1 present female. Section a comprises with demographic information, section B with the familiarity of technology background, with answer no with tech background the form close to them. This make the more clarity that respondents are familiar or user of cryptocurrency.

Measurement:

In line with the existing literature, the direct correlations between the independent variables, hedonic motivation, and ABC were supported in the present study through the application of a broad dataset. It collected 532 valid responses in the twelve months hence making a significant increase in the sample size compared to that of the preliminary study that used 437 participants. This boosts the statistical power of the augmented sample in turn giving more strength to the empirically reached conclusions. Innovativeness as a moderating variable has been analyzed in previous research, but the research studies provided inconclusive empirical evidence. On the basis of these restrictions, the current research contributes to the literature by simulating gender as a continuous moderating variable as two-stage PLS-SEM. This methodological option allows analyzing individual differences in a subtler way than categorical or multi-group methods.

Measurement Model:

To ensure the stability of the models and strong estimation, the current study utilized a simplified structural model that was based on the UTAUT2 framework. Hedonic motivation was used as a mediating construct and age as a continuous moderating variable, in a two-stage PLS-SEM model. Due to the non-equal number of groups and the difficulties encountered when

estimating in the situation of multi-group analysis, gender was added as control variable. Table 1 provide the outer loadings and VIF.

TABLE I
Outer Loading

Outer Loading	Total	VIF	Female	VIF	male	VIF
ABC#1	0.853	2.252	0.650	1.332	0.884	2.891
ABC#2	0.842	2.110	0.790	1.676	0.855	2.383
ABC#3	0.893	2.667	0.901	2.194	0.898	2.926
ABC#4	0.743	1.782	0.791	1.709	0.740	1.815
FC#1	0.840	1.844	0.903	1.747	0.842	1.876
FC#2	0.710	1.916	0.606	1.962	0.711	1.933
FC#3	0.863	2.467	0.800	2.485	0.863	2.542
FC#4	0.802	1.605	0.780	1.719	0.807	1.593
HM#1	0.658	1.411	0.330	1.539	0.660	1.376
HM#2	0.801	1.642	0.489	1.238	0.824	1.823
HM#3	0.774	1.698	0.369	1.606	0.793	1.747
HM#4	0.797	1.435	0.915	1.026	0.828	1.683
PE#1	0.840	2.333	0.917	3.837	0.803	2.019
PE#2	0.926	3.415	0.951	5.356	0.912	2.940
PE#3	0.913	3.774	0.923	4.326	0.917	3.894
PE#4	0.905	3.333	0.903	3.407	0.901	3.341
Risk#1	0.799	1.614	0.674	1.511	0.869	1.652
Risk#2	0.654	1.685	0.598	1.621	0.626	1.712
Risk#3	0.858	2.542	0.921	2.338	0.825	2.674
Risk#4	0.875	1.960	0.871	1.785	0.831	2.041
SI#1	0.881	2.553	0.739	1.730	0.891	2.815
SI#2	0.847	2.033	0.671	1.235	0.873	2.372
SI#3	0.874	2.485	0.832	1.952	0.878	2.580
SI#4	0.730	1.566	0.699	1.293	0.756	1.653
UT#1	0.879	2.073	0.820	2.322	0.886	2.040
UT#2	0.841	1.935	0.822	2.273	0.839	1.859
UT#3	0.817	1.489	0.837	1.296	0.816	1.535

TABLE II
Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ABC	0.854	0.870	0.901	0.697
FC	0.824	0.848	0.881	0.650
HM	0.760	0.788	0.844	0.577
PE	0.919	0.945	0.942	0.804
Risk	0.835	0.891	0.877	0.642
SI	0.854	0.867	0.902	0.697
UT	0.802	0.805	0.883	0.716

TABLE III
Specific indirect effects

	Original sample (O)	T statistics (|O/STDEV|)	P values	
PE > HM > ABC	0.021	0.469	0.320	Not Significant
Risk > HM > ABC	0.018	0.780	0.218	Not Significant
SI > HM > ABC	0.259	8.744	0.000	Significant
UT > HM > ABC	0.256	4.576	0.000	Significant
FC > HM > ABC	0.155	4.903	0.000	Significant

TABLE IV
Indirect Specific Effect

	Difference (Male - Female)	1-tailed (Male vs Female) p value	
PE > HM> ABC	-0.070	0.767	Not Significant(H1b rejected)
Risk >HM> ABC	-0.024	0.698	Not significant(H2b Accepted)
SI > HM > ABC	0.154	0.025	Male significant (H3b Accepted)
UT> HM> ABC	0.094	0.166	Female significant (H4b Accepted)
FC> HM> ABC	0.149	0.007	Male significant (H5b Accepted)

Outer-loading of most of the indicators have a range of 0.654 to 0.926, which means that the items tend to be satisfactory in their description of the constructs assigned to them. Most of the loadings are above the standard level of 0.70 thus supporting that the indicators are good estimates of the latent variables. Some of the items, such as HM1(0.658) and HM2 (0.801 in the case of the total sample and a lower value with female subsample), are slightly below or close to the 0.70 threshold; however, they can be retained because the overall construct reliability as determined by composite reliability and average variance extracted (AVE) is satisfactory. The loadings are consistent among the gender groups with slight differences only, which shows that the measurement model is stable among male and female respondents. Taken together, the findings support convergent validity of the constructs in the partial least squares structural equation modelling (PLS-SEM) paradigm.

The values of the VIFs of each indicator varied between 1.411 and 3.774, none of which exceed the standard 5-value, which shows that there was no multicollinearity problem in the structural model. Though the values of indicators related to Performance Expectancy have a relatively large VIFs (between 3.415 and 3.774), they are also within the acceptable limits. The current findings therefore suggest that the constructs of prediction are not similar and they do not overlap to the extent of discrediting the derived path coefficients. Based on this, all the indicators must be maintained to be assessed later by PLS-SEM.

Cronbach alpha, composite reliability coefficients (rhoa and rho c), and average variance extracted (AVE) were used to test internal consistency and convergent validity. The outcomes of the seven constructs, which are; ABC, FC, HM, PE, Risk, SI and UT are as follows. The alpha coefficients of Cronbach range between 0.759 of the HM construct and 0.919 of PE construct hence exceeding the generally accepted standard of 0.70 and indicating an acceptable level of internal consistency of all constructs under analysis. Simultaneously, the composite reliability estimates (0. 942) of HM and PE are between 0.844 and 0.942, respectively; these values are significantly

higher than the minimum acceptable value of 0.70, which supports the high reliability of these latent constructs. In addition, the rho a estimates (rhoa), that produce a more accurate measure of reliability in the PLS-SEM framework, also have a value above 0.70 in all the constructs, which is another indication of internal consistency. The average variance extracted (AVE) was used to test convergent validity. The constructs all had AVE values above the traditional standard of 0.50 with values ranging between 0.576 and 0.804 as the constructs were the HM construct and PE construct respectively. These findings show that all the constructs explain more than half the variance in its respective indicators, which supports a sufficient convergent validity.

Mediation

Hedonic Motivation does not serve as a mediating construct in the relationship between Performance Expectancy, Perceived Risk to ABC. Hypothesis H1a and H2a (t:0.469, p: 0.320), Risk → HM → ABC (t: 0.780, p: 0.218), results declare insignificant relations.

The findings suggest that consumers' perceptions about performance expectancy and perceived risk do not affect their behaviour towards the ABC. Hedonic motivation found significant for social influence: (t: 8.744, p: 0.001), Facilitating Conditions (t: 4.903, p: 0.001), and User Trust: (t4.576, p: 0.001) the hypothesis H3a, H4a, H5a are accepted. Since This advocates that people's hedonic motivation to use a technology as the recreation of fun and enjoyment increases when they are impacted by prominent referents like friends, peers, or from social media, which subsequently improves ABC. Consequently, the social influence mechanism primarily operates by rendering the system more enjoyable and exciting.The facilitating conditions affecting to ABC, users experience greater comfort and reduced uneasiness when they hold access to robust infrastructure, inclusive support amenities, and an large quantity of relatable financial incentives. Concerning user trust and ABC: In contexts that involve privacy concerns, security threats, trust assumes a crucial role when users perceive that technological system, considering the provider reliability, security that aligned with their best interests.

Mediation and Gender Differences (Specific Indirect Effects)

To test the mediating role of Hedonic Motivation (HM) and the moderating role of gender towards male and female, a PLS-SEM Multi-Group Analysis (MGA) has been conducted bootstrapping. The result of the analysis concentrated on specific indirect effects, since it is recommended in research in PLS-SEM for testing mediation and moderated mediation role It was found that gender has a selective moderating effect on the mediation processes. The statistically significant difference between the indirect effects of the Performance Expectancy (PE) and Perceived Risk on the outcome variable (ABC) through HM within the male and female groups was statistically insignificant (p: 0.465 in the case of PE and p =.604 in the case of Perceived Risk). Therefore, HM seems to interpose the correlations between PE and ABC, and Perceived Risk and ABC, in a similar way in both genders.

Also, the indirect effect of the User Trust (UT) on ABC through Hedonic Motivation (HM) are not significantly different between genders (p:0.332), which means that the pleasure-driven process between UT and ABC works in the same manner by both male and female participants. On the other hand, there are major gender disparities in the case of Social Influence (SI) and Facilitating Conditions (FC). Indirect effect of SI to HM to ABC is much more effective on males than on females (0.154, p = 0.50) which means that social cues and peer influence are more effective in increasing hedonic motivation, thus increasing the effect of ABC in male participants. In the same manner, FC HM ABC mediation is much stronger in males (0.149 p = 0.015), so when the supportive conditions are in place (e.g., resources, technical support, ease of access) males experience greater enjoyment that, in turn, results in greater ABC than in females. Hence Hypothesis H1b (PE → HM → ABC), H2b (Risk → HM → ABC), H5b (UT → HM → ABC) are insignificant, whereas H3b (SI → HM → ABC) and H4b (FC → HM → ABC) are found significant.

For the most part, the outcomes prove that gender is selective to moderate the hedonic-based mechanisms of the UTAUT framework. Although performance, risk and usefulness have similar effects of enjoyment to the ABC by both the males and females, the effects of social influence as well as facilitating conditions are stronger in hedonic motivation in the males. It means that males tend to transform social cues and enabling conditions to enjoyment more, and this further improves their behavioural consequences.

Discussion and Theoretical Contribution

This paper builds on the existing literature on the predictors of cryptocurrency adoption behaviour by proposing hedonic motivation as a key mediating factor and analyzing gender-related variations in the process in the framework of UTAUT2. Although previous research on cryptocurrency adoption has focused on performance expectancy (e.g., profitability, efficiency) as the main predictor of adoption, perceived risk, trust, and enabling conditions, it has apparently not paid enough attention to the emotional and experiential processes in terms of how they influence the user behaviour.

In line with the prior studies of cryptocurrency adoption, our findings affirm that core UTAUT constructs performance expectancy, perceived risk, social influence, facilitating conditions, and trust/usefulness are significant predictors of adoption-related behaviours. Nevertheless, the given research adds to the body of literature by showing that these impacts are propagated, at least partially, by hedonic motivation, i. e. the fun, thrill, and enjoyment of using cryptocurrencies. This result has been corroborated by recent research in fintech and crypto that has revealed that the use of cryptocurrencies is not entirely instrumental but is also motivated by novelty, excitement and speculative interest.

More to the point, as our multi-group analysis has shown, the strength of these hedonic-based mechanisms varies according to gender, which sheds new light on the psychological processing of stimuli related to cryptocurrency by male and female users.

Gender, Hedonic Motivation, and Cryptocurrency Adoption

The moderated mediation analysis points to two very significant findings. One, the indirect impact of social influence on the adoption behaviour through hedonic motivation is much stronger among the males compared to the females. Social signals in the cryptocurrency markets, including peer-to-peer conversations, Internet groups, endorsement by social media influencers, and media buzz tend to increase excitement and speculative sentiment. We find that the male users are more likely to translate such social signals into enjoyment and thrill, which in turn results in more adoption behaviour. This is in line with behavioural finance and crypto-trading literature that indicates that men are more sensation-seeking, competitive and socially motivated in speculative settings.

Secondly, the mediating effect of facilitating conditions on cryptocurrency adoption via hedonic motivation is significantly greater among male participants.

This result suggests that the availability of well-developed technical systems, convenient platform design, and regulatory or economic assistance results in increased experiential pleasure in male users when engaging in cryptocurrency activity. Contemporary research on cryptocurrency adoption has found technological complexity and usability to be essential factors in determining cryptocurrency adoption; our data is relevant to this discussion in that it shows that facilitating conditions not only minimize obstacles to adoption but also promote successful involvement and pleasure among male users, which strengthens adoption.

In contrast, the mediated effects of performance expectancy, perceived risk and trust/usefulness do not have statistically significant differences among male and female participants. These results indicate that despite the differences in the perceived importance of profitability, security, and trust as significant attributes of cryptocurrency platforms between the two genders, downstream effect of these attributes on the perceived enjoyment and adoption behaviour seems to be similar to a large extent, irrespective of gender groups.

Theoretical Contributions

Earlier research on the cryptocurrency adoption has generalized the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) to include constructs like trust and financial literacy, thus illustrating the impact of the high relevance of performance expectancy, facilitating conditions, and social influence on the adoption intentions (Salim et al., 2025).

Empirical studies in cryptocurrency and in fintech literature demonstrate that gender is a adapting factor to the connotations among core accepted constructs and adoption behaviour, through males and females displaying divergent reactions towards User trust, performance expectancy, social influence and perceived risk, facilitating conditions (Juita et al., 2023; IRJEMS, 2024). Macro-level studies also support the presence of the gender gap in the use of the financial technology products, as women showed lower rates of adoption than men make. (BIS Working Paper, 2021).

This study makes three major theoretical contributions.

The present work contributes to the existing body of research on the adoption of cryptocurrency by going further than the traditional direct-effect frameworks. First It demonstrates that hedonic motivation functions as a pivotal psychological mechanism, mediating the relationship between perceptions derived from the Unified Theory of Acceptance and Use of Technology (UTAUT) and observed adoption behaviour.

The theoretical contribution helps to resolve the reason behind cryptocurrency adoption often displaying aspects of high volatility, hype cycles, and bubbles phenomena - aspects that cannot be appropriately described by rational utility models.

Second, the conceptualization of gender in technology adoption is improved by integrating gender-based modulated mediation into the UTAUT2 framework, which is used in this study. Instead of moderating the direct effects, gender controls the translation of instrumental and social determinants to affective engagement which in turn affects behavioural intention. This conceptual advance offers a more subtlety apprehension of gender discrepancies lingers in fintech and cryptocurrency contexts.

Third, the investigation supplements the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) by elucidating that social influence and facilitating conditions to undertake discriminating significance while they stimulate hedonic motivation, predominantly among male users. This observation suggests that the enjoyment and excitement will be the key, and not marginal, factors driving the adoption of cryptocurrencies in high-uncertainties, high-novelty technological settings.

Recommendations for Policymaker and Cryptocurrency Platform Implications. Practically, the findings of the research indicate that, in order to capture the attention of male users, cryptocurrency platforms must focus on social exposure, community participation, financial investments, and well-developed technical platforms to enjoy the experience and participate in the activity. On the other hand, to the female users, risk management, credibility, and creating long-term values should be the main focus of the adoption strategies than primarily focusing on the excitement and social hype.

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