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A STUDY OF CONSUMERS' PERCEPTION TOWARDS THE ADOPTION
OF CRYPTOCURRENCY AS A MEANS OF PAYMENT IN DUBLIN.

MSc Research Project

MSC Fintech

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Content

A STUDY OF CONSUMERS' PERCEPTION TOWARDS THE POSSIBLE ADOPTION OF CRYPTOCURRENCY AS A MEANS OF PAYMENT IN DUBLIN.

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Abstract

Cryptocurrency is a type of digital currency that is gaining popularity among people all over the world. There has been discussion in Europe about introducing digital euros to supplement the use of cash as a payment method. The primary goal of this study is to identify factors that may influence cryptocurrency acceptance as a payment method. In this study, the Theory of Reasoned Action will be used to justify people's actions. To evaluate data collection from respondents, statistical models such as exploratory analysis, factor analysis, chi-square, and non-parametric tests were used. According to respondents, Bitcoin is the most popular cryptocurrency. Perceived usefulness, subjective norm, and privacy risk are all factors that can influence a user's decision to use cryptocurrency in Dublin. The study would also assess previous literature on cryptocurrency and blockchain technology, which would be used to provide additional context for this study.

Keywords: Crytocurrency, Digital euro, Blockchain technology, Theory of Reasoned action

1. Introduction

Cryptocurrency is a type of payment that is enabled by blockchain technology. Even if it is entirely created by private individuals, it is distinct from legal tender issued by a central authority. The primary goal of using cryptocurrency as a payment method in an economy is to reduce the use of printed money. Since its inception in 2009, Bitcoin has been regarded as the

most widely used cryptocurrency on a global scale (Afzalur & Ayub Khan, 2021). Several cryptocurrencies have been introduced, including Ether, Binance coin, Dogecoin, and others.

On a yearly basis, people's demand drives up the value of this digital currency. The user base of this currency is expected to reach 200 million by the end of 2024. The European Central Bank has decided to launch a digital euro project to aid in the improvement of Europe's payment system. Financial experts are currently debating the introduction of a digital euro capable of competing with other currencies. In Europe, payment for goods has evolved to include cash, credit cards, debit cards, checks, and electronic transfers. This has enabled different types of payments to be made across Europe.

According to a survey, only 10% of respondents understand how to use cryptocurrency, while 19% have been hacked and 15% have been victims of cryptocurrency fraud. People may lose trust in the system if an effective fraud-prevention standard is not implemented. The digital euro is thought to meet certain European standards, such as safety and compliance with relevant legislations.

1.1 Bitcoin

Bitcoin is a type of decentralized digital currency that can be bought, sold, and exchanged without the involvement of a third party. According to one of the currency's creators, rather than trusting a system, an electronic payment system should be based on the use of cryptography algorithms.

1.2 Blockchain

Blockchain technology is an immutable public ledger built using decentralized techniques and lacking a trusted authority. This remarkable method was used to facilitate the emergence of cryptocurrencies.

1.2 Rationale of the research

Before a new technology can be adopted, it is essential to assess whether people are willing to accept it. The adoption of cryptocurrency is divided into three stages: experimentation, early adoption, widespread adoption, and global adoption(Afzalur & Ayub Khan, 2021). Certain economic factors in a country should not be overlooked. The purpose of this study is to learn how Dublin residents might be willing to accept cryptocurrency as payment. The best method for identifying these factors would be to use theory-based reasoned action. This theory is a predictive model for people's behavioral intentions, which are influenced by attitude and subjective norm. It was created by Martin Fishbein to study human behavior (Hayder,2020). Concerns about privacy, subjective norms, and perceived usefulness are all potential factors influencing cryptocurrency adoption among consumers.

- In the preceding context, privacy risk refers to the possibility of losing personal data due to the use of cryptocurrency.
- Another factor is perceived usefulness, which is defined as a person's subjective perception of cryptocurrency and its unique benefits.
- Finally, a subjective norm is a shared belief among members of a community that is likely to influence a person's decision.

Diagram 1: Visual representation of Theory of reasoned action

1.4   Research Hypothesis/Development

H01 Privacy risk has no negative impact on a user's anonymity when using cryptocurrency as a payment method.

H02 Perceived usefulness of cryptocurrency has no effect on a user's trust in its adoption.

H03 The risk of losing one's privacy has no negative consequences for someone who uses cryptocurrency as a means of payment.

H04 Subjective norm has no positive effect on public demand for cryptocurrency as a payment method

1.5 Research Objectives

- Determine the most popular cryptocurrency among respondents.
- To identify a possible relationship between respondents' demographic information and user's participation with cryptocurrency.
- To identify factors that are likely to influence the public's perception of cryptocurrency as a means of payment.

1.6 Outline of the Study

Chapter 2: This chapter would examine previous research work on cryptocurrency and block chain networks to provide additional knowledge for this report.

Chapter 3: This chapter will describe the methods and techniques used to analyze the dataset.

Chapter 4: This chapter will thoroughly analyze the data in order to obtain useful information for the research.

Chapter 5: It focuses primarily on the completion of the research work and suggests future research that could be conducted.

1.7 Research question

The research question that could be used for this study will be "What factors would influence consumers using cryptocurrency as a means of payment?"

2. Literature Review

Introduction

There are a few concepts that must be understood when using cryptocurrency as a form of payment. These concepts include the blockchain network, the digital euro, and subjective factors that influence users. Financial industry experts were able to provide a framework for this research project.

2.1 Blockchain technology

Blockchain technology is being considered for use in a wide range of business applications, including finance and social services. Bitcoin and Ethereum are the most well-known cryptocurrencies that use this technology due to its decentralized nature. According to a research, blockchain technology cannot be trusted due to its vulnerability to cyber-attacks (Arunima,2020). A consensus mechanism was introduced to validate transactions carried out by cryptocurrency users via the blockchain network.

A thorough survey was carried out to determine the significance of the consensus mechanism when using blockchain technology. Proof of work was implemented for Bitcoin users in order to prevent cyber-attacks on the network. Despite the implementation of Proof of work, the most significant concern was the amount of computing resources required. Following that, the Ethereum network was introduced to Proof of Stake, which has proven to be an effective consensus mechanism (Ehab,2020). Blockchain technology will always be under attack, but it is critical to recognize that innovative solutions to security issues will always be developed.

The combination of blockchain technology and the Internet of Things provides users with a dependable and secure environment (Vaibhav,2021). Devices can now easily connect to the internet thanks to the introduction of microcomputer chips and wireless networks. Regardless of the advantages of utilizing these advanced technologies, it is critical to note that the use of internet of things applications is still vulnerable to the same types of attacks that apply to the use of blockchain technology (Ehab, 2020).

People and businesses are increasingly using the internet, implying a shift toward digital transactions (Vaibhav,2021). According to a research report, cryptocurrency is gaining popularity as a viable payment method in India. The limitations of this study identified the benefits of using cryptocurrency as a form of payment in the country, but it also discovered

that a certain number of people are still hesitant to use the technology due to a lack of regulations ensuring its security.

With the use of blockchain technology and IoT, defense mechanisms such as detection systems and firmware updates are in place to ensure the technology's confidentiality and trustworthiness (Elham,2021). The use of blockchain technology with IoT is still in its early stages, but industries are investing in its security. According to a research report, the use of blockchain ensures the immutability of data, but more research on the effect of corrupt data through IoT applications is needed.

A report contradicting the above suggestion regarding IoT security issues suggests that these deficiencies of IoT can be remedied through the use of blockchain technology. These IoT flaws are classified as limitations in data processing and device storage issues. (Kazım,2021)

The challenges and opportunities presented by blockchain technology are at the root of Bitcoin's security and privacy issues. Cryptocurrency may eventually replace the monetary system (Afzalur & Ayub Khan, 2021). There are concerns before it can be considered a viable payment method, such as privacy concerns and transaction delays. The underlying peer-to-peer network was discovered to be always vulnerable to attack due to a lack of restrictions that prevent malicious nodes from connecting to the network(Ehab, et al., 2020).

2.2 Factors likely to influence the adoption crytocurrency

A study was conducted to investigate the factors that are likely to influence consumers' perceptions of cryptocurrency transactions. Partial least square method was used to analyze the collected data during the research. Based on feedback from respondents, it was discovered that trust is regarded as an important factor. Respondents believe they can rely on the use of a new technology that is only regulated by the government (Afzalur & Ayub Khan, 2021). The report's limitation is that it focuses on consumer intent rather than cryptocurrency usage.

The ongoing development of new technologies, particularly cryptocurrency, has an impact on the global financial market. The researcher used the theory of reasoned action to conduct a survey to determine how Saudis would react to the possible introduction of cryptocurrency as a form of payment. Attitudes, subjective norms, and perceived benefit all had a significant impact on respondents' decision (Hayder,2020). The eventual outcome is unsurprising because people will be focused on the potential benefits of new technology. A limitation identified in the report was that the majority of the respondents were males.

A research report used the technology acceptance model to identify factors that are likely to influence consumers' perceptions of using cryptocurrency as a means of payment. This report identifies factors such as transaction costs that can influence a person's willingness to accept the central bank's digital currency in the UAE (Karmila & Pujiyono, 2020). The model has limitations due to the nature of change in technological circumstances and should not be used by decision-makers. Digital currency can offer advantages such as lower transaction costs, faster transaction speeds, and free services to customers.

A survey was created to collect feedback from cryptocurrency application users in India. The SEM-PLS model was used to conduct this study, and one limitation identified was respondents' limited responses. The survey results identify perceived ease of use as a determinant factor in using cryptocurrency as a payment method.

A study on cryptocurrency replacing traditional money in Indonesia used the syllogism analysis research method. Domestic rules and money laundering, according to the report, may be one factor limiting this change. It was also discovered that the country lacks a standardized

authority that can be used to regulate cryptocurrency, which is especially important given the volatile exchange rate.

There are variables that influence Cryptocurrency usage based on security, market acceptance, and public acceptance. It is critical to emphasize that this currency represents a viable alternative in the market's globalized future. It can be used to process payments across borders. A situation in which it can be effectively regulated can solve financial problems in a variety of ways. (Afzalur, Ayub 2019)

The rapid development of information technology is thought to have a significant impact on the ability of cryptocurrency transactions to be fast and cheap. The use of bitcoin as a payment method is set to disrupt financial operations. It is critical for the adoption of cryptocurrency that a critical mass of consumers be willing to pay with them and that a number of merchants accept the payment. (Cătălin,2020).

In one study, sentiment analysis was used to understand public opinion about the use of cryptocurrency among interested users on social media platforms. The analysis determined online user attitudes by identifying positivity and negativity in relation to six different types of cryptocurrency. It was discovered that when users identify benefits of cryptocurrency such as ease of use, perceived usefulness, and reliable means of payment, they have a positive reaction.

The use of cryptocurrency as a means of investment is causing considerable concern. Investors are expected to benefit from important information provided by social media platforms. There is also a relationship between investors and traders who can predict market price trends. In the current market, Bitcoin has the highest market capitalization when compared to other types of cryptocurrency. To predict an upcoming price trend in real-time, a logistic regression model was applied to a large dataset (100,000 tweets) gathered from Twitter. Based on the findings, a set of tweets was classified, influencing how people invest in cryptocurrency.

2.3 Central bank's Digital currency

Most banks around the world are looking to explore the possibility of introducing its digital currency that can be used to complement the usage cash (Duwi, 2020). The main concern for these banks would reside towards anti-money laundering and counter-terrorist financing. It is important to point out that payment methods over the years has evolved as a result of technological advancement in financial industry. Top market players within the financial industry are also sourcing for new solutions to improve their business operation. The introduction of digital euro has been discussed that can be adopted as means of payment in various countries. There are specific benefits that comes with the use of this technology such cost-effectiveness payment services. Digital euro is considered to be introduced into the European market, but the major concerns arises from data privacy, technology acceptance from people and safety . The introduction of digtal euro would be used to complement cash providing central bank to posses its own cryptocurrency.

2.4 Identification of a gap

The introduction of the digital euro would give people another option for paying for goods. One of the most recent examples of how the financial market has changed is cryptocurrency. In Europe, there have been fewer studies on people's perceptions of cryptocurrency. Previous studies have focused on the impact of cryptocurrency on developing countries. This study would investigate how Dublin residents would react to the possibility of using cryptocurrency as a payment method.

3. Research Methodology

The study's primary goal was to identify key factors that are likely to influence consumers' decisions to use cryptocurrency as a form of payment in Dublin. According to the theory of reasoned action, subjective factors heavily influence a person's intention to engage in a behaviour and attitude ((Karmila and Pujiyono, 2020). Previous research works have used the theory of reasoned action to define users' intentions to adopt new technology. The questionnaires used in this study were divided into two sections: demographic data and possible factors influencing consumer perception towards crytocurrency. The questions were written in a way that was easy for respondents to understand, allowing them to provide honest feedback in return. The age category was intended to primarily target people in Dublin between the ages of 20 and 50, as well as those who had previously used cryptocurrency.

3.1 Sample Size

Given Ireland's population of 4.28 million users, social media platforms were identified as a source of data. (statistica,2022). The convenience sampling technique was used for this study due to the limited number of available respondents. Respondents were chosen based on their proximity. A total of 82 respondents were eventually gathered through the use of LinkedIn, Instagram, and Facebook. Some survey participants expressed concern about clicking on links that required them to enter personal information about themselves, potentially jeopardizing their privacy.

3.2 Scales and Measurements

A five-point Likert scale was used in the survey to assess respondents' attitudes toward the privacy risk, perceived usefulness, and subjective norm of cryptocurrency as a payment method. The Likert scale comprises of 1= Strongly Agree 2 = Agree 3=Fairly agree 4= Disagree 5=Strongly disagree. Respondent demographic information was gathered to provide context for the questionnaire.

4. Design Specification

To produce an effective result, the collected data was analyzed using a variety of statistical models. To provide a comprehensive understanding of respondent characteristics, a descriptive research design with a sample size was used to investigate each variable. Primary and secondary data were collected from peer-reviewed journals and conference papers that are well-known among prominent scholars. Primary data was collected by sending questionnaires to people via social media platforms such as LinkedIn, Facebook, and Twitter. Twitter.

4.1 Data cleaning process

This will be considered the first step in identifying missing values and outliers before conducting any analysis. To find and recognize trends in a raw dataset, the research proposal will employ a knowledge discovery database method.

4.2 Cronbach Alpha Test

It is a statistical model used to discover internal consistency between variables in a group that are closely related to one another. The primary goal of internal consistency was to measure

reliability. The general assumption of this test is that an alpha greater than 0.70 indicates higher reliability among connected variables.

4.3 Descriptive Statistics

Descriptive statistics were used to give meaning to the raw data collected via the questionnaire. It was used to visualize data and reveal important information that can be used to provide insightful research information.

4.4 Inferential Statistics

The operation of inferential statistics is similar to that of descriptive statistics. This statistics model was used to generate mean and standard deviation values in order to generate additional values that explain each variable.

4.5 Chi-Square Test

It is a test that compares two categorical variables to see if they have a strong relationship. This study looked into the relationship between demographic information and cryptocurrency user engagement. To ensure that the correct values were obtained, the test assumptions were met.

4.6 Exploratory and Confirmatory factor analysis

The concept of factor analysis was used to categorize a large number of variables into a factor that was then used to provide insightful data for this study. When working with a dataset, it is believed that there are underlying concepts that can be discovered and used (Elham A, et al., 2021).

4.7 Kruskal Wallis test

It is a non-parametric test that will be used to compare differences in demographic data of respondents with potential factors that will influence users' adoption of cryptocurrency as a means of payment. This test compares the mean rankings of two or more independent variables.

4.8 Ethical Issues

The questionnaire distributed to different respondents was self-explanatory in terms of its contents, objectives, and how their participation can help achieve the research work's goals. It is important to note that the questionnaire did not involve people sharing personal information such as email addresses, names, or other confidential information. Respondents were assured that any information they provided would not be used against them if they agreed to participate in the research.

5. Implementation

5.1 Objective 1 : Ascertain the most popular cryptocurrency among respondents.

Table 1 shows which cryptocurrency is the most popular among respondents, with Bitcoin accounting for 45%, Binance coin accounting for 16%, and the rest using other types of cryptocurrency. The number of cryptocurrency users is expected to reach 200 million by the end of 2024. (Afzalur & Ayub Khan, 2021)

Table 1		
Crytocurreny	**No of Users**	**Percentage %**
Bitcoin	37	45
Binance coin	13	16
Ether &Binance	4	5
Dogecoin	12	15
Ether	4	5
Others	12	14
Total	82	100

Table 2: No of people that use crytocurrency

	Frequency	**Percentage %**
Yes	57	70
No	25	30
Total	82	100

Descriptive statistics

The table below shows demographic information to help contextualize the data gathered from respondents. Table 3 shows a clear reflection of the male population with 55% and female population with 45%. While tables 3 and 4 show that the 20-29 age group has the highest percentage with 72%, which has an influence on the fact that the majority were graduates with 41%. Table 6 reflects Ireland's diversity, with 65% of respondents being non-Irish. Table 7 shows the level of people who use cryptocurrency, with 60% of respondents being beginners and others at a lower percentage.

Table 4

Age group	**Frequency**	**Percentage %**
20	5	6
20-29	59	72
30-39	15	18
50-above	3	4
Total	82	100

Table 3

Gender	**Frequency**	**Percentage %**
Male	45	55
Female	37	45
Total	82	100

Table 5: Qualification

Qualification	**Frequency**	**Percentage %**
Employee	7	9
Graduate	34	41
Post Graduate	21	26
Professional	11	13
Student	9	11

Table 6 : Nationality

Nationality	**Frequency**	**Percentage %**
Irish	26	32
Non-Irish	53	65
Prefer not to say	3	3

Table 7 : Background of respondents

Background	**Frequency**	**Percentage %**
Beginner	49	60
Expert	3	4
Knowledgeable	29	35
Prefer not to say	1	1
Total	82	100

Frequency Analysis

The frequency analysis method was used to quantify user responses that are likely to influence their use of cryptocurrency as a payment method. According to Table 8 of the configuration manual report submitted, the majority of participants value what cryptocurrency has to offer in terms of payment transaction speed, currency trust, user privacy, and anonymity. Others are unconcerned about

how the ease of use, risk, family members, and public pressure will influence their decision to use cryptocurrency.

Mean

Mean values for all variables that influence consumer willingness to accept cryptocurrency as payment are provided to supplement the data presented above. The ease of using cryptocurrency as a payment method has a high value of 2.646 on a scale of 5 according to Table 9. The mean values with the lowest mean values are 2.383 and 2.573, respectively, indicating payment speed and privacy protection. The standard deviation quantifies how far each variable deviates from its mean.

Table 9: Mean values of responses derived from the questions below

Questions	Mean	S.D
What extent is speed of a transaction important using cryptocurrency as a means of payment ?	2.383	1.373
What extent is trustworthiness important in the usage of cryptocurrency as a means of payment?	2.402	1.404
What extent is anonymity important in the usage of cryptocurrency as a means of payment?	2.474	1.314
The degree of privacy using cryptocurrency for payment transactions ?	2.378	1.318
The ease of use of cryptocurrency in comparison to conventional currency ?	2.646	1.341
The degree of risk in making payment using cryptocurrency?	2.573	1.234
How likely you will make use of cryptocurrency to make payment if suggested by a family member or close friend?	2.743	1.362
The degree of public demand for cryptocurrency?	2.585	1.251

5.2 Objective 2 : Showing a relationship exist between respondent's demographic data and user's participation with cryptocurrency

Chi-square

This statistical test was used to look into the possibility of a link between two categorical variables, demographic data and user engagement with cryptocurrency.

Table 10: Gender and Users' Participation with Crytocurrency

	P-value	DF
Pearson Chi-Square	1	1

The above table shows that there is no close relationship between the two variables above, with $X^2 =1$ and a P-value greater than 0.05. The gender of a person will not influence a decision to use crytocurrency as means of payment based on this response.

Table 11: Age and Users' Participation with Cryptocurrency

	P-value	DF
Pearson Chi-Square	0.77	3

Table 12:Qualification and Users' Participation Crytocurrency

	P-value	DF
Pearson Chi-Square	0.41	4

Table 13: Nationality and Users' Participation in Crytocurrency

	P-value	DF
Pearson Chi-Square	0.57	2

Tables 11,12, and 13 have p-values of 0.77, 0.41, and 0.57, respectively, indicating that respondents' age, qualification, and nationality have no effect on how they use cryptocurrency.

Kruskal Wallis test

This test was carried out to determine whether there is a significant difference between respondents' demographic data and factors that are likely to influence users' decision to use cryptocurrency as a means of payment.

Table 14: Result of Kruskal Wallis Test on Gender

Questions	Kruskal Wallis	P-value
What extent is speed of a transaction important using cryptocurrency as a means of payment ?	9.4498	0.002
What extent is trustworthiness important in the usage of cryptocurrency as a means of payment?	21.244	0.004
What extent is anonymity important in the usage of cryptocurrency as a means of payment?	28.083	0.001
The degree of privacy using cryptocurrency for payment transactions ?	21.796	0.003
The ease of use of cryptocurrency in comparison to conventional currency ?	36.188	0.001
The degree of risk in making payment using cryptocurrency?	40.565	0.001
How likely you will make use of cryptocurrency to make payment if suggested by a family member or close friend?	42.384	0.007
The degree of public demand for cryptocurrency?	39.43	0.003

No of respondents = 82 ; significant p-value <0.05

Result : The Kruskal-Wallis test reveals a statistically significant difference in the factors influencing cryptocurrency users and gender. The P-values for each result are less than 0.05, indicating a significant difference.

Table 15: Result of Kruskal Wallis Test on Age

Questions	Kruskal Wallis	P-value
What extent is speed of a transaction important using cryptocurrency as a means of payment ?	2.891	0.089
What extent is trustworthiness important in the usage of cryptocurrency as a means of payment?	0.009	0.924
What extent is anonymity important in the usage of cryptocurrency as a means of payment?	0.452	0.501
The degree of privacy using cryptocurrency for payment transactions ?	0.001	0.968

The ease of use of cryptocurrency in comparison to conventional currency ?	5.41	0.02
The degree of risk in making payment using cryptocurrency?	3.82	0.05
How likely are you will make use of cryptocurrency to make payment if suggested by a family member or close friend?	7.55	0.005
The degree of public demand for cryptocurrency?	4.407	0.035

No of respondents = 82 ; significant p-value <0.05**

Result : According to Table 15, there is no significant difference between factors such as speed, trust, anonymity, privacy, and privacy risk and age group of respondents. Other factors, however, show a significant difference because their value is less than 0.05.

Table 16: Result of Kruskal Wallis Test on Qualification

Questions	Kruskal Wallis	P-value
What extent is speed of a transaction important using cryptocurrency as a means of payment ?	35.627	0.002
What extent is trustworthiness important in the usage of cryptocurrency as a means of payment?	26.746	0.002
What extent is anonymity important in the usage of cryptocurrency as a means of payment?	26.454	0.002
The degree of privacy using cryptocurrency for payment transactions ?	29.488	0.005
The ease of use of cryptocurrency in comparison to conventional currency ?	19.066	0.001
The degree of risk in making payment using cryptocurrency?	23.955	0.009
How likely you will make use of cryptocurrency to make payment if suggested by a family member or close friend?	15.749	0.007
The degree of public demand for cryptocurrency?	22.483	0.002

No of respondents = 82 ; significant p-value <0.05**

Result : According to the Kruskal-Wallis test, there is a significant difference between the factors that influence users and the qualifications of respondents, as shown in Table 16

Table 17: Result of Kruskal Wallis Test on Nationality

Questions	Kruskal Wallis	P-value
What extent is speed of a transaction important using cryptocurrency as a means of payment ?	1.3275	0.249
What extent is trustworthiness important in the usage of cryptocurrency as a means of payment?	7.9193	0.004
What extent is anonymity important in the usage of cryptocurrency as a means of payment?	12.849	0.003
The degree of privacy using cryptocurrency for payment transactions ?	8.4777	0.003
The ease of use of cryptocurrency in comparison to conventional currency ?	22.005	0.002
The degree of risk in making payment using cryptocurrency?	23.43	0.001
How likely you will make use of cryptocurrency to make payment if suggested by a family member or close friend?	26.803	0.002
The degree of public demand for cryptocurrency?	23.084	0.001

No of respondents = 82 ; significant p-value <0.05**

Result : Table 17 shows that there is no significant difference between respondents' speed and nationality, whereas other factors show a significant difference because their value is less than 0.05.

4.4 Reliability test: Cronbach alpha

The goal of this test was to determine the dependability of the data collected from respondents. The accepted value for determining the reliability of data is 0.7. Values less than this would not be considered acceptable. Despite the fact that perceived usefulness is 0.67, the Cronbach alpha shows a combined alpha of 0.84

Table 18

Factor	Cronbach alpha	No of Items	Combined reliability of all factors
Perceived Usefulness	0.67	3	
Subjective norm	0.74	3	0.84
Privacy risk	0.74	2	

Objective 3 : To identify factors that are likely to influence public's perception towards using cryptocurrency as means of payment.

Exploratory Factor Analysis

Exploratory factor analysis was used to identify factors that can be classified into a specific variable in the form of a factor. The exploratory factor analysis method was used to discover a relative underlying structure of the dataset. The Kaiser-Meyer-Olkin and Bartlett tests would be used to define which variables can be used in factor analysis. Values less than (0.50) are considered unacceptable for the KMO test. The Bartlett test has a cut-off value of (0.05) that is considered highly significant. Kaiser-Meyer-Olkin value of 0.81 and Barlett test 0.000, which are deemed acceptable, are shown in the table below.

Table 19: Measures to determine factors that can be used for analysis	
Kaiser-Meyer Olkin	0.81
Bartlett's test Chi-Square	281.763
Df	28
Sig	$2.22_x 10^{-16}$

According to the table below, 3 components were identified from a set of 6 variables based on eigenvalues greater than 1. According to Kaiser guidelines, the fundamental goal of factor analysis is to divide a huge amount of data into groups, and values that can be regarded factors must have values greater than 1 (Duwi, 2020).

Table 20: Initial Eigenvalues

Factors	Total	Variance %	Cumulative %
1	1.56	0.20	0.20
2	1.35	0.17	0.36
3	1.16	0.14	0.51
4	0.96	0.12	0.63
5	0.85	0.11	0.74

Table 21: Extracted square sum using Oblimin method

Factor No	Total	Variance %	Cumulative %
1	2.14	0.27	0.27
2	1.82	0.23	0.49
3	1.15	0.14	0.64

Table 22: Analysis Rotated Component Matrix

Variables	Factor 1	Factor 2	Factor 3
Influence	0.8		
Ease. Of. Use	0.6		
Public Demand	0.5		
Trust		0.7	
Speed		0.5	
Anonymity		1.0	
Risk			0.4
Privacy			0.9

Confirmatory Factor Analysis

CFA Model 1

Confirmatory factor analysis is used to prove that there is a link between factors and the use of cryptocurrency as a payment method. Three factors were discovered during the exploratory factor analysis above. The primary goal of using confirmatory factor analysis would be to test hypotheses.
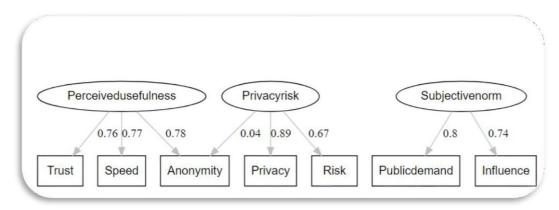

Fig 1 : Confirmatory Factor Analysis

Based on the study using the CFA technique is able to identify three factors in name of **perceived usefulness, privacy risk, and subjective norm** that influences users' decision to use cryptocurrency as a means of payment

Fit Indices

The application of fit indices demonstrates the measurements required to determine whether these data are suitable for confirmatory factor analysis. The indices used have acceptable chi- square, comparative fit, and standardized root mean square residual values.

Table 23: Result of Fit indices derived from confirmatory factor analysis.

Criteria	Result	Cut-off- value	Outcome
Chi-Square	25	Small value	Accept
Comparative fit index	0.94	> 0.90	Accept
SRMR	0.06	<0.07	Accept

Hypothesis Testing

Following the use of confirmatory factor analysis testing, hypothesis testing is carried out to determine the factors that are influential in influencing cryptocurrency users.

Table 24: Hypothesis testing using confirmatory factor analysis evaluation.

	Estimate	Z-value	P-value	Label
PR➜ANON	1.504	3.087	0.832	Reject
PU➜ Trust	1.000	*****	*****	Accept
PR ➜ Risk	0.669	0.000	0.000	Accept
SN➜Public	1.000	*****	*****	Accept

PR = Privacy risk, Anon = Anonymity, PU = Perceive Usefulness, SN = Subjective norm, Public demand

H01 Privacy risk has no negative impact on a user's anonymity when using cryptocurrency as a payment method.

- With a P-value greater than 0.05 demonstrates that privacy risk does not have a negative effect on people using cryptocurrency as a means of payment

H02 Perceived usefulness of cryptocurrency has no effect on a user's trust in its adoption.

- With a P-value greater less than 0.05 demonstrates that perceive usefulness can influence user's trust adopting cryptocurrency as a means of payment .

H03 The risk of losing one's privacy has no negative consequences for someone who uses cryptocurrency as a means of payment

- With a P-value greater less than 0.05 demonstrates the risk of losing one's privacy does have a negative consequences for someone who uses crytocurrency as a means of payment.

H04 Subjective norm has no positive effect on public demand for cryptocurrency as a payment method

- With a P-value greater less than 0.05 demonstrates that subjective norm have positive effect on the public demand of people using cryptocurrency as a means of payment.

6. Evaluation

With a p-value greater than 0.05, the above-mentioned report and findings show that the privacy risk has no effect on cryptocurrency users' anonymity. The vast majority of respondents believe that cryptocurrency transactions can be conducted anonymously from the general public. According to a research report, people's decision to use cryptocurrency as a form of payment in Saudi Arabia is unaffected by privacy or financial risk (Ehab, 2020). It is clear that the use of blockchain technology can ensure that people's cryptocurrency transactions remain secure from the public.

In contrast to the previous finding, another finding indicates that privacy risk has a negative impact on a person's decision to use cryptocurrency with a value less than 0.05.There are research studies that support this result, stating that people are more concerned about losing money and expect to be at risk when using cryptocurrency(Afzalur andAyub Khan, 2021).It is important to note that malicious attackers are constantly looking for new ways to disrupt cryptocurrency transactions. This effect is likely to influence people's decision to use cryptocurrency as a means of payment.

The impact of subjective norm was identified in this study by using cryptocurrency as a means of payment with a value less than 0.05 having a positive impact on public demand. Previous research found that subjective norms have a negative impact on people's decisions to use cryptocurrency, but the findings were not statistically significant (Elham,2021). The role of subjective norms should not be underestimated, because people's opinions can have an impact on a person's decision.

The importance of gender should not be underestimated. In this study, demographic information had no effect on a person who used cryptocurrency as a means of payment. Gender differences among Slovak citizens were found to play a significant role in shaping their attitudes toward cryptocurrency in a recent study. Male respondents were found to have a greater understanding of cryptocurrencies and their use as payment methods (Afzalur & Ayub Khan, 2021).

7.1 Conclusion and Future Works

The primary goal of this research was to identify potential factors that might influence a person's decision to use cryptocurrency as a payment method in Dublin. Using the Theory of Reasoned Action, three factors were identified as playing a significant role in influencing a user's choice: perceived usefulness, subjective norm, and privacy risk. The research goal was met by determining the most commonly used crytocurrency in Dublin and assessing people's current knowledge of crytocurrency. According to the findings, perceived usefulness, subjective norm, and privacy risk are all factors that can influence a person's decision. Despite the study's findings, some limitations, particularly the small number of respondents, should be mentioned. The original goal was to receive 150 responses, but some people were hesitant to complete the survey. Some respondents had only a basic understanding, which influenced the study's findings. Another disadvantage of this study was that it concentrated on the younger generation rather than the older generation. This research did not solicit input from older generations. There were 1,250,000 people in Ireland aged 45 to 64 in 2021 from a recent survey conducted (statistica,2021).

The fact that the majority of participants held a graduate degree suggests that studies played a significant role. People with little education were being overlooked. A study discovered the significance of a well-educated person's ability to adapt to new technology. Nonetheless, the study's findings can be used to help the European Central Bank gain insight into younger generations' attitudes toward the potential adoption of the digital euro. When designing the digital euro, the central bank should prioritize privacy protection. People are understandably concerned about malicious attackers devising new tactics. It is critical to create a safeguard mechanism that will put their minds at ease.

7.1 Future work

More research is needed, especially in the areas of digital currency and blockchain technology. The financial industry would constantly evolve, with new technologies being introduced. As people shift to digital transactions for payment, the concept of crytocurrency is here to stay for the foreseeable future. It is critical to note that before implementing new technology, people's demographic information such as level of education, technological background, and gender role should be considered.

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Appendix: Questionaire

Demographic Data

This section would be used to examine demographics of respondents in relation to this topic

Gender: Male , Female, Prefer not say

Age: 20,20-29,30-39,50-above, Prefer not to say

Nationality: Irish, Non-Irish

Qualification: Graduate, Post -Graduate, Professional

Knowledge about crytocurrency

Do you have a technological background ? Yes/No

What would the best way to classify your knowledge about cryptocurrency? Beginner/ Knowledgeable/ Expert/ Prefer not to say

Do you use cryptocurrency ? If No, skip the next question Yes/No

What type of cryptocurrency do you use ?

Factors influencing the usage of crytocurrency as a means of payment

On a scale of 1-5 please rate on a basis of 1 = Very important 2 = Important 3 = Neither important or unimportant 4 = Unimportant 5 = Very Unimportant

Please rate to what extent is the speed of a transaction important using cryptocurrency as a means of payment?

Please rate to what extent is trustworthiness important in the usage of cryptocurrency as a means of payment?

Please rate to what extent is anonymity important in the usage of cryptocurrency as a means of payment?

Perceived Usefulness

On a scale of 1-5 please rate on a basis of 1 = Strongly agree 2 = Agree 3 = Fairly agree 4 = Disagree 5 = Strongly disagree

Please rate the degree of privacy using cryptocurrency for payment transactions?

Please rate the ease of use of cryptocurrency in comparison to conventional currency?

Please rate the degree of risk in making payment using cryptocurrency?

Subjective norm

This section identifies the important role of how influential other people's opinion can affect a person's judgment?

Please rate how likely you will make use of cryptocurrency to make payment if suggested by a family member or close friend?

Please rate the degree of public demand for cryptocurrenc