MEDIA & COMMUNICATION STUDIES | RESEARCH ARTICLE

Factors influencing the adoption of Cryptocurrency in Jordan: An application of the extended TRA model

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Abstract: Without the need for third-party authorization, cryptocurrency allows for anonymous, secure, rapid, and low-cost financial transactions. Cryptocurrencies are becoming more widely acknowledged around the world, but their uses remain limited. The present study investigated the factors that propel behavioral intention of individuals to use cryptocurrency in Jordan using the extended Theory of Reasoned Action (TRA) model. Survey questionnaires were sent to 1000 active Facebook users to gather data, and the entire 600 valid responses were evaluated utilizing Structural Equation Modeling (SEM). Subjected norm, perceived risk, perceived usefulness, perceived enjoyment, perceived ease of use and trust, all impacted intention to use cryptocurrency positively, while attitude towards cryptocurrency affected intention to use cryptocurrency. Additionally, attitude towards cryptocurrency was influenced by perceived risk, perceived usefulness, perceived enjoyment, and perceived ease of use; while facilitating condition did not show influence. Also, attitude towards cryptocurrency had a mediating influence on the association between subjected norm, perceived risk, perceived usefulness, perceived enjoyment, and intention to use cryptocurrency.

Subjects: Internet & Multimedia - Computing & IT; Management of IT; Information & Communication Technology; ICT

Keywords: Cryptocurrency; TRA model; attitude; behavioral intention to use; Jordan

1. Introduction
The world has significantly transformed since the last three decades owing to globalization, and the transformations have considerably improved how people live, how people communicate, and
how businesses are executed. Globalization has indeed opened up various new opportunities to mankind. Somehow, the effects of globalization have been unequal, and the resulting incidents of some corporate scandals have raised sharp criticisms (Almajali et al., 2022; Al-Naimi et al., 2021; Aysan et al., 2021), and concerns as well.

Cryptocurrency is a digital form of currency, and like the traditional currency, Cryptocurrency is also utilized as an exchange medium through a technology called “blockchain technology.” Other names associated with Cryptocurrency include payment token, crypto token, electronic currency, cyber currency, virtual commodity, and virtual assets (Law Library of Congress, U.S., 2021). Cryptocurrency allows direct money transfer, that is, the transfer is without the involvement of financial intermediaries like banks, and it is also free from government control (Nakamoto, 2008). Cryptocurrency customers are provided with options beyond debit/credit cards or fiat currencies. In this regard, the first form of Cryptocurrency is Bitcoin which was developed Satoshi Nakamoto (2008).

Bitcoin has been used as currency for simple tasks like Cryptocurrency trading for programming assistance. Interestingly, trading of pizzas costing USD 25 delivered for 10,000 Bitcoins was the first reported Bitcoin commercial transaction, and after that, Bitcoin had exponentially increased in value. By 2022, Cryptocurrency has become a speculative instrument for trading of short-term, and it has been kept as an investment within the crypto-asset category, and utilized as the exchange/currency medium for transactional purposes. Bitcoin value fluctuates significantly, and 2021, one Bitcoin value was at approximately USD 67000, signifying a great growth after 12 years of its launch.

Bitcoin is now globally accepted in various businesses and retailers with El Salvador being the first country that has formally recognized this type of Cryptocurrency as legal tender (Businessstech, 2021). Bitcoin trading is unique in a sense that it is traded on regulated exchanges even though its prices are unregulated. After the introduction of Bitcoin, various other exchange traded funds and products of crypto investment were introduced. Such developments have increased the reliability of Bitcoin, and Cryptocurrency in general, as a practicable alternative of trading and investment. PWC (2020) being the Global professional services firm highlighted that in 2020, crypto hedge funds value had expanded double their size from the previous year (2019).

Deloitte (2015) perceived Cryptocurrency as a potentially disruptive technology with the ability to resolve some incessant finance and business issues, and CoinMarketCap (2020) has reported that, in the market as at May 2020, there were approximately 5,400 different types of cryptocurrencies, led by Bitcoin with a market capital amounting to US $160 billion. Triple A in 2021 reported the presence of roughly 300 million global users of Cryptocurrency, with approximately 5.8–11.5 million active wallets. In the same year, CoinMarketCap reported that the market value of Cryptocurrency had reached nearly $2 trillion. These developments demonstrate the potential of Cryptocurrency in disrupting the conventional system, turning itself into a major currency (Alharbi & Sohaib, 2021). Still, thus far, the use of Cryptocurrency has been limited in terms of its extent and geographical spreading (Sohaib et al., 2019), and so, as indicated by Abbasi et al. (2021), its full potential has yet to be reached, as the acceptance is still not vast enough.

Cryptocurrency has been examined by scholars, but the focus has primarily been on its use in the western domains (Ter Ji-Xi et al., 2021) or in certain perspectives of culture (Shahzad et al., 2018; Walton & Johnston, 2018; Zamzami, 2020). As such, the scholarly findings of Cryptocurrency are limited, particularly in the context of Jordan. Researchers including Noreen et al. (2021) and Triple (2021) have mentioned that despite the increasing usage of cryptocurrency in developing countries, it was still in infancy stage. Furthermore, as indicated by Noreen et al. (2021), albeit the sufficient knowledge regarding this form of currency among many users, only a handful of them actually use it. Not only that, the status of Cryptocurrency in terms of its adherence to the Sharia law is still being contested (Asif, 2018).
It was not until year 2011 that the topic of Cryptocurrency began to be published, and it was not until 2013 that more renowned peer-reviewed journals began taking in Cryptocurrency-related papers (Baur et al., 2015). For these reasons, information on cryptocurrencies associated with other well-known financial technologies like mobile payment or internet banking is still rather limited. Furthermore, past studies on Cryptocurrency and the adoption of blockchain have been mostly concentrating on established economies like the EU, USA and UK (Al-Amri et al., 2019; Ermakova et al., 2017; Roos, 2015; Walton & Johnston, 2018). For this reason, Cryptocurrency acceptance in countries like Jordan in relation to its theoretical contributions and empirical evidence has been limited. Also, the perspectives of users in regards to this form of currency have not been taken into account in studies (Yeong et al., 2019). Further, the factors that considerably affect Cryptocurrency adoption like the factors of risk, trust and security have not been adequately examined (Al-Amri et al., 2019). Equally, within the context of Jordan, the adoption of Cryptocurrency has not been empirically examined (Al-Amri et al., 2019). In other words, the Behavioral Intention (BI) to use Cryptocurrency technology needs to be empirically investigated, particularly in developing economies.

Shahzad et al. (2018) mentioned that regulations are an important step in creating awareness and in increasing the sureness of consumers towards a new financial technology so that it will be accepted and used by the vast majority. For developing economies, Shahzad et al. (2018) indicated that innovative technology adoption would increase the country’s financial power and the citizen’s autonomy. However, as indicated by Adel Al-Sharkas, the then governor of Jordan’s Central Bank, digital currencies are still prohibited in Jordan.

As mentioned by the Governor, the ban was executed for numerous reasons, most remarkably, it was for defending its dealers because they were generally unskilled in this field, and also to protect the depreciation of currency as a consequence of exchange rate fluctuations. Furthermore, losses could potentially occur, especially from fraud, piracy, hacking, and theft. The Governor also mentioned that in Jordan, a legal framework for the right to appeal before justice authorities was nonexistent. Also, there were concerns over the issues of laundering operations and terrorist administration financing.

The former head of the Association of Banks in Jordan, Mr. Mufleh Akl, perceived Cryptocurrency investment as wasted effort. In fact, he compared Cryptocurrency investment as a form of gambling caused by the lack of lucrative investment prospects. He further highlighted the need to educate the young on fraud cases associated with Cryptocurrency investments.

Despite the prohibition, people still find ways to engage in trading in these currencies, and those trading in cryptocurrencies usually would use brokers abroad or use the conventional methods such as the use of cash to pay to the currency owner, by transferring the money to the accounts of brokers, through electronic means. An expert in blockchain technology, Moaz Khalilat in an interview with Al-Monitor mentioned that the Jordanian law did not prohibit dealing in cryptocurrencies, rather, it was the Central Bank that forbade banks from involving in these currencies.

In an interview with Al-Monitor, Mr. Muhammad al-Srouji, a Jordanian expert in foreign exchange trading, perceived digital Cryptocurrency as an expanding market, and noted that Jordanian legislators were cautious albeit the ban. In addition, he perceived Cryptocurrency as an ideal opportunity for the government of Jordan to create laws and bring in investments to the country in billions, considering that Jordan is in possession of suitable technological infrastructure.

In October 2021, a civil society organization called Jordanian Labor Watch reported that COVID-19 pandemic had led to the loss of 140,000 jobs in 2020, which has exacerbated the economic crisis faced by Jordanian adults. In this regard, Mr. Hussam Ayesh, an economic and social expert, reported that Jordanians were looking for job opportunities and extra income, or a rapid fortune with the least amount of effort. According to him, job search demonstrates the technical
competencies of the young who saw alternatives to the lack of job opportunities in all sectors (private and public). He further pointed to the existence of vast digital infrastructure in Jordan, and there were those who were able to earn thousands of dinars from engaging in activities that utilize digital infrastructure, as can be exemplified by YouTube gamers. He added that some unemployed individuals were actually earning handsomely via trading in these currencies.

Cryptocurrency trading market is undeniably risky, but millions of dollars were being invested in this ironically unregulated market, which means that traders in this market were unprotected. Here, the non-existence of regulation was factored by the anonymity of the currencies. Considering the risks involved in Cryptocurrency trading, the current standpoint of Jordanian Government on it, and the fact that people in Jordan were still involved in it, it is reasonable to determine the factors affecting the behavioral intention to use Cryptocurrencies in Jordan. The factors impacting behavioral intention of Jordanian to use Cryptocurrency was thus explored in this study. Specifically, this study attempted to find out what motivates and impedes people in Jordan in the use of this form of currency. Additionally, this study attempted to find out the relations between these factors, both direct and indirect.

In this regard, a number of contributions made by this research are worthy of mention. Firstly, the current study examined Cryptocurrency from the perspective of man, finance, and technology through a unique model. This bridges the literary gap as most studies on the subject were mostly focusing on the technological points of view. Accordingly, the present study employed Theory of Reasoned Action (TRA) with an addition of a number of factors from relevant technology adoption models. The model was tested empirically in Jordanian context. This study is the first one that empirically examined Jordan on the subject of Cryptocurrency, and therefore it adds to the theoretical knowledge while presenting the first empirical information on the subject at hand in Jordanian context. This will increase the knowledge on Cryptocurrency and provides valued information and recommendations to be perused by interested parties like investors, government, and the public. Figure 1 shows cryptocurrency users in Jordan (2022).

2. Theoretical background

2.1. Empirical research on behavioral intention to use cryptocurrency

The factors impacting Cryptocurrency usage have been an increasingly intriguing subject to researchers, and yet, the available information on Cryptocurrency is still scarce while the available studies on this subject were presenting contradictory findings (Al-Amri et al., 2019; Arias-Oliva et al., 2021). Notably, studies (e.g., Albayati et al., 2020; Mazambani & Mutambara, 2019; Schaupp & Festa, 2018; Zamzami, 2020) were mostly showing that behavioral intention to use Cryptocurrency was mainly foretold by positive attitude towards it. Somehow, attitude was
found to be affected by different factors. For instance, Jankeeparsad and Tewari (2018) found trust as the most important factor of a positive attitude towards the use of Bitcoin in South African context. Similar finding was also reported for Bitcoin usage in Korea as in Lee et al. (2018), China as in Shahzad et al. (2018), Malaysia as in Sas and Khairuddin (2017), and Cyprus as in Zarifis et al. (2014).

Additionally, attitude towards Cryptocurrency use was found to be influenced by user satisfaction (Alaeddin & Altounjy, 2018), optimism, innovativeness (Sohaib et al., 2019), and Cryptocurrency know-hows (Ostern, 2018; Sun et al., 2020). In addition, the investment in Bitcoin was frequently influenced by significant others (e.g., friends, family, social group, etc.) whereby positive attitude of significant others would influence one into investing in Bitcoin or other cryptocurrencies (Boxer & Thompson, 2020; Gazali et al., 2019; Jankeeparsad & Tewari, 2018; Kim, 2021; Schaupp & Festa, 2018; Walton & Johnston, 2018). Contrariwise, subjective norm may not be regarded as an influencing factor as evidenced by Zamzami (2020) in Indonesia, and Mazambani and Mutambara (2019) in South Africa. In Pakistan, Ullah et al. (2021) indicated that subjective norm did not discernibly affect behaviour intention towards Cryptocurrency usage. In another study in Spain by Arias-Oliva et al. (2021), it was indicated that subjective norm was an enabling factor that positively affected cryptocurrency’s intention to use.

The perception of risk has a strong negative impact on the intention to adopt cryptocurrency (Abramova & Böhme, 2016; Gazali et al., 2019; Gil-Cordero et al., 2020; Sohaib et al., 2019; Sun et al., 2020). However, some scholars (see: Nadeem et al., 2021; Nuryyev et al., 2018; Ter Ji-Xi et al., 2021; Yoo et al., 2020) reported otherwise. Also, depending on the situation and social influences, Arias-Oliva et al. (2021) discovered that the impact of perceive risk on intention to use Cryptocurrency can either be positive or negative. Equally, a significant positive effect of perceived usefulness and ease of use was reported in some studies (see: Albayat et al., 2020; Arias-Oliva et al., 2019; Nadeem et al., 2021; Nuryyev et al., 2018). On the other hand, Shahzad et al. (2018) and Walton and Johnston (2018) found indirect impact of perceived usefulness on intention to use. Meanwhile, Janssen et al. (2015) stated that the effect of perceived usefulness on behaviour intention differs according to the class of consumer. Additionally, behaviour intention to use of user has been found to also be affected by facilitating conditions (Jankeeparsad & Tewari, 2018; Ter Ji-Xi et al., 2021), and perceived enjoyment (Nadeem et al., 2021).

Considering these findings, various factors have been found to affect behaviour intention to use. Also, due to the difference in culture and other aspects, the aforementioned factors may impact behaviour intention to use in a different manner. Notably, the use of Cryptocurrency remains unexplored in some regions of the world, like in Jordan, even though it has been evidenced that Jordanians have been showing their eagerness towards adopting new technologies (Al-Monitor, 2022; Jordanian Central Bank, 2020). Google trends (2022) were accordingly showing the awareness of Jordanians towards Cryptocurrency, and yet, most have been hesitant to engage in it owing to the following factors: lack of trust, Jordanian government’s current position towards Cryptocurrency and its technology, and the lack of supporting formal institutions.

Clearly, evidences on the factors impacting the intention to use Cryptocurrency appear to be contradictory, and hence, the results of existent studies are not as generalizable to the Jordanian context owing to differences, including those related to culture. More in-depth studies should be carried out, especially in determining what motivates Jordanians to accept or reject cryptocurrency.

### 2.2. Technology acceptance model (TAM)

In TAM, “perceived usefulness” and “perceived ease of use” are factors that majorly affect the attitude of people in adopting information system (Davis, 1989). Hence, Perceived Usefulness (PU) in this study is associated with the impression that the more people are confident that Cryptocurrency will improve their investing portfolio, trading profits or payment efficiency, the more probable it is that they will use it. Meanwhile, Perceived Ease of Use (PEOU) implies that
people are more expected to use Cryptocurrency if it is believed to be easier to use (e.g., to trade and invest in Cryptocurrency). The initial reason for using TAM was to analyse the acceptance of new technology. However, TAM has been criticized for its unclear and inconsistent results (Almajali & Dahalin, 2010; Feng et al., 2021; Legris et al., 2003).

Beliefs about the usefulness and ease of use of technology are crucial factors of its use in TAM. Meanwhile, other variables with potential impact on technology use (e.g., social influence and access to resources) are not taken into account. Hence, in its original form, TAM will not cater to this study. In the context of Cryptocurrency usage, among the factors that may influence usage include resources, skills, risks, social influences, and opportunities to use Cryptocurrency. In other words, albeit its ease of use and usefulness, people may still hesitate to use Cryptocurrency because of other factors such as social influence and lack of resources (just to mention a few).

2.3. Theory of planned behaviour (TPB)
Theory of Planned Behaviour (TPB) by Ajzen (1991) has been popular among researchers in predicting social behaviour of human. This theory perceives behavioural intention as a direct antecedent of actual behaviour, and is collectively established by subjective norms, attitude, and perceived behavioural control (Ajzen, 1991). Gangwal and Bansal (2016) indicated that the inclusion of perceived behavioural control in technology researches covers the impact of ability, skill, resources accessibility and support from others on intention to use the technology.

2.4. Theory of reasoned action (TRA)
Theory of reasoned action (TRA) illustrates the behaviour of people when they are subjected to the control of others. TRA which was introduced by Ajzen and Fishbein in the 1980s, was grounded upon social psychology discipline. It postulates that a person’s intention to execute certain behavior, or the degree to which a person is ready to execute that behavior becomes the main behaviour determinant. There are two factors affecting behavioral intention namely attitude and subjective norms (Ajzen, 2020). Attitude in this context concerns the person’s assessment towards executing the behaviour in question, while subjective norm concerns what the individual perceives concerning the social pressure towards the performance or non-performance of that behavior (Ajzen & Fishbein, 1980). Hence, as suggested by TRA, the effect of attitude and subjective Norm on behavioral intention has a linear relationship, and both attitude and subjective norm will determine the person’s actual behavior. In this regard, higher attitude and social pressure towards certain behavior increase the intention towards the execution of that behavior, and so, the execution of the behaviour is highly likely.

TRA has been popular among researchers because it is simple, has good explanatory power, and is able to use various factors in combination, particularly those that impact individual’s behavior in linear and sequential fashion (Ajzen, 2020; Boxer & Thompson, 2020). The use of TRA has been vast, and it has been used in various domains, including that of cryptocurrency (Al-Shehhi et al., 2014). TRA has been used in justifying the link between the factors impacting the intention to invest in Bitcoin (see: Gazali et al., 2019). The theory has also been used, together with theory of planned behavior (TPB), in describing the role of herd behavior in cryptocurrency investment markets, as in Boxer and Thompson (2020). As indicated, TRA has good explanatory power, and this has been proven in technology adoption studies, including those on e-government systems (Rana & Dwivedi, 2015), and the Internet banking services acceptance (Al-Ajam & Nor, 2015).

2.5. Development of a research model for cryptocurrency adoption
Past studies have implied the need to jointly apply TAM and TPB in gaining better-quality explanations or predictions of behaviour (Fu et al., 2006). Hence, in the proposed study model, the attitude construct from TPB was replaced with TAM’s perceived usefulness and perceived ease of use. Additionally, the construct facilitating conditions was used as replacement to perceived behavioural control. The construct of facilitating conditions seems more specific to Cryptocurrency’s context because end-user needs to have the needed technology and technological support to allow the adoption of Cryptocurrency, and so, with those available, end-user could perform Cryptocurrency-
related transactions easily and confidently. Hence, without these facilitating conditions, a person with intention to adopt this technology (Cryptocurrency) still cannot use the technology.

Trust is another construct added to the proposed model, and this new construct is a direct determinant of behavioural intention. Clearly, there are risks to using Cryptocurrency, as mentioned earlier. As a digital form of currency, Cryptocurrency needs to gain trust from user. In this regard, user needs to trust the technology, the network, and the intermediaries, in order to use Cryptocurrency.

3. Hypotheses development and research model

3.1. Subjective norm
Subjective norm is a construct in the TRA model, and Ajzen (2020) described it as a subjective assessment of social pressure from pertinent reference group in the demonstration of specific behavior. Walton and Johnston (2018) indicated that a person’s inclination towards the use of some technology will be increased when he or she is confident that his reference group (friends, family, society, etc.) has positive view towards that technology or is also using it. Subjective norm has been proven to affect utilization of Cryptocurrency. Al-Amri et al. (2019) relevantly mentioned that the use of Cryptocurrency is determined by its usage rate by other individuals. In examining Bitcoin during COVID-19 pandemic in the USA, Kim (2021) also included the factor of subjective norm. Other related studies that included subjective norm as one of the variables include Walton and Johnston (2018) and Gazali et al. (2019). Considering the above discussion, the hypothesis proposed is as below:

H1: Subjective norm has a significant positive effect on Intention to Use Cryptocurrency in Jordan.

3.2. Attitude
Another factor in TRA model by Ajzen (2020) is the factor of attitude, which entails the accumulation of an individual’s subjective familiarity towards a behavior in question and the individual’s subjective assessment of the consequence of executing such behavior, and as mentioned in Yoo et al. (2020), the subjective assessment has a direct impact on the individual’s behavioral intention to engage in the aforesaid behavior. For the context of this study, the said behavior is the use of Cryptocurrency. In this regard, attitude has been found to significantly affect intention to use Cryptocurrency, as exemplified by Albayati et al. (2020) and Gazali et al. (2019), who reported attitude as a significant indicator of behavioral intent to use cryptocurrency for their financial transactions. In a related study in Indonesia, Zamzami (2020) concluded attitude as the sole factor of digital money usage. In Korea, Yoo et al. (2020) reported attitude as a good predictor of cryptocurrency use. A similar discovery was made in South Africa in a study by Mazambani and Mutambara (2019), and in the USA in a study by Schaupp and Festa (2018). Taking into account these past findings on attitude and Cryptocurrency usage, the present study proposed the hypothesis below:

H2: Attitude has a significant positive effect on the Intention to Use Cryptocurrency in Jordan.

3.3. Perceived risk
As explained by Mendoza-Tello et al. (2018), the construct of perceived risk relates to a subjective evaluation of a person towards the extent of risk or potential undesirable outcomes following the use of a given technology, in this situation, Cryptocurrency. Perceived risk thus impacts intention to use Cryptocurrency negatively (Abramova & Böhme, 2016; Gil-Cordero et al., 2020; Sun et al., 2020) because the sense of insecurity towards Cryptocurrency becomes its usage inhibitor (Sohaib et al., 2019). However, in some studies like Arias-Oliva et al. (2019) in Spain, Yoo et al. (2020) in Korea, Ter Ji-Xi et al. (2021) in Malaysia, and Nuryyev et al. (2018) in Taiwan, perceived risk did not appear to significantly affect use intention of Cryptocurrency.
In the scrutiny of Cryptocurrency usage, the factor of perceived risk has yet to be employed. Somehow, the concerns towards potential leakages of data have been expressed by some potential users (Abramova & Böhme, 2016), as a result of theft, malware attacks, or unintended private key loss by user (Nofer et al., 2017). Potential users have also indicated their apprehensions towards potential failures of Cryptocurrency. For this reason, perceived risk becomes a strong predictor of attitude and intention of user to use Bitcoin (Sohaib et al., 2019; Won-Jun, 2018). Based on past related evidences, the following hypotheses were proposed in this study:

H3: Perceived Risk has a significant negative effect on Attitude towards the use of Cryptocurrency in Jordan.

H4: Perceived Risk has a significant negative effect on Intention to Use Cryptocurrency in Jordan.

3.4. Perceived usefulness

As a construct of TAM, perceived usefulness becomes the subjective evaluation towards the efficacy and performance of Cryptocurrency (Shahzad et al., 2018). In the scrutiny of new technology adoption, perceived usefulness has been a commonly examined factor. In their studies, Won-Jun (2018) and Albayati et al. (2020) found perceived usefulness as a solid predictor of attitude towards the use of Cryptocurrency. Additionally, in examining behavioral intention to use Cryptocurrency, Jankeeparsad and Tewari (2018) found a positive impact of perceived usefulness. Furthermore, the positive impact of perceived usefulness on behavioural intention has been reported in Cryptocurrency studies in various countries including Spain (Arias-Oliva et al., 2019; Mendoza-Tello et al., 2018), China (Nadeem et al., 2021), Taiwan (Nuryyev et al., 2018), and USA (Schaupp & Festa, 2018). The hypotheses to be tested are follows:

H5: Perceived Usefulness has a significant positive effect on Attitude towards the use of Cryptocurrency in Jordan.

H6: Perceived usefulness has a significant positive effect on the Intention to Use Cryptocurrency in Jordan.

3.5. Perceived enjoyment

Perceived enjoyment as described by Nadeem et al. (2021) relates to the belief of an individual that using Cryptocurrency is fun, and leads to happiness and satisfaction. Cryptocurrency has been associated with the intricate new technology (justifiable via Diffusion of Innovation Theory) DIT, and discomfort in its application (justifiable via TRA). However, empirical studies on Cryptocurrency, especially those that applied DIT and TRA were still too few. Nadeem et al. (2021) relevantly reported a positive impact of perceived enjoyment on perceived ease of use, which consequently imparted a positive impact on the attitude and intention to use cryptocurrency. Additionally, the factor of discomfort appeared to inhibit the use of Cryptocurrency (Alharbi & Sohaib, 2021; Sohaib et al., 2019). Also, complicated usage of Cryptocurrency was found impede its usage (Abramova & Böhme, 2016). The hypotheses below were established:

H7: Perceived enjoyment has a significant positive effect on the Attitude towards the use of Cryptocurrency in Jordan.

H8: Perceived enjoyment has a significant positive effect on the Intention to Use Cryptocurrency in Jordan.

3.6. Ease of use

Davis (1989) suggested based on TAM that beliefs of user in the form of perceived ease of use greatly affect the user’s attitude towards the adoption of a given information system. Additionally, some studies that employed TAM concluded the impact of PEOU on BI (Al-Emran et al., 2020; Al-Hamad et al., 2021; Almajali, 2021a; Al-Rahmi et al., 2021; Alshurideh et al., 2020; Pratama, 2021;
Sophea et al., 2022). On the other hand, Kumar et al. (2020) reported that PEOU and BI showed no discernible relation. This study therefore proposed the hypotheses below:

H9: Perceived Ease of Use has a significant positive influence on the Attitude towards the Use of Cryptocurrency in Jordan.

H10: Perceived Ease of Use has a significant positive influence on the Intention to Use Cryptocurrency in Jordan.

3.7. Trust
Examining banks and channel of mobile banking, trust was described by Alalwan et al. (2017) as the accumulation of beliefs on the integrity, benevolence, and ability of the bank and the channel of mobile-banking. The levels of trust of user relate to user’s viewpoint of beliefs concerning the reliability and trust in relation to a given technology (Alalwan et al., 2017; Almajali et al., 2021b; Arpaci, 2016). Notably, the impact of trust on behavioral intention has been examined by many but with mixed outcomes. Most found positive impact of trust on behavioral intention, while some reported no discernible impact between both constructs (Alalwan et al., 2017; Kabra et al., 2017; Khalilzadeh et al., 2017). In their study, Alalwan et al. (2017) stated the importance of trust in concluding the probability of user in adopting certain technology, as trust was found to greatly affect behavioral intention of user towards m-learning usage. On the other hand, in Kabra et al. (2017), trust and behavioral intention were found to have no relationship. In the context of the present paper, customers’ trust levels should have a favorable impact on their behavioral intention to use cryptocurrency. As such, the hypothesis proposed is:

H11: Trust has a significant positive influence on the Intention to Use Cryptocurrency in Jordan.

3.8. Facilitating conditions
The construct of facilitating conditions has been examined in terms of its impact on behavioural intention of individuals in new system usage in a variety of settings, including social media (Harsono & Suryana, 2014), mobile learning (Thomas et al., 2013), online banking (Foon & Fah, 2011; Khan et al., 2017), and ICT usage (Luo et al., 2011). For instance, in their study, Luo et al. (2011) concluded a significant impact of facilitating conditions on behavioural intention towards ICT utilization. Relevantly, studies on Cryptocurrency mentioned the positive impact of facilitating conditions on behavioural intention to use Cryptocurrency (Venkatesh et al., 2003). Contrariwise, examining mobile banking services in Portugal, Baptista and Oliveira (2017) found no relationship between facilitating conditions and behavioral intention. Considering these findings, the following hypothesis was proposed in this study:

H12: Facilitating conditions have a significant positive influence on the Intention to Use Cryptocurrency in Jordan.

3.9. Mediating effect of attitudes
The mediating role of attitude towards Cryptocurrency on the relationship between perceived risk, perceived usefulness, perceived enjoyment, perceived ease of use, and intention to use Cryptocurrency was examined in the present study. Relevantly, in a study by Krishanan et al. (2016) and Al-Bashayreh et al. (2022), the relationship between perceived risk and intention to use mobile banking was found to be mediated by attitude towards using mobile banking. Wu and Zumbo (2008) in their study found attitude to partially mediate the relationship between perceived enjoyment and behavioral intention. In examining the attitude towards social media use among travelers, Hua et al. (2017) found that it mediates the positive effect of perceive usefulness and perceive ease of use on behavioral intention.
In their study on user acceptance behaviour, Davis et al. (1989) concluded that acceptance is determined mostly via perceived usefulness, and behavioural intention, with attitude, as partial mediator, at best. Nonetheless, IT acceptance studies that included the mediating role of attitude have presented mixed outcomes, whereby some reported full mediation of attitude on the relationship between perceived usefulness and behavioural intention, while some found that even though attitude mediated the relationship, the mediation was only partial. Equally, attitude was also found not mediating the proposed relationship at all. Considering these findings, the present study concludes that attitude has minimal role in IT acceptance studies. The discussed findings on attitude have led to the formation of the following hypotheses:

H13: Attitude towards the use of Cryptocurrency use will mediate the relationship between Perceived Risk and Intention to Use Cryptocurrency.

H14: Attitude towards the use of Cryptocurrency use will mediate the relationship between Perceived Usefulness and Intention to Use Cryptocurrency.

H15: Attitude towards the use of Cryptocurrency use will mediate the relationship between Perceived Enjoyment and Intention to Use Cryptocurrency.

H16: Attitude towards the use of Cryptocurrency use will mediate the relationship between Perceived Ease of Use and Intention to Use Cryptocurrency.

A unique research model was proposed in this study. Accordingly, Cryptocurrency usage among Jordanians were examined based on three factors of the attitudinal TRA model namely subjective norm, attitude, and behavioral intention to use, in addition to four relevant factors from adoption technology model namely perceived risk, perceived usefulness, perceived enjoyment, and perceived ease of use. Figure 2 highlights the research model.

4. Research methodology
The study’s proposed conceptual model was validated, and the hypotheses were tested using empirical data obtained through the study questionnaire which were distributed to study participants over the internet. The study participants were between 20 and 29 years old and were avid Facebook users. As reported by Napoleoncat (2020), there were about 6 million Facebook users in Jordan, and most of them were between 20 and 29 years in age. From the 1000 Facebook users provided with the survey link, 620 of them responded to the survey. The study used a quantitative data gathering method—an online survey—to ensure an effective data collection process and study replicability (Saunders et al., 2009). The survey’s link was shared on Facebook, and several people completed the survey. As the majority of Jordanians were Facebook user, employing this social network for data collecting proved helpful, because more Jordanians could be reached (Napoleoncat, 2020). Google Drive platform was used to host the survey. The goal of the study was revealed to these voluntarily participating study participants. These participants were also informed that their participation was anonymous and that they could abandon the study at any time during the study (Podsakoff et al., 2003).

The study used a probability sampling method, which means that every person in the population had comparable chance of being chosen (Vehovar et al., 2016). Hence, the achieved response rate in this study was 62%. Owing to inception, 20 responses had to be omitted, and the remaining 600 responses were analyzed.

There were 43 items in the questionnaire, and the items measured the constructs of the study’s proposed conceptual model. All items were adapted from past related works. Specifically, items signifying the construct of subjective norm were considered from Abbasi et al. (2021); items signifying the construct of perceived risk were used from Nodeem et al. (2021); items signifying the construct of perceived usefulness
were applied from Sohaib et al. (2019); and items signifying the construct of perceived enjoyment were considered from Nadeem et al. (2021). Davis (1989) provided items that represented the notion of Perceived ease of use; items that represented the construct of trust were taken from Slade et al. (2015); items that represented the construct of facilitating condition were obtained from Beza et al. (2018); items that represented the construct of attitude were used from Mazambani and Mutambora (2019); and items that represented the construct of intention to use were applied from Nadeem et al. (2021).

Five closed-ended questions on the respondents’ demographic characteristics were also included in the questionnaire. These questions covered the respondents’ demographic details like their age, gender, income, education level and their experience on internet usage. All items were in Arabic. This was to ease the process of questionnaire completion, as Arabic language is the native language of the respondents. As the items were originally in English language, the researcher employed a method called the back-to-back translation in constructing the Arabic questionnaire. According to Brislin (1976), the use of back-to-back translation method could prevent the problem of cultural and language dissimilarities. Table 1 shows the specifics of the questionnaire items.

5. Data analysis and results

5.1. Descriptive analysis
Overall, 600 valid questionnaires on Jordanian consumers’ online buying habits were received. According to the data collected, 66.5% of respondents were male, and 88% of respondents were between the ages of 20 and 29. The study discovered that the majority of respondents (36.2%) earned between 350 and 400 Jordanian Dinar per month, while 33 Percentage of Jordanians were earning between 401 and 450 Jordanian Dinar each month. When it comes to education, the majority (54.2%) of respondents had a bachelor’s degree, and the majority (81.4%) of respondents had more than 4 years of online experience, which is considered appropriate. Table 2 shows the characteristics of the respondents (N = 600).
| Factor                              | Code | Measurement Dimensions of Factors                                                                                                                                 |
|------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subjective Norm (SN) Walton and Johnston (2018); Mazambani and Mutambara (2019); and verified by Abbasi et al. (2021). | SN1  | My significant others influence me to utilize Cryptocurrency in the purchase or sell of products, as a good way of trading.                                     |
|                                    | SN2  | My significant others influence me to give Cryptocurrency a try.                                                                                               |
|                                    | SN3  | My significant others influence me to show a positive sentiment in involving myself in Cryptocurrency use.                                                 |
|                                    | SN4  | My significant others influence me in deciding my purchases using Cryptocurrency.                                                                             |
|                                    | SN5  | My significant others encourage me in my potential utilization of Cryptocurrency.                                                                               |
| Perceived Risk (PR) Sohaib et al. (2019), and verified by Nadeem et al. (2021). | PR1  | Others could misuse my Cryptocurrency payment transactions information.                                                                                      |
|                                    | PR2  | I think it is unsafe to give personal information over Cryptocurrency payments.                                                                                |
|                                    | PR3  | Cryptocurrency offers secure money transfer.                                                                                                                     |
|                                    | PR4  | I have more control over my money with Cryptocurrency.                                                                                                         |
|                                    | PR5  | I think that Cryptocurrency is very costly.                                                                                                                     |
|                                    | PR6  | Cryptocurrency cannot be converted to conventional currencies, and even so, the price will be unreasonable.                                                     |
| Perceived Usefulness (PU) Won-Jun (2018); Arias-Oliva et al. (2019); and verified by Sohaib et al. (2019). | PU1  | I think that my purchase will be faster with Cryptocurrency.                                                                                                  |
|                                    | PU2  | I think Cryptocurrency makes my purchase easier.                                                                                                               |
|                                    | PU3  | I think Cryptocurrency will make my purchase more effective.                                                                                                  |
|                                    | PU4  | I think Cryptocurrency will make my purchase more efficient.                                                                                                   |
|                                    | PU5  | I can make better purchase decision with Cryptocurrency.                                                                                                       |
| Perceived Enjoyment (PE) Sohaib et al. (2019); Abbasi et al. (2021); and verified by Nadeem et al. (2021). | PE1  | I think it is fun to use Cryptocurrency.                                                                                                                        |
|                                    | PE2  | I think Cryptocurrency is pleasant to use.                                                                                                                       |
|                                    | PE3  | I find Cryptocurrency use enjoyable.                                                                                                                           |
|                                    | PE4  | Cryptocurrency is flexible.                                                                                                                                   |
|                                    | PE5  | I am not creative in my Cryptocurrency use.                                                                                                                      |
| Factor                        | Code  | Measurement Dimensions of Factors                                                                 |
|------------------------------|-------|--------------------------------------------------------------------------------------------------|
| Perceived Ease of Use (PEOU) | PEOU1 | I am confident that learning the technology will be difficult.                                   |
|                              | PEOU2 | I think that Cryptocurrency will easily do what I want it to do.                                  |
|                              | PEOU3 | I think that Cryptocurrency will be easy to use.                                                   |
|                              | PEOU4 | Cryptocurrency contact, in my opinion, is made more flexible by technology.                        |
| Trust (TR)                   | TR1   | I am sure that Cryptocurrency is reliable.                                                         |
|                              | TR2   | I am sure that Cryptocurrency is secure.                                                           |
|                              | TR3   | I am sure that Cryptocurrency is trustworthy.                                                      |
|                              | TR4   | I am confident in Cryptocurrencies.                                                                |
| Facilitating Condition (FC)  | FC1   | I have the resources that I need in Cryptocurrency use.                                            |
|                              | FC2   | I have the knowledge that I need in Cryptocurrency use.                                            |
|                              | FC3   | Cryptocurrency is well-matched with other technologies that I use.                               |
|                              | FC4   | I can find help from others when facing problems in my use of Cryptocurrency.                    |
| Attitude (ATT)               | ATT1  | I am confident that Cryptocurrency purchase is a good idea.                                      |
|                              | ATT2  | I am confident that Cryptocurrency usage in financial transactions is a smart idea.               |
|                              | ATT3  | I think it is good to use Cryptocurrency as a currency.                                            |
|                              | ATT4  | The use of Cryptocurrency makes me feel good.                                                     |
|                              | ATT5  | The idea of Cryptocurrency usage excites me.                                                      |
| Intention to Use Cryptocurrency (IUC) | IUC1 | Cryptocurrency will be my other currency source in my future product purchase and sell.        |
|                              | IUC2  | I am confident that Cryptocurrency use will greatly help me in fulfilling my obligations on time. |
|                              | IUC3  | I plan to regularly use Cryptocurrency.                                                           |
|                              | IUC4  | I will promote Cryptocurrency use to others, as an exchange method.                               |
|                              | IUC5  | I think Cryptocurrency is more appropriate for gaming.                                             |
5.2. Statistical analysis

5.2.1. Normality and multicollinearity

AMOS 22.0 was used to examine the univariate normality of each variable, through the use of the skewness-kurtosis approach described by Byrne (2010) and Kline (2005). The results reveal that all obtained values demonstrate normality of univariate distribution. This owes to the fact that the skewness values were all smaller than the value of 3, which is their cut-off point, while the kurtosis values were all smaller than 8, as recommended in West et al. (1995) and Kline (2005).

In a regression model, multicollinearity is characterized as a high correlation between independent variables (Kline, 1998), and it has an impact on the reliability of SEM. Multicollinearity is investigated by using SPSS to calculate tolerance and VIF values. The tolerance value in this study was less than 0.10, while the VIF value was larger than 10, and so, both levels are regarded as tolerable.

5.2.2. Common method bias

Harman’s single-factor with nine constructs (SN, PR, PU, PE, PEOU, TR, FC, ATT, and IUC) and 38 scale items by Harman (1976) and Podsakoff et al. (2003) were investigated for common method bias in this work. The findings revealed that no single factor could be identified. Furthermore, the first component accounted for 44.12% of variance, which is lower than Podsakoff et al.’s (2003) proposed cutoff value of 50%. As a result, the dataset in question had no common method bias.
5.2.3. Structural equation modelling analysis

5.2.3.1. Measurement model. Factor analysis with confirmation in the CFA, model fitness (unidimensionality) was assessed. The constructs’ reliability and validity were then assessed.

5.2.3.1.1. Model fitness. The model’s fitness was ascertained by evaluating its major fit indices (CMIN/DF, NFI, AGFI, GFI, NFI, CFI, and RMSEA), and the following results were obtained: CMIN/DF = 5.14, GFI = 0.79, NFI = 0.70, AGFI = 0.77, CFI = 0.75, and RMSEA = 0.151. Table 3 contains the details.

Based on Hair et al.’s (2010) recommendations, the values of various indices, particularly GFI and NFI, were deemed poor. Meanwhile, Anderson and Gerbing (1988), Bagozzi and Yi (1988), and Byrne (2010), proposed refining and re-evaluating to increase the model’s fitness, which involve the examination of the standardized regression weights (factor loading), modification indices, and other factors. Byrne (2010), and Holmes-Smith et al. (2006) advocated using loading, modification indices, and a standardized covariance matrix.

Five items scored below the tolerable level of 0.50 indicated by Byrne (2010) and Hair et al. (2010) in this study’s analysis of standardized regression weights (factor loading), and were therefore deleted. SN5 stood for subjective norm, PU4 stood for perceived usefulness, PE5 stood for perceived enjoyment, ATT4 stood for attitude, and IUC2 stood for intention to use cryptocurrency.

The CFA was then retested, and the findings suggested that the model fitness had significantly improved. Based on Anderson and Gerbing (1988) and Hair et al. (2010) the chi-square values were reasonable, as shown in Table 3, CMIN/DF = 1.54, GFI = 0.92, AGFI = 0.81, NFI = 0.94, CFI = 0.91, and RMSEA = 0.040. If the values of AGFI, GFI, NFI and CFI were between 0.80 and 0.90, they can be regarded as acceptable (Fornell & Larcker, 1981). Since the updated measurement model had a high degree of goodness of fit to the data, there was no need to re-specify or improve it (Byrne, 2010; Hair et al., 2010).

5.2.3.1.2. Construct reliability. Cronbach’s alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) of the latent constructs were used to measure the scales’ reliability (see, Table 4). As demonstrated by the results, all latent variables’ Cronbach’s alpha was higher than Nunnally’s and Bernstein (1978) proposed cutoff value of 0.70, particularly between 0.86 and 0.96. Meanwhile, the obtained CR for the research constructs was higher than Hair et al.’s (2010) proposed value of 0.70.

Table 4 indicates that the maximum CR value was scored by facilitating conditions at 0.83, while the lowest value was obtained by perceived risk at 0.66. It also shows AVE between 0.76 and 0.89, which were above. Hair et al.’s (2010) recommended threshold value of 0.50.

5.2.3.1.3. Construct validity. Convergent validity and discriminant validity were used in this study to assess the construct validity of the measuring items. According to the convergent validity study,

| Model                        | CMIN  | DF  | P   | CMIN/DF | GFI  | AGFI | NFI  | CFI  | RMSEA |
|------------------------------|-------|-----|-----|---------|------|------|------|------|-------|
| Initial measurement model    | 1420.111 | 276 | 0.00 | 5.14    | 0.79 | 0.77 | 0.70 | 0.75 | 0.151 |
| Modified measurement model   | 413.122 | 267 | 0.00 | 1.54    | 0.92 | 0.81 | 0.94 | 0.91 | 0.04  |

Minimum recommended value: CMIN/DF ≤3.000, GFI ≥0.90, AGFI ≥0.80, NFI ≥0.90, CFI≥0.90, RMSEA ≤0.08.
| Constructs and Indicators | Factor Loadings | Std. Error | Square Multiple Correlation | Error Variance | Cronbach’s Alpha | Composite Reliability | AVE |
|---------------------------|-----------------|------------|----------------------------|----------------|------------------|-----------------------|-----|
| Subjective Norm (SN)     |                 |            |                            |                |                  |                       |     |
| SN1                       | 0.552           | 0.022      | 0.531                      | 0.643          |                  |                       |     |
| SN2                       | 0.631           | 0.012      | 0.540                      | 0.513          |                  |                       |     |
| SN3                       | 0.605           | 0.016      | 0.722                      | 0.625          |                  |                       |     |
| SN4                       | 0.633           | 0.056      | 0.620                      | 0.534          |                  |                       |     |
| Perceived Risk (PR)      |                 |            |                            |                |                  |                       |     |
| PR1                       | 0.610           | 0.122      | 0.653                      | 0.522          | 0.871            | 0.66                  | 0.89|
| PR2                       | 0.521           | 0.021      | 0.555                      | 0.344          |                  |                       |     |
| PR3                       | 0.539           | 0.036      | 0.788                      | 0.253          |                  |                       |     |
| PR4                       | 0.635           | 0.025      | 0.564                      | 0.123          |                  |                       |     |
| PR5                       | 0.541           | 0.017      | 0.678                      | 0.244          |                  |                       |     |
| PR6                       | 0.714           | 0.023      | 0.549                      | 0.420          |                  |                       |     |
| Perceived Usefulness (PU) |                 |            |                            |                |                  | 0.931                 | 0.75|
| PU1                       | 0.722           | 0.031      | 0.542                      | 0.645          |                  |                       |     |
| PU2                       | 0.635           | 0.034      | 0.643                      | 0.512          |                  |                       |     |
| PU3                       | 0.551           | 0.051      | 0.571                      | 0.648          |                  |                       |     |
| PU5                       | 0.564           | 0.022      | 0.638                      | 0.233          |                  |                       |     |
| Perceived Enjoyment (PE) |                 |            |                            |                |                  | 0.945                 | 0.75|
| PE1                       | 0.541           | 0.010      | 0.629                      | 0.472          |                  |                       |     |
| PE2                       | 0.570           | 0.040      | 0.651                      | 0.321          |                  |                       |     |
| PE3                       | 0.636           | 0.025      | 0.733                      | 0.612          |                  |                       |     |
| PE4                       | 0.527           | 0.041      | 0.672                      | 0.321          |                  |                       |     |
| Perceived Ease of Use (PEOU) |               |            |                            |                |                  | 0.868                 | 0.80|
| PEOU1                     | 0.536           | 0.011      | 0.655                      | 0.358          |                  |                       |     |
| PEOU2                     | 0.630           | 0.022      | 0.610                      | 0.417          |                  |                       |     |
| PEOU3                     | 0.644           | 0.044      | 0.560                      | 0.330          |                  |                       |     |
| PEOU4                     | 0.555           | 0.051      | 0.691                      | 0.558          |                  |                       |     |
| Trust (TR)                |                 |            |                            |                |                  | 0.914                 | 0.72|
| TR1                       | 0.537           | 0.060      | 0.536                      | 0.538          |                  |                       |     |
| TR2                       | 0.601           | 0.071      | 0.530                      | 0.511          |                  |                       |     |
| TR3                       | 0.620           | 0.062      | 0.548                      | 0.574          |                  |                       |     |
| TR4                       | 0.609           | 0.033      | 0.521                      | 0.583          |                  |                       |     |
| Facilitating Condition (FC) |               |            |                            |                |                  | 0.961                 | 0.83|
| FC1                       | 0.681           | 0.041      | 0.513                      | 0.344          |                  |                       |     |
| FC2                       | 0.720           | 0.321      | 0.533                      | 0.362          |                  |                       |     |

(Continued)
| Constructs and Indicators | Factor Loadings | Std. Error | Square Multiple Correlation | Error Variance | Cronbach's Alpha | Composite Reliability | AVE |
|---------------------------|-----------------|------------|-----------------------------|----------------|------------------|----------------------|-----|
| FC3                       | 0.666           | 0.375      | 0.540                       | 0.391          |                  |                      |     |
| FC4                       | 0.541           | 0.041      | 0.502                       | 0.325          |                  |                      |     |
| Attitude (ATT)            |                 |            |                             |                | 0.922            | 0.80                 | 0.83 |
| ATT1                      | 0.525           | 0.133      | 0.631                       | 0.330          |                  |                      |     |
| ATT2                      | 0.520           | 0.114      | 0.526                       | 0.420          |                  |                      |     |
| ATT3                      | 0.539           | 0.201      | 0.577                       | 0.110          |                  |                      |     |
| ATT5                      | 0.638           | 0.145      | 0.522                       | 0.399          |                  |                      |     |
| Intention to Use Cryptocurrency (IUC) |               |            |                             |                | 0.881            | 0.81                 | 0.84 |
| IUC1                      | 0.559           | 0.567      | 0.233                       |                |                  |                      |     |
| IUC3                      | 0.623           | 0.548      | 0.394                       |                |                  |                      |     |
| IUC4                      | 0.746           | 0.623      | 0.381                       |                |                  |                      |     |
| IUC5                      | 0.580           | 0.590      | 0.451                       |                |                  |                      |     |
all of the retained items showed significant standardized regression weight with their latent variables (see, Table 4). Furthermore, all of the items that were preserved had a moderate factor loading (0.51), which was greater than the indicated tolerable limit of 0.50, and the items appeared to be statistically significant (p-value less than 0.0001; Anderson & Gerbing, 1988; Hair et al., 2010).

Meanwhile, the highest value of inter-correlation estimations among the latent components was lower than 0.216, which is lower than Kline’s (2005) recommended cutoff value of 0.85. Furthermore, as shown in Table 5 for all latent constructs, the squared root of AVE is bigger than their inter-correlation estimations with other resulting constructs.

### Table 5. Correlations of constructs

| Constructs | SN  | PR  | PU  | PE  | PEOU | TR  | FC  | ATT  | IUC  |
|------------|-----|-----|-----|-----|------|-----|-----|------|------|
| SN         | 0.88|     |     |     |      |     |     |      |      |
| PR         | 0.441| 0.87|     |     |      |     |     |      |      |
| PU         | 0.635| 0.334| 0.95|     |      |     |     |      |      |
| PE         | 0.327| 0.311| 0.370| 0.89|      |     |     |      |      |
| PEOU       | 0.343| 0.344| 0.549| 0.630| 0.83 |     |     |      |      |
| TR         | 0.680| 0.341| 0.534| 0.216| 0.410| 0.84|     |      |      |
| FC         | 0.651| 0.522| 0.311| 0.531| 0.506| 0.322| 0.81|      |      |
| ATT        | 0.688| 0.420| 0.551| 0.303| 0.539| 0.317| 0.351| 0.90 |      |
| IUC        | 0.514| 0.433| 0.378| 0.501| 0.482| 0.344| 0.367| 0.412| 0.85 |

Note: Diagonal elements form the square roots of the average variance extracted for the entire nine constructs. Off-diagonal elements denote the correlations between constructs.

5.2.3.2. **Structural model.** The structural model’s fit indices show that it fits the data well. The chi-square value found showed significance ($\chi^2 = 413.122$, DF = 267, $P = 0.000$). Somehow, other fit indices were within their tolerance value, as follows: CMIN/DF = 1.54, GFI = 0.92, AGFI = 0.81, NFI = 0.94, CFI = 0.91 and RMSEA = 0.04.

Furthermore, route coefficient analyses showed that the majority of the hypothesized causal paths were significant when compared to the conceptual model. Table 6 shows the path coefficient and t-value for all of the proposed paths.

Fifteen proposed hypotheses were supported, and one was not supported. The findings revealed that subjective norm had a considerable impact on cryptocurrency usage intentions. ($P = 0.001$). Hence, H1 was supported. Attitude imported a significant positive impact on IUC ($P = 0.021$). As such, H2 was supported. Perceived risk had a negative impact on attitude. Hence, H3 was supported ($P = 0.005$). Perceived risk impacted intention to use cryptocurrency negatively, demonstrating support towards H4 ($P = 0.030$). Perceived usefulness had an opposite impact on attitude and intention to use cryptocurrency, and so, H5 and H6 were supported ($P = 0.002$, $P = 0.011$). Perceived enjoyment had a positive impact on attitude and intention to use cryptocurrency, and hence H7 and H8 were supported ($P = 0.033$, $P = 0.055$). Perceived ease of use had a positive impact on attitude and intention to use cryptocurrency, and hence H9 and H10 were supported ($P = 0.001$, $P = 0.003$). Trust had a positive impact on intention to use cryptocurrency, demonstrating support to H11 ($P = 0.006$). Facilitating conditions had a negative impact on intention to use cryptocurrency, and hence H12 was not supported ($P = 0.210$).

Attitude as a mediator was tested, and Table 7 displays the results. According to Hair et al. (2010), a full mediating effect occurs only when the indirect effect is greater than the direct effect.
Table 6. Summary of proposed results for the theoretical model

| Proposed Research Paths | CoefficientValue β | t-value | p-value | EmpiricalEvidence |
|-------------------------|--------------------|---------|---------|-------------------|
| H1: SN→IUC              | 0.144              | 1.122   | 0.001   | Supported         |
| H2: ATT→IUC             | 0.332              | 3.413   | 0.021   | Supported         |
| H3: PR→ATT              | 0.153              | 3.221   | 0.005   | Supported         |
| H4: PR→IUC              | 0.520              | 5.220   | 0.030   | Supported         |
| H5: PU→ATT              | 0.211              | 2.123   | 0.002   | Supported         |
| H6: PU→IUC              | 0.401              | 4.662   | 0.011   | Supported         |
| H7: PE→ATT              | 0.513              | 3.752   | 0.033   | Supported         |
| H8: PE→IUC              | 0.501              | 4.721   | 0.055   | Supported         |
| H9: PEOU→ATT            | 0.070              | 3.332   | 0.003   | Supported         |
| H10: PEOU→IUC           | 0.051              | 2.112   | 0.001   | Supported         |
| H11: TR→IUC             | 0.613              | 4.111   | 0.006   | Supported         |
| H12: FC→IUC             | 0.071              | 2.715   | 0.210   | Not Supported     |

Table 7. Results of mediating hypotheses

| Hypothesis | From | Mediation | To | Direct effect | Indirect effect | Mediation |
|------------|------|-----------|----|---------------|-----------------|-----------|
| H13        | PR   | ATT       | IUC| 0.040         | 0.122           | Mediation |
| H14        | PU   | ATT       | IUC| 0.001         | 0.176           | Mediation |
| H15        | PE   | ATT       | IUC| 0.003         | 0.155           | Mediation |
| H16        | PEOU | ATT       | IUC| 0.040         | 0.144           | Mediation |

From the results obtained, attitude did have a mediating impact on the relationship between PR & IUC, PU & IUC, PE & IUC, and PEOU & IUC. Hence, H13, H14, H15, and H16 were supported.

6. Discussion and conclusion

The results show a significant positive impact of attitude on intention to use Cryptocurrency, implying that a person with positive attitude towards Cryptocurrency is likely to use it (Albayati et al., 2020; Gazali et al., 2019; Mazambani & Mutambara, 2019; Schaupp & Festa, 2018; Zamzami, 2020). H2 was hence supported. Also, a person is expected to utilize a given technology if he or she experiences positive subjective norms towards such utilization from its reference group (Al-Amri et al., 2019; Gazali et al., 2019; Jankeeparsad & Tewari, 2018; Sas & Khairuddin, 2017; Schaupp & Festa, 2018) as postulated in H1. Hence, an individual is likely to use Cryptocurrency if his/her friends also use it (Boxer & Thompson, 2020; Walton & Johnston, 2018).

The results also show a positive and significant impact of perceived usefulness (H5) and perceived enjoyment (H7) on attitude towards Cryptocurrency, and intention to use it (H6 and H8 respectively). Conversely, a negative significant impact of risk on attitude and intention to use Cryptocurrency was shown by the results, as postulated by H3 and H4 respectively. As can be concluded from the findings, the attitude of a person towards Cryptocurrency is likely to be positive if the person perceives Cryptocurrency as useful (Albayati et al., 2020; Arias-Oliva et al., 2019; Nadeem et al., 2021; Nuryyev et al., 2018), and not risky, that is, Cryptocurrency is perceived as low in terms of perceived risk and that financial losses are not likely to occur when using it (Abramova & Böhme, 2016; Gazali et al., 2019; Nofer et al., 2017).
Results on H9 show positive impact of perceived ease of use on the attitude of users to use Cryptocurrency; H9 was thus supported. In a related study, Hua et al. (2017) reported that the increase in perceived ease of use of technology would increase one's preference towards a given travel destination. Meanwhile, Setiawan and Setyawati (2020) and Pitafi et al. (2020) found a positive link between ease of use and attitude. Among users of Bitcoin, PEOU was found to be a strong factor impacting intention to use. Hence, a new technology must show that it is easy to use in order to be accepted by more users. Relevantly, Cryptocurrency has been easy to obtain and transact with from its first launch, and the advancement of cellular phone and mobile device applications and adoption via PSP's have made Cryptocurrencies even easier to adopt. In their studies on Bitcoin adoption, Wood et al. (2017), Sas and Khairuddin (2017), Folkinshteyn and Lennon (2017), and Arias-Oliva et al. (2019) affirmed the positive and significant impact of ease of use on intention to use of Bitcoin. In this study, H10 was supported.

As shown in Table 5, TR has a positive impact on behavioral intention to use Cryptocurrency, with statistical significance (see results on H11). Similarly, Sas and Khairuddin (2017) reported that among Bitcoin users, there was strong trust in Bitcoin and blockchain technology. Additionally, in a study on Cryptocurrency adoption among consumer, Mahomed (2017) stated the significance of trust in the intention of user towards Bitcoin use. Trust is indeed a very important determinant of Cryptocurrency use, as many users have been victimized by security breaches and scams. The assurance of consumer protection in crypto exchanges could improve trust towards Bitcoin environment, leading to the increase in the Cryptocurrency adoption.

Meanwhile, the impact of facilitating conditions on behavioral intention to use Cryptocurrency (H12) was insignificant. Similar finding was reported in Shaw and Sergueeva (2019), Merhi et al. (2019) and Herrero et al. (2017). As justification, Cryptocurrency can be easily used with common devices today like a smartphone, tablet or laptop, as long as there is internet connection. Statista (2020) has reported that 80.1% of Jordanians aged 18–35 are users of smartphone. Notably, the study respondents were all adequately experienced in the use of smartphone, laptop and tablet. All of these could be linked to the insignificant relation between facilitating conditions and behavioral intention to use Cryptocurrency as postulated by H12.

Notably, attitude was found to fully mediate the relationship between customers’ perceived risk and consumer’s intentions to use Cryptocurrency, implying that the increase in customers’ attitude is caused by the decrease in risk perception towards an e-retailer, leading to a further increase in the readiness of consumers to make purchase in e-commerce cryptocurrency platforms, and so, H13 was supported. In addition, the results show a mediating effect of attitude on the relationship between perceived usefulness, perceived enjoyment, perceived ease of use, and intention to use cryptocurrency. As such, H14, H15, H16 were supported.

Results for H15 denoted considerable complementary mediation effect of attitude on the relationship between perceived enjoyment and level of intention to use cryptocurrency. This means that perceived enjoyment has a positive impact on attitude toward intention to use cryptocurrency, stimulating more use. Attitude therefore facilitates in justifying the relationship between perceived enjoyment and Intention to use cryptocurrency.

6.1. Research implications
A number of theoretical implications of this study have been identified. First, a new unique research model was brought forth in this study, and the model evaluates the factors that propel the behavioral intention of people towards Cryptocurrency usage. Hence, the subject at hand was comprehensively explored, while TRA theory was expanded through the inclusion of factors related to technology adoption; this validates TRA usage in its expanded form. Second, the exploration of the construct of perceived risk in this study provides empirical proofs on the impact of the construct on the attitude and intention to use of user towards Cryptocurrency. This also adds to the current theoretical knowledge, as this study was the first that explored the construct of perceived risk in this context.
Furthermore, unexplored factors and factors with contradictory outcomes were examined in this study, and this is a valuable addition to the current theoretical knowledge on Cryptocurrency. Lastly, this study was the first that examined Cryptocurrency in Jordanian context, and this provides a starting point for future studies on the subject. Specifically, additional studies on the subject at hand will allow comparison of findings, while expanding the knowledge further.

Equally, some practical implications of this study should be highlighted. Firstly, this study presents the level to which the studied factors affect Cryptocurrency use decisions, and this provides actual understanding of the subject at hand. Additionally, this study presents practical Cryptocurrency usage information to important stakeholders like investors, merchants, the government, and the population in general. Through the information, future attitudes and intentions of potential Cryptocurrency users could be evaluated and predicted, and the right policies and campaigns could be formulated, to increase the interest in Cryptocurrency use. Also, the legal, economic and environmental effects of cryptocurrency use in both short- and long-term would be identified. The results of this study could be used by the governments in the formulation of suitable legal frameworks for Cryptocurrency use. In the framework, factors that significantly and positively impact usage of Cryptocurrency like usefulness and enjoyment, and factors that decrease the impact of perceived risk should be included. Additionally, the right policies and incentives for Cryptocurrency usage should be provided. Furthermore, trustable platforms for Cryptocurrency transactions should be created by developers. Meanwhile, merchants should educate customers on how to purchase and trade using Cryptocurrency, with the emphasis on the benefits and enjoyment of Cryptocurrency use as another method of making payment. For investors, they should create trust among prospective users as this could increase the investment in Cryptocurrency. Lastly, positive user experience should be inculcated through improving the social norms towards Cryptocurrency use. This will increase the interest of stakeholders towards Cryptocurrency use.

6.2. Conclusion, limitations, and future research
Cryptocurrency provides anonymous, secure, quick, and low-cost financial transactions, without the presence of third-party authorization. Cryptocurrencies have been increasingly accepted at the global level, but their applications are still limited. Also, studies on Cryptocurrency are still very few and most were carried out in the context of developed nations, or in specific culture. Furthermore, the present findings on Cryptocurrency are inconclusive, while the applied models of technology adoption did not consider the subject of perceived risk. Cryptocurrency in Jordan shows good potential as demonstrated by the increase in its usage, and yet, studies on Cryptocurrency in Jordan were still too few. As such, the present study examined the factors impacting behavioral intention of Jordanians towards Cryptocurrency use. Accordingly, the present study presented a research model grounded upon the theory of reasoned action, with an addition of some relevant factors from TAM specifically perceived usefulness, perceived enjoyment, perceived ease of use, and perceived risk. Quantitative approach was applied, and data were gathered from selected citizens of Jordan, and analyzed using several methods. The proposed research model was assured in terms of its reliability and validity, and it explained 84.04% of the total variance. The results show that Jordanians are more likely to utilize Cryptocurrency if their attitude towards this form of currency is positive, and are backed by positive subjective norms towards their use. Equally, the likelihood of user to use Cryptocurrency would be increased if it is perceived as useful, enjoyable and risk free. In general, all factors were imparting positive influence on behavioral intention to use Cryptocurrency except for the factor of security risk.

This study has some limitations especially in terms of the sample, the study nature, the method used, and the scope. Concerning the sample used in this study, the size was small and the knowledge of respondents on Cryptocurrency was not distinguished. This may decrease the accurateness of the findings, considering that those with Cryptocurrency knowledge may value different factors as opposed to those possessing little or no knowledge on the subject. As such, future studies should use larger sample size, and classify the respondents according to their level
of knowledge of Cryptocurrency. This will increase the research model’s explanatory power. Another limitation is the nature of this study which is cross-sectional, whereby all data were taken from one time point. As such, this study could not identify the potential changes in attitudes and intentions towards Cryptocurrency usage which may occur over time. As such, future studies should take the longitudinal approach, in order that the potential changes in attitude and intentions towards Cryptocurrency use could be ascertained.

The third limitation of this study concerns the method used, which is quantitative. Future studies should therefore consider the mixed method as this will enrich the comprehension of the findings, particularly through the use of interviews on select respondents to gain more in-depth information. Lastly, Jordan was the only country covered in this study. Hence, the findings are likely to have limited generalizability. This study should thus be replicated to other countries or cultures to allow comparison and also to increase the generalizability of the results. Also, the research model could be validated further when tested in other countries or cultures.

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