السنة الرابعة والعشرون/ عدد خاص / شهر تشرين الثاني/ سنة 2026 تاريخ قبول النشر/2025/8/3

https://doi.org/10.31272/ijes.v24.1644

المجلة العراقية للعلوم الاقتصادية
Iraqi Journal For
Economic Sciences

PISSN : 1812-8742 EISSE : 2791-092X Arcif : 0.375

تحليل استخدام Fast-Pay ومحددات الطلب عليه في مدينة اربيل للعام 2025

Analysis of using Fast-Pay and its demand determinants in Erbil City in 2025

هيلان ابراهيم عبدالله/الباحث
Helan Ibrahim Abdullah
helan.abdullah@su.edu.krd

أ.م. د. امير سليم محمد/ المشرف
Ameer Saleem Muhammed
ameer.muhammed@su.edu.krd

كلية الادارة والاقتصاد/ جامعة صلاح الدين/ اربيل

المستخلص

تهدف هذه الدراسة إلى تحديد مدى استعمال المواطنين للنقود الإلكترونية (Fast-Pay) وتحديد أغراض استخدامها المختلفة، فضلا عن تشخيص المواطنين الذين يستخدمونها على نطاق واسع، وقياس وتحليل محددات الطلب عليها. اعتمدت الدراسة على عينة مكونة من 391 مستخدمًا للنقود الإلكترونية في أربيل، وذلك من خلال توزيع إستمارة استبيان عليهم عن طريق (Google Form). اتبعت الدراسة المنهج الوصفي لوصف خصائص مستخدمي النقود الالكتروني (Fast-Pay)، مع اتباع المنهج التحليلي الذي استعمل فيه تحليل الارتباط والانحدار الخطي البسيط والتحليل العاملي لتحديد وتحليل محددات الطلب على النقود الإلكترونية (Fast-Pay). استنتجت الدراسة بأن الغالبية العظمى من مستخدمي النقود الإلكترونية هم من الشباب، الذين يتمتعون بمهارات جيدة في استخدام الإنترنت والأجهزة الذكية، فضلا عن مهارات جيدة في استعمال أدوات الدفع الإلكتروني. يُعد شراء أرصدة الإنترنت ووحدات الاتصالات والتحويلات المالية من بين الأغراض الأكثر تحديدًا لاستخدام النقود الإلكترونية. يعتقد معظم مستخدمي حسابات(Fast-Pay)أن الحساب يلعب دورًا جيدًا في تسهيل أعمالهم. وتم تأكيد دور وأهمية جميع محددات الطلب المأخوذة على النقود الإلكتروني (Fast-Pay). واقترحت الدراسة أنه من الضروري العمل على زيادة الوعي العام بمزايا النقود الإلكترونية من خلال وسائل الإعلام والإعلان لزيادة نشر الحساب بين المستخدمين. من المهم أن تولي المؤسسات التعليمية في كردستان اهتمامًا بتطوير ونشر الثقافة المالية بين المواطنين. ينبغي على مؤسسة "(Fast-Pay)"العمل على توفير النقود الإلكترونية بطريقة سهلة وبسيطة واقتصادية لجميع المواطنين بغض النظر عن أعمارهم ومستوياتهم التعليمية ودخلهم. من الضروري أن تعمل مؤسسات حكومة إقليم كردستان على تطوير البنية التحتية الإلكترونية للإنترنت، فضلاً عن سن القوانين والأنظمة لحماية حقوق مستخدمي النقود الإلكترونية وحماية حساباتهم من الاختراق ومخاطر السرقة والضياع.

الكلمات الرئيسية: النقود الإلكترونية، أنواع النقود الإلكترونية، الطلب على النقود الإلكترونية، محددات الطلب على النقود الإلكترونية.

Abstract

This study aims to determine the extent to which citizens utilize e-money (Fast-Pay) and determine the various purposes of this money usage, identify the citizens who use it

most frequently, and measure and analyze the determinants influencing the demand for this form of money. The study is based on a sample of 391 e-money (Fast-Pay) users in Erbil, and data were collected through a questionnaire distributed via Google Forms. The study followed a descriptive approach to describe the characteristics of e-money (Fast-Pay) users. Additionally, it followed an analytical approach, employing simple linear correlation and regression, and factor analysis to identify and analyze the determinants of demand for e-money (Fast Pay). The study concluded that the vast majority of e-money users are young people who possess good internet and smart device skills, as well as good skills in using electronic payment tools. Purchasing internet balance, communication balance, and money transfers are among the most specific uses of e-money. The results confirm the role and importance of all the determinants of demand for e-money (Fast-Pay). Finally, the study suggests that it should work to raise public awareness of the benefits of e-money through media and advertising to increase the spread of the account among users. It is important for educational institutions in Kurdistan to focus on developing and spreading financial literacy among citizens. The Fast-Pay Foundation should work to make e-money easy, simple, and economical for all citizens, regardless of age, educational level, or income. Kurdistan Regional Government institutions need to develop the electronic internet infrastructure. They should also enact laws and regulations to protect the rights of e-money users and safeguard their accounts from hacking, theft, and loss.

Keywords: Electronic money, types of e-money, demand for e-money, determinants of demand

1.Introduction: Recent technological advancements in devices, institutions, programs, and communications have led to the emergence of new forms of economic and informational transactions. This includes modern payment instruments such as electronic payments and electronic money, which facilitate free trade across countries without economic or geographical barriers while reducing the costs associated with money transfers

1.1 The study problem: The problems of this study are represented in the following questions: What is the extent of electronic money (Fast-Pay) use by citizens in Erbil? What are the main purposes of electronic money (Fast-Pay) in Erbil? What are the determinants influencing the demand for Fast-Pay (Fast-Pay) in Erbil?

1.2 The study objectives: This study aims to assess the extent of electronic money (Fast-Pay) usage, explore the various purposes for which it is used, and identify the determinants of demand for electronic money (Fast-Pay) among citizens in Erbil.

1.3 The study hypothesises: This study assumes that a significant number of people in Erbil use electronic money (Fast-Pay) for various purposes, particularly to purchase cell phone and internet balance. Additionally, the study assumes that there is a direct and significant relationship between all identified determinants of demand for electronic money (Fast-Pay) in Erbil.

1.4 The study significance: The significance of this study is that it shows

the positive aspects of electronic money(Fast-Pay) to the citizens of Kurdish society, which will certainly increase their demand for the money on the one hand, while helping Fast-Pay to improve its services to satisfy its users.

1.5 The study framework: The local framework of the study focuses on Erbil city, utilizing a sample of 391 respondents. The time framework of the study covers the year 2025.

2. Theoretical Concepts:

2.1 Electronic Money and its types: Electronic money, or e-money, represents the latest advancement in the payment system, and its definition is still evolving. According to Sasongko et al. (2022: 42-50), e-money refers to the prepaid money electronically stored on a server or chip, which can be transferred based on the user's payment needs. Mahendra et al. (2022: 14341-14350) describe e-money as a product where a specific amount is digitally recorded and stored on an e-money device, allowing it to be used for payments; during transactions, the balance is automatically deducted. Furthermore, Al-Laham and Al-Tarawneh (2009: 339-349) assert that electronic money enables consumers to utilize electronic communication tools to access traditional payment services. For instance, individuals can use standard personal computers and networks like the Internet for credit card payments, sending instructions to transfer money between bank accounts. Overall, electronic money serves as a payment method that facilitates financial transactions and the purchase of goods and services through electronic networks, while also functioning as a means of storing money (Cariaga et al., 2023: 22-28). E-money typically represents prepaid cash value stored on an electronic plastic card or in the memory of a smart device, such as a personal computer or mobile phone, and is used to conduct online transactions. In general, e-money can be classified into the following types:

- **Electronic Plastic Card:** This type of e-money is represented by electronic value stored on cards or chips. The money transfer process involves inserting or swiping the card into a card reader. Payments made using this card are conducted online, without the need for a bank account. Users can access their accounts through Internet Explorer, email, or their mobile phone. Electronic plastic cards are typically offered by non-bank institutions (Popovska-Kamnar, 2014: 79-92). This type of e-money is characterized by its convenience, speed, and efficiency (Puteri et al., 2022: 183-191).
- **Electronic Wallet:** An e-wallet serves as a digital equivalent of a conventional wallet, holding money as a unit of financial value that can be used to pay for goods and services. Unlike traditional wallets, e-wallets do

not contain physical cash. This type of e-money is used for electronic business and financial transactions over the Internet, whether on a computer or mobile device. E-wallets are regarded as one of the most important and prominent means of payment (Al-Kubisi, 2022: 361-39).

- **Electronic Check:** An electronic check is a three-party document executed electronically, either in whole or in part. It contains an order from the drawer (the person issuing the check) to the drawee bank, instructing it to pay a specified sum of money to a third party known as the beneficiary (Jaberi, 2009: 5). Electronic checks include the following information: check number, payee's name, payee's account number, bank name, beneficiary's name, amount to be paid, currency unit, expiration date, and the payee's electronic signature (Almomani, 2020: 128-143).

2.2 Demand for Electronic Money: Demand refers to the desire backed by purchasing power, which encompasses both the ability and willingness to purchase a good or service. In simpler terms, it is the capacity and readiness of a consumer to buy a specific quantity of a good or service at a given price within a specific market at a certain time (Oktavianty et al., 2023: 8357-8366). Generally, as the price of a product increases, the quantity demanded decreases, and vice versa (Hofstrand, 2019: 2). When it comes to the demand for money, it can be described as the desire of individuals to hold money for purchasing products and satisfying their needs (Oktavianty et al., 2023: 8357-8366). The demand for electronic money reflects the desire of individuals to acquire electronic means of payment, such as plastic cards, electronic wallets, and electronic checks, for conducting transactions and fulfilling their needs electronically. The demand for e-money is considered a derived demand, meaning individuals seek money primarily to use it for acquiring goods and services and settling their payments electronically.

2.3 Determinants of Demand for Electronic Money: The factors that influence the use of electronic money (the determinants of demand for electronic money) can be presented as follows:

A. **Price affordability of e-money:** Price is the amount of money charged for a product or service, or the amount of value exchanged by customers to obtain the benefits of owning or using a product or service (Yogi and Pramudana, 2021: 44-52). Price affordability factors can influence a person’s willingness to use e-money (DEWI et al., 2021: 102-106). Similarly, Suryaningsih et al. (2022: 375-384) believe that price affordability, similar to other factors such as income, ease of use, and advantages of use in influences the individual interest in using electronic money. On the other hand, according to Putra et al. (2021: 1349-1359), the prices of products (e-money) and the offers presented by e-money issuing

agencies affect the use of the money by individuals. Therefore, these agencies compete in terms of the prices of their products and promotions (advertised offers) to attract and acquire new customers and retain their existing customers.

B.Individual personal income: This refers to any form of income received by citizens in a particular country or region. An increase in personal income may lead to a rise in demand for electronic money, as people may utilize it not only for goods and services but also for financial products (Rahayu et al., 2023: 1-19).

C. Intention to use e-money: Intention refers to a user's willingness to engage with electronic money, indicating a strong desire to use it or a hope to use it occasionally. The motivation to adopt new technology significantly influences its actual use. For example, the intention to use mobile banking directly impacts actual usage (Qu et al., 2022: 1-19). Intention acts as an important variable, shaped by factors that affect an individual's willingness to use electronic money (Viviana and Mulyono, 2021: 315-320).

D. Enjoyment: In the context of technology, enjoyment refers to the pleasure or satisfaction individuals derive from using it. Consumers often experience happiness when engaging with new technology. There is a direct link between hedonic motivations and an individual's intention to use technology. Enjoyment motivation is a significant predictor of user attitudes toward adopting new technologies and electronic money (Alfanzi and Daulay, 2021: 109-122).

E.Age: Age influences perception, mentality, and understanding. As individuals age, their knowledge typically increases, impacting their demand for electronic money. Young people, particularly those between the ages of 17 and 37, are usually more adept at using technology and are therefore more inclined to engage in electronic financial transactions (Rahayu et al., 2023: 1-19).

F.Gender: Gender refers to the biological differences between males and females, as well as the behavioural criteria and values associated with these differences. There are notable distinctions between men and women in two main areas: security and habits. Women tend to be more concerned about the security of e-payments, while men's usage is often dictated by established habits, whereas women are influenced more by behavioural intentions (Rahayu et al., 2023: 1-19).

G. Internet availability and cost: The ability to use e-money relies heavily on the availability of the Internet and its infrastructure. Without Internet access, electronic money cannot be utilized. Limitations in internet connectivity can hinder individuals from transacting using electronic

money (Sinambela and Darmawan, 2022: 56-61). Additionally, costs associated with technology include internet fees, banking service charges, and transaction fees. The cost of internet access has been identified as a crucial factor influencing individuals' intention to use e-money (Alfanzi and Daulay, 2021: 109-122).

H. Individual attitudes and perceptions: An individual's general attitude toward information technology and its applications significantly influences whether they choose to use electronic money or not (Azmana et al., 2020: 129-138). The attitude toward e-money is defined as the extent to which a person evaluates their behaviour, encompassing feelings of "liking" (positive emotional disposition) and "disliking" (negative emotional tendencies). Consumers who favour e-money are often enthusiastic about using it, indicating that a positive attitude toward e-money has a significant impact on the intention to adopt it (Qu et al., 2022: 1-19).

I. **Speed and efficiency of e-money:** There is no doubt that using electronic money for commercial transactions is more efficient, faster, and more convenient than using paper money, especially for low-value transactions (Sinambela and Darmawan, 2022: 56-61). With just a few taps on your phone, you can complete transactions that once required travel and waiting in line, such as paying cell phone or landline bills. Therefore, speed and efficiency are key motivators for users to adopt e-money (Widiyati and Hasanah, 2020: 36-45).

J. Ease of use of e-money: Ease of use refers to the extent to which a person believes a particular system is easy to operate. It can be understood as the belief that using a technology will require minimal mental and physical effort (Indrawana et al., 2021: 4146-4156). Customers are more likely to adopt an e-payment system when they perceive it to be user-friendly (Aryal, 2021: 86-99).

K. **Perceived benefits of e-money:** The perceived usefulness of e-money significantly influences consumer attitudes toward its adoption. A favourable attitude towards using e-money develops when consumers recognize its benefits, such as enabling faster and more practical payment processes (Indrawana et al., 2021: 4146-4156).

L. **Convenience of e-money:** Compatibility refers to how well an innovation aligns with current societal values, past experiences, and consumer needs. Greater compatibility boosts users' confidence in adopting new technology. Mobile payment users find it convenient when they perceive that the application effectively supports their activities. This perceived convenience can enhance the intention to use the technology (Widiyati and Hasanah, 2020: 36-45).

M. Social impact: Social influence is the perceived pressure from society to engage in certain behaviours, specifically the extent to which an individual

feels they should use technology because others believe they should (Indrawana et al., 2021: 4146-4156). Friends, colleagues, and family members play a crucial role in encouraging users to adopt e-money (Handoyo et al., 2024: 314-329). Notably, when consumers observe their peers using electronic money and experiencing its benefits, they are more likely to feel motivated to use it themselves (Alfanzi and Daulay, 2021: 109-122).

N. **Role of government:** The term "government" is derived from the word "command," which refers to the act of directing or controlling something. Governance is defined as the process of meeting human needs as a consumer of public and civic services, while the agency responsible for managing these services is known as the government (Akbar and Rachmawati, 2023: 439-459). In the context of e-money, the government's role is crucial, as it is responsible for establishing regulations, ensuring security, providing facilities, and promoting public initiatives for the use of e-money. This role encompasses responsibilities related to budgeting, taxation, consumer protection, education on human resources, communication network infrastructure, logistics, and cybersecurity. In summary, the government significantly influences the adoption and use of electronic money (Lukito, 2017: 349-367).

O. **Trust in e-money:** Previous studies have shown that trust is a key factor influencing customers' willingness to engage in e-commerce transactions and online money exchanges. The significance of trust in electronic payments is amplified by the high levels of uncertainty and risk associated with most online transactions. Reliability is essential for the success of e-payment systems (Aryal, 2021: 86-99).

P. **Safety and security in the use of electronic money:** While using electronic money is generally considered safer than carrying cash, it is still vulnerable to hacking. Some electronic money systems lack safety codes, making it easy for others to misuse funds if an electronic money card is lost (Sinambela and Darmawan, 2022: 56-61). Therefore, it is crucial for users to feel confident that their personal information is secure when using e-money. Consumers should consider secure practices when using electronic money (Cariaga et al., 2023: 22-28). Generally, consumers desire control over what data is collected and how it is used. For this reason, security can significantly influence consumers' decisions to use electronic payment systems (Teoh et al., 2013: 465-485). Many people hesitate to use electronic money in the event of a data breach. By enhancing security measures, consumers are more likely to adopt electronic payment systems (Azmana et al., 2020: 129–138).

Q. **Financial Literacy:** Financial literacy encompasses the knowledge, skills, and confidence that shape attitudes and behaviours in decision-making and financial management, ultimately leading to financial well-

being (Akbar and Rachmawati, 2023: 439-459). Financial literacy can be measured through three indicators: financial knowledge, financial behaviour, and financial attitudes (Kholilah and Iramani, 2013: 69-80). According to Liao and Chen (2020: 126-138), financial literacy significantly impacts the use of e-money, suggesting that higher levels of financial knowledge can encourage individuals to adopt technologies such as electronic money.

3. Methodology:

3.1 Community and sample of the study: The community for this study includes all users of Fast-Pay accounts, which are a form of electronic wallet and electronic money, located in the City of Erbil. There are approximately 290,000 users in this community. The sample for the study consists of a select group of Fast-Pay account users in Erbil who received questionnaires via Google Forms and participated in the survey addressing the study problem.

3.2 Types and sources of data: To explore the theoretical aspects of the study focusing on electronic money (e-money), its demand, and the relevant determinants, the study relies on books, theoretical sources, and previous practical studies related to e-money. For the practical domain, the study gathered data from a sample of 391 Fast-Pay users in Erbil by distributing a specialized questionnaire via Google Forms.

3.3 Study analysis approach: This study relies on descriptive and analytical approaches. Regarding the descriptive approach, the study has relied on theoretical sources related to various aspects of electronic money and the determinants of demand for it. For the analytical approach, the study uses simple linear correlation and regression, and factor analyses to identify and analyze the determinants of demand for electronic money (Fast-Pay) in Erbil based on the data obtained through the distribution of a questionnaire to 391 users.

3.4Definition and Identification of Study Variables:

- **Dependent Variable:** The dependent variable in this study is the demand for Fast-Pay, specifically measured by the number of users holding Fast-Pay accounts in Erbil.
- **Independent Variables:** These variables are the determinants that influence the dependent variable (demand for Fast-Pay in Erbil) and are categorized as follows:

- **General determinants derived from normal demand:** This includes factors such as the cost of using Fast-Pay, the cost of alternative payment services, monthly income affordability, personal preferences, social norms, expectations, time considerations, and the necessity for electronic payment.
- **Determinants related to the electronic infrastructure available:** This category encompasses the availability and variety of internet connections,

internet speed, ease of access to internet services, and the presence of offices for depositing and withdrawing money from Fast-Pay accounts.

- **Determinants related to Fast-Pay's advantages:** These determinants include that Fast-Pay is considered an attractive payment option, serving as an efficient tool for storing and saving money, facilitating quick and effective transactions, and providing various discounts and services through the platform.
- **Determinants related to Fast-Pay usage:** They include the user-friendliness of Fast-Pay, the simplicity of depositing and transferring funds from associated payment accounts, and the quick processing of transactions.
- **Determinants related to Fast-Pay's economic efficiency:** Key aspects include the reduced time and effort required for transactions, low transaction fees, absence of currency exchange costs, minimal money transfer fees, and the swift payment process.
- **Determinants related to social influence (recommendations from others):** These encompass recommendations from family members, relatives, friends, and colleagues, which can impact the decision to use Fast-Pay.
- **Determinants related to institutional influence (public and private):** Influences stem from various entities, including civil society organizations, businesses, media, advertising, and government policies, campaigns, and initiatives.
- **Determinants related to Fast-Pay's security and guarantee:** These determinants consist of the protection of personal information, the safety of usage, the reliability of payments through the Fast-Pay wallet, defences against hacking, and compensation for account holders in the event of a security breach.
- **Determinants related to financial literacy:** Determinants include financial awareness, financial planning, financial management, financial protection, and financial literacy.

3.5 Fast-Pay account overview: Fast-Pay is the fastest, easiest, and most secure mobile and electronic wallet available in Iraq. It allows millions of users to access smart financial services for purchases, mobile phone recharges, internet top-ups, money transfers, bill payments, and more. Operating since 2019, Fast-Pay has been a prominent player in the Kurdistan Region and across Iraq for six years. It employs over 200 staff and serves around 800,000 users in the Kurdistan Region, supported by 34 sales and service centers. Fast-Pay complies with the Payment Application Data Security Standard, ensuring the protection of user data and transactions. This standard is recognized globally and maintained by the

Payment Card Industry Security Standards Council. The Fast-Pay app is available 24/7, enabling users to monitor their wallets and financial transactions at any time (Fast-Pay, 2025).

4. Results and discussion:

4.1 Study tool stability analysis: To ensure the validity and reliability of the study tool, the internal stability coefficient (Cronbach's Alpha) was calculated for all questionnaire items. This coefficient was developed in 1651. It is used as a measure of the internal consistency of a test and measures the internal consistency between items of the same theme, with a value between 0 and 1 (Tavakol and Dennick, 2011: 53-55). Table 4.1 explains the results of the internal consistency analysis of the items of the study instrument (questionnaire) using Cronbach's alpha coefficient. Regarding the first theme (use of Fast-Pay and its role and barriers), the stability coefficient was 0.739, a value that falls within the statistically acceptable level ($0.7 \leq \alpha < 0.8$). As for the second theme (determinants of Fast-Pay demand), it realized a highly stable coefficient of 0.949, indicating an excellent degree of internal consistency among its 42 items and reflecting that these determinants were accurately measured. When calculating the overall stability coefficient for the questionnaire (49 items), its value reached 0.952, which is the highest qualified stability score, solidifying the validity of the tool and its ability to measure target variables accurately and reliably. Thus, it can be concluded that the study tool used has a high degree of stability, making the results obtained from it statistically and scientifically reliable, and eligible for use in similar studies or subsequent field applications.

Table 4.1: Internal stability coefficient (Cronbach's Alpha) for all questionnaire items.

No.	Dimension	No. of Items	Cronbach's Alpha	Result
1	Use (Fast-Pay) and its role and barriers	7	0.739	Stable
2	Determinants of demand for (Fast-Pay)	42	0.949	Stable
3	The questionnaire as a whole	49	0.952	Stable

Source: Researcher's work based on the results of statistical analysis.

4.2 Description of characteristics of respondents: Table 4.2 shows the personal characteristics of the respondents in terms of gender, age, level of education, monthly income, and occupation:

Table 4.2: Distribution of respondents according to their characteristics

Characteristics		Frequency	Rate (%)
Gender	Male	274	70.1
	Female	117	29.9
	Total	391	100
Age group	<20	37	9.5
	20-29	210	53.7
	30-39	96	24.6
	40-49	35	9
	50-59	13	3.3
	>=60	0	0
	Total	391	100
Level of education	illiterate	1	0.3
	He reads and writes	4	1
	Basic	12	3.1
	High School	42	10.7
	Diploma	81	20.7
	Bachelor's Degree	173	44.2

	Higher Diploma	24	6.1
	Master's Degree	36	9.2
	Doctorate	18	4.6
	Total	391	100
Monthly income (Thousand Dinars)	<500	85	21.7
	500-749	60	15.3
	750-999	115	29.4
	1000-1449	72	18.4
	1500-1999	26	6.60
	>=2000	33	8.40
	Total	391	100
Working	Yes	345	88.2
	No	46	11.8
	Total	391	100
Occupation	Government employee	92	23.5
	Private sector employee	168	43
	merchant	22	5.6
	The working man	12	3.1
	The investor	8	2
	farmer	1	0.3
	craftsman	2	0.5
	The contractor	3	0.8
	Other's	83	21.2
	Total	391	100

Source: Researcher's work based on the results of statistical analysis.

Regarding gender, males constitute the highest proportion of the sample (70.1%), while the proportion of females is (29.9%). This indicates that males are more involved or interested in quantified financial transactions in the studied environment. As for age, the age group (20-29 years) among the respondents comes first with (53.7%), followed by the age group (30-39 years) with (24.6%). This distribution reflects a clear dominance of young and middle-aged groups, who are most engaged and interactive with financial technology due to their integration into the labour market and easy access to technology. According to the respondents' qualifications, those with bachelor's degrees rank first among Fast-Pay users with (44.2%). This is followed by those with diplomas (20.7%). Then come those who have completed high school (10.7%). This distribution reflects the fact that most users have a high school diploma, making it easier for them to use electronic programs such as Fast-Pay. Concerning the income of the respondents, those with incomes between (799-750) thousand dinars are the first among the respondents with (29.4%), followed by those with incomes less than (500) thousand dinars (21.7%). This distribution explains that the largest proportion of Fast-Pay users are in the low and middle classes, suggesting that this is compatible with limited use of electronic money (Fast-Pay). With respect to employment status, the majority of Fast-Pay users are employed (88.2%), while the rest are not employed (11.8%). Such division of consumers into those who work and those who do not gives the study great analytical power, since most members of the sample are engaged in economic activity and ongoing financial transactions. Based on occupation, those working in the private sector are the first among respondents (43%), followed by those working

in the public sector (23.5%), followed by freelancers or businessmen (5.6%). These results indicate a dominance of the private sector in the sample, which is consistent with and consistent with this group's reliance on the use of flexible payments.

4.3 Description of using a Fast-Pay account: As shown in Table (4.3), researchers illustrate the use of the Fast-Pay account, such as the ability to use the Internet and smart devices, skills in using electronic payment tools, duration of use, and purpose of use, as below:

Table 4.3: Distribution of respondents according to the use of Fast-Pay

Items		Frequency	Rate (%)
Ability to use the Internet and smart devices	Very good	309	79
	Good	68	17.4
	Medium	12	3.1
	Bad	2	0.5
	Total	391	100
Skill in the use of electronic payment tools	Very good	258	66
	Good	83	21.2
	Medium	44	11.3
	Bad	6	1.5
	Total	391	100
Duration of use (years)	Less than a year	96	24.6
	(1-3) years	155	39.6
	(4-6) years	103	26.3
	More than (6) years	37	9.5
	Total	391	100%
Purpose of use	Purchase of communication units	227	22
	Selling of communication units	37	3.6
	Purchase of internet units	234	22.7
	Selling internet units	35	3.4
	Purchase of video game units	63	6.1
	Selling video game units	20	1.9
	Transfer money to each other	201	19.5
	Paying for goods and services	113	10.9
	Paying rent, such as water, electricity, and school fees	13	1.3
	Paying taxes and fees	12	1.2
	Other	77	7.5
	Total	1032[1]	100

Source: Researcher's work based on the results of statistical analysis.

Regarding the ability to use the Internet and smart devices, the majority of respondents have a very good ability to use the Internet and smart devices (79%), while those who have a good ability to use the Internet and smart devices come second (17.4%). These results show that the vast majority of respondents are willing to use the Internet and smart devices, which facilitates the increased use of e-payments and e-money. Related to the skills in using e-payment instruments, the vast majority of the respondents have very good skills in using e-payment instruments (66%), while those who have good skills in using e-payment instruments come second (21.2%). These results suggest that, as the majority of the respondents have good skills in using electronic payment instruments, this helps them to resort to using electronic payments and electronic money. About the duration of use of Fast-Pay accounts, respondents who have been using Fast-Pay accounts for 1-3 years are in the first place with (39.6%), followed by respondents who have

[1] **Respondents chose more than one answer.**

been using Fast-Pay accounts for 4-6 years with (26.3%). Also, (24.6%) of them have been using the account for less than a year, followed by those who have been using the account for more than six years (9.5%). Concerning the purposes for using Fast-Pay, the primary uses of Fast-Pay accounts are varied, with the most common being purchasing internet balance (22.7%) and buying mobile phone cards (22%). Additionally, users engage in money transfers among themselves, accounting for 19.5%. Paying for goods and services ranks next, at (10.9%). Overall, these results indicate that Fast-Pay accounts are primarily used for personal communication purposes.

4.4 Describe the role of Fast-Pay in facilitating business and its problems: As shown in Table 4.4, the researcher points out the role of Fast-Pay in facilitating business and its problems through the use of statistical tools such as frequency, percentage, mean, standard deviation, and the consistency rate: Regarding the role of Fast-Pay accounts in facilitating business, there is a strong positive orientation by the participants towards the use of Fast-Pay accounts, as the overall mean reached (4.26) with an overall consistency rate (85.3%) and a low standard deviation of (0.84). This indicates that Fast-Pay accounts play a good role in facilitating users' transactions. About the problems faced by the Fast-Pay account, it is obvious that some problems and obstacles prevent the use of the account (Fast-Pay), because the overall mean reached (3.58) with a general consistency rate (71.6%) and standard deviation (1.14). This indicates that the account faces some problems, such as limiting the full use of the account among all citizens of society, and the high cost of the account in daily transactions.

Table 4.4: Distribution of respondents according to the role of Fast-Pay accounts in facilitating business and problems related to Fast-Pay accounts

Items Name	Items	Strongly agree		Agree		Somewhat agree		Disagree		Strongly disagree		Mean	Standard Deviation	Consistency Rate (%)
		Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)			
The role of Fast-Pay accounts in facilitating business	Q1	186	47.6	124	31.7	65	16.6	14	3.6	2	0.5	4.22	0.885	84.4
	Q2	203	51.9	137	35	44	11.3	5	1.3	2	0.5	4.37	0.772	87.4
	Q3	174	44.5	139	35.5	62	15.9	14	3.6	2	0.5	4.2	0.869	84
	Total											**4.26**	**0.84**	**85.3**
Problems related to Fast-Pay accounts	Q1	98	25.1	102	26.1	99	25.3	61	15.6	31	7.9	3.45	1.241	69
	Q2	98	25.1	121	30.9	113	28.9	39	10	20	5.1	3.61	1.118	72.2
	Q3	101	25.8	117	29.9	121	30.9	37	9.5	15	3.8	3.64	1.081	72.8
	Q4	98	25.1	118	30.2	118	30.2	39	10	18	4.6	3.61	1.104	72.2
	Total											**3.58**	**1.14**	**71.6**

Source: Researcher's work based on the results of statistical analysis.

4.5 Description of the determinants of demand for (Fast-Pay): As presented in Table 4.5, the researchers refer to the role of determinants of demand for Fast-Pay accounts using statistical tools such as frequency, percentage, mean, standard deviation, and consistency rate:

Table 4.5: Description of the determinants of demand for Fast-Pay

Determinants	Items	Strongly agree		Agree		Somewhat agree		Disagree		Strongly disagree		Mean	Standard Deviation	Consistency Rate (%)
		Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)			
General determinants derived from normal demand	Q1.1	148	37.9	148	37.9	68	17.4	22	5.6	5	1.3	4.05	0.944	81
	Q1.2	98	25.1	129	33	103	26.3	45	11.5	16	4.1	3.63	1.101	72.6
	Q1.3	109	27.9	140	35.8	97	24.8	21	5.4	24	6.1	3.74	1.109	74.8
	Q1.4	159	40.7	140	35.8	80	20.5	10	2.6	2	0.5	4.14	0.862	82.8
	Q1.5	113	28.9	138	35.3	102	26.1	25	6.4	13	3.3	3.8	1.033	76
	Q1.6	76	19.4	116	29.7	82	21	67	17.1	50	12.8	3.26	1.302	65.2
	Q1.7	160	40.9	138	35.3	61	15.6	26	6.6	6	1.5	4.07	0.983	81.4
	Q1.8	171	43.7	148	37.9	62	15.9	8	2	2	0.5	4.22	0.822	84.4
	Total											**3.86**	**1.02**	**77.3**
Determinants related to the electronic infrastructure available	Q2.1	206	52.7	108	27.6	60	15.3	13	3.3	4	1	4.36	0.819	87.2
	Q2.2	212	54.2	119	30.4	47	12	13	3.3	0	0	4.36	0.819	87.2
	Q2.3	213	54.5	107	27.4	51	13	16	4.1	4	1	4.3	0.911	86
	Q2.4	192	49.1	122	31.2	59	15.1	15	3.8	3	0.8	4.3	0.891	86
	Total											**4.33**	**0.86**	**86.6**
Determinants related to Fast-Pay's advantages	Q3.1	193	49.4	136	34.8	51	13.0	10	2.6	1	0.3	4.31	0.866	86.2
	Q3.2	136	34.8	128	32.7	83	21.2	28	7.2	16	4.1	3.95	1.026	79
	Q3.3	194	49.6	124	31.7	59	15.1	12	3.1	2	0.5	4.27	0.864	85.4
	Q3.4	141	36.1	126	32.2	86	22.0	26	6.6	12	3.1	3.92	1.058	78.4
	Total											**4.11**	**0.95**	**82.3**
Determinants related to Fast-Pay usage	Q4.1	202	51.7	124	31.7	54	13.8	9	2.3	2	0.5	4.32	0.846	86.40
	Q4.2	207	52.9	117	29.9	55	14.1	10	2.6	2	0.5	4.38	0.788	87.60
	Q4.3	214	54.7	120	30.7	51	13.0	4	1.0	2	0.5	4.41	0.823	88.20
	Q4.4	227	58.1	110	28.1	43	11.0	8	2.0	3	0.8	4.37	0.779	87.40
	Total											**4.37**	**0.81**	**87.4**
Determinants related to Fast-Pay's economic efficiency	Q5.1	207	52.9	128	32.7	49	12.5	6	1.5	1	0.3	4.1	0.944	82
	Q5.2	163	41.7	133	34.0	72	18.4	18	4.6	5	1.3	3.79	1.12	75.8
	Q5.3	132	33.8	110	28.1	99	25.3	35	9.0	15	3.8	3.72	1.111	74.4
	Q5.4	119	30.4	113	28.9	107	27.4	36	9.2	16	4.1	4.38	0.735	87.6
	Q5.5	202	51.7	144	36.8	38	9.7	7	1.8	0	0	3.16	1.315	63.2
	Total											**3.83**	**1.05**	**76.6**
Determinants related to social influence (recommendations from others)	Q6.1	81	20.7	82	21.0	96	24.6	83	21.2	49	12.5	3.2	1.312	64
	Q6.2	80	20.5	94	24.0	93	23.8	74	18.9	50	12.8	3.88	1.135	77.6
	Q6.3	141	36.1	133	34.0	62	15.9	38	9.7	17	4.3	3.06	1.319	61.2
	Total											**3.38**	**1.26**	**67.6**
Determinants related to institutional influence (public and private)	Q7.1	69	17.6	87	22.3	89	22.8	89	22.8	57	14.6	3.22	1.29	64.4
	Q7.2	76	19.4	99	25.3	99	25.3	68	17.4	49	12.5	3.31	1.282	66.2
	Q7.3	87	22.3	103	26.3	97	24.8	61	15.6	43	11	2.87	1.338	57.4
	Q7.4	59	15.1	75	19.2	88	22.5	94	24	75	19.2	4.09	0.948	81.8
	Total											**3.37**	**1.21**	**67.5**
Determinants related to Fast-Pay's security and guarantee	Q8.1	157	40.2	144	36.8	66	16.9	17	4.3	7	1.8	4.05	0.973	81
	Q8.2	148	37.9	153	39.1	61	15.6	20	5.1	9	2.3	3.87	1.096	77.4
	Q8.3	123	31.5	143	36.6	95	24.3	23	5.9	7	1.8	3.9	0.973	78
	Q8.4	118	30.2	111	28.4	88	22.5	35	9	39	10	3.6	1.275	72
	Q8.5	121	30.9	88	22.5	97	24.8	47	12	38	9.7	3.53	1.302	70.6
	Total											**3.79**	**1.12**	**75.8**
Determinants related to financial culture	Q9.1	94	24	140	35.8	122	31.2	30	7.7	5	1.3	3.74	0.953	74.8
	Q9.2	87	22.3	153	39.1	117	29.9	28	7.2	6	1.5	3.73	0.937	74.6
	Q9.3	100	25.6	134	34.3	121	30.9	25	6.4	11	2.8	3.73	1.003	74.6
	Q9.4	100	25.6	138	35.3	110	28.1	34	8.7	9	2.3	3.73	1.011	74.6
	Q9.5	96	24.6	152	38.9	107	27.4	27	6.9	9	2.3	3.76	0.974	75.2
	Total											**3.74**	**0.98**	**74.8**

Source: Researcher's work based on the results of statistical analysis.

General determinants derived from normal demand: As a whole, the general determinants derived from normal demand affect the use of fast-pay accounts, with an average consistency rate (77.3%) and an overall mean and standard deviation of (3.86) and (1.02), respectively. These results indicate that general determinants of demand, such as the price of

the product itself, the price of other complementary and substitute products, income, traditions, expectations, and desires, influence the use of fast-pay by respondents like any other products.

Determinants related to electronic infrastructure available: The overall consistency rate of these determinants is (86.6%) with a mean (4.33) and standard deviation (0.86), indicating high satisfaction with the availability of e-infrastructure facilitating the use of Fast-Pay accounts in the community. Overall, these results reflect the important role of the availability of electronic infrastructure and the availability of the Internet in encouraging individuals to use electronic payment tools such as Fast-Pay.

Determinants related to Fast-Pay advantages: The overall consistency rate of these determinants is (82.3%) with a mean of (4.11) and a standard deviation of (0.95), indicating a moderate change in respondents' opinions and reflecting their perceptions of the good characteristics of the account service and their role in using that account. Generally, these results reflect that participants consider the positive attributes of Fast-Pay accounts as a new payment alternative to regular payments and consider them important reasons for using the account.

Determinants related to Fast-Pay usage: Because the overall consistency rate of these determinants is (87.4%) with an overall mean (4.37) and overall standard deviation (0.81), this indicates a clear consensus among participants regarding the ease of use of the account. The results indicate a strong consensus among consumers that Fast-Pay accounts are easy and fast, increasing the likelihood of wider adoption and use in everyday financial transactions.

Determinants related to economic efficiency: The determinants of the economic efficiency of using Fast-Pay, which include five variables, have a positive impact on account use, with an overall consistency rate of (76.6%), an overall mean of (3.83) and an overall standard deviation of (1.05). These results indicate that the economic efficiency of (Fast-Pay accounts are largely accepted by consumers, especially in terms of cost reduction and ease of use, while the need to increase trust by speeding up daily financial transactions.

Determinants related to social influence (recommendations of others): The overall mean of these determinants is (3.38), with the overall standard deviation is (1.26), and a consistency rate of (%67.6), indicating a moderate level of approval among participants, a clear difference in users' perceptions of others' influence on Fast-Pay, and reflecting a relatively limited social influence on the decision to use that account. The results indicate that determinants concerning social influence (recommendations of others) are not the primary and influential factors for the decision to use

an account (Fast-Pay), and their influence remains limited to specific relationships such as friends and acquaintances.

Determinants related to institutional influence (Public and Private):
The overall mean, standard deviation, and overall consistency of this determinant are (3.37), (1.21), and (67.5%), respectively. This indicates that respondents have moderate to low perceptions of the effects of public and private institutions. These results show that the policies and support of the government and private companies encourage participants to use the account. On the other hand, the weak role of civil society organizations, media, and advertising in encouraging participants to use Fast-Pay.

Determinants related to Fast-Pay security and guarantee: The overall mean of these determinants is (3.79), and their standard deviation is (1.12), with the consistency rate (75.8%) reflecting a good degree of trust among Fast-Pay account users regarding the security aspects of the account. As a whole, the results indicate that Fast-Pay security and guarantees play an important role in using this account by people, and this is evidence that reinforcing awareness by protecting digital transactions from hacking is essential.

Determinants related to financial culture:
These determinants have an overall mean of (3.74) and a standard deviation of (0.98) with an overall consistency rate of (74.8%), indicating a moderate to good awareness among Fast-Pay participants. These results suggest that people with a good level of financial culture are more willing to use digital financial applications efficiently, including Fast-Pay accounts.

4.6 Factor analysis: Factor analysis is a statistical method used to analyze a correlation matrix, or common difference matrix to obtain more accurate results, since a large number of data (variables) are reduced to a smaller number through relationships between common variables behind this relationship (Sous et al., 2020: 316-358). In light of the study's attempt to identify the most prominent factors affecting the demand for electronic money (Fast-Pay), exploratory factor analysis was used. This analysis aims to identify the most important factors (determinants) that form the basis for explaining individuals' behaviour towards the use of the money by interpreting the relevant variables within the themes. The factor analysis in this paper relied on several statistical measures, most notably the KMO and Bartlett's Test.

KMO and Bartlett's Test: Kaiser-Meyer-Olkin (KMO) is a statistical measure used in analysis to determine whether the data are suitable for the analysis. The value of the index ranges from 0 to 1 (Kaiser, 1974: 31-36). Bartlett's Test is a test used in analysis to test whether samples have equal variances. Bartlett's test can be used to verify that hypothesis (Bartlett, 1951:

337-344). As presented in Table (4.6), the test value of KMO for the adequacy and sufficiency of the sample has reached (0.901), which is a very high value and indicates the suitability of the data for analysis. The (Bartlett) test also showed high statistical significance ($\chi 2 = 2416.698$), df = 36, (Sig. = 0.000), confirming that the correlation matrix is not an identity matrix and that the variables are sufficiently correlated to conduct analysis. Thus, the data are highly suitable for extracting the underlying latent factors behind the nine determinants of demand for electronic money (Fast-Pay).

Table 4.6: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin (KMO)		.901
Bartlett's Test	Approx. Chi-Square	2416.698
	df	36
	Sig.	.000

Source: Researcher's work based on the results of statistical analysis.

Table of communities: Commonalities are the sum of variable contributions for different factors that can be extracted from a factor matrix since a variable contributes different amounts to each factor, whether its contributions are fundamental or not statistically significant (Sous et al., 2020: 316-358). Table (4.7) explains the extent of shared variance for each variable with the entire variables, after extracting the factors. All values after Extraction exceeded the acceptable limit of (0.5), except for the "General Determinants derived from normal demand" (0.564), which approached the minimum acceptable extent. The highest values were for determinants related to the security and guarantee of Fast-Pay, which is (0.820), and determinants related to Fast-Pay usage, which is (0.801), indicating that these variables contribute significantly to the interpretation of the factor basis of the determinants.

Table 4.7: Communalities amount

determinants	Initial	Extraction
General determinants derived from normal demand	1.000	.564
Determinants related to the electronic infrastructure available	1.000	.725
Determinants related to Fast-Pay's advantages	1.000	.774
Determinants related to Fast-Pay usage	1.000	.801
Determinants related to Fast-Pay's economic efficiency	1.000	.794
Determinants related to social influence (recommendations from others)	1.000	.698
Determinants related to institutional influence (public and private)	1.000	.769
Determinants related to Fast-Pay's security and guarantee	1.000	.820
Determinants related to financial culture	1.000	.750
Extraction Method: Principal Component Analysis.		

Source: Researcher's work based on the results of statistical analyses

Total variance explained: Total variance explained (TVE) is a statistical measure that indicates the proportion of total data variance accounted for by factors identified in factor analysis; this variance reflects the extent to which of those factors can explain the observed variance in the data. In this regard, Table (4.8) shows that only two factors have eigenvalues greater than (1). The first factor explained (59.639%) of the total variance, while the second factor explained (14.757%). Overall, the two factors together explained (74.396%) of the total variance, which is a very high percentage, indicating good sample quality. Figure (4.1) shows the results of the interpreted total variance, where a "clear break" appears in the second component (Component 2), known as the "Elbow". This supports the decision to retain only two factors, as the

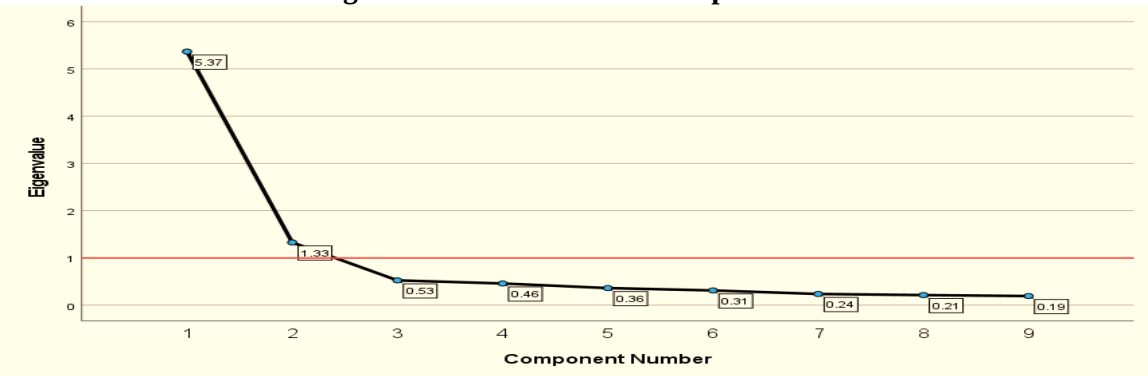
others contribute very little and do not add a spiritual interpretation to the variance.

Table 4.8: Total variance interpretation

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.368	59.639	59.639
2	1.328	14.757	74.396
3	0.525	5.836	80.232
4	0.460	5.108	85.340
5	0.362	4.024	89.364
6	0.312	3.467	92.832
7	0.238	2.640	95.471
8	0.214	2.376	97.848
9	0.194	2.152	100.000
Extraction Method: Principal Component Analysis			

Source: Researcher's work based on the results of statistical analysis.

Figure 4.1: Main extracted components



Source: Researcher's work based on the results of statistical analysis.

Table of components matrix after rotation (Rotated Component Matrix):

One of the concepts associated with factor analysis is the concept of rotation, which aims to achieve the simple structure of the scale. Rotation helps in interpreting factors logically. For this, the (Varimax) method was used to rotate the factors; this method reduces the number of variables with high saturation on each factor. It is the most popular orthogonal rotation method and is often used in conjunction with the principal component's method. It aims to obtain a factor structure in which each variable is highly saturated on one factor and has zero or near-zero saturation on the other factors (Al-Tarawneh, 2019: 147-169), as shown in Table (4.9). The analysis led to a separation of variables for two clear factors:

- The first set of factors is related to the institutional and cultural aspects, which includes determinants related to Fast-Pay's security and guarantee, determinants related to institutional influence (public and private), determinants related to financial culture, determinants related to social influence (recommendations from others), and general determinants derived from normal demand.
- The second set of factors is related to the technical and economic aspects, which contain determinants related to Fast-Pay's economic efficiency, determinants associated with Fast-Pay, determinants related to the electronic infrastructure available, and determinants related to Fast-Pay's advantages

Table 4.9: Principal component matrix after rotation

Determinants	Component	
	1	2
Determinants related to Fast-Pay's security and guarantee	.870	
Determinants related to institutional influence (public and private)	.861	
Determinants related to financial culture	.834	
Determinants related to social influence (recommendations from others)	.724	
General determinants derived from normal demand	.600	
Determinants related to Fast-Pay's economic efficiency		.850
Determinants related to Fast-Pay usage		.842
Determinants related to the electronic infrastructure available		.830
Determinants related to Fast-Pay's advantages		.826

Source: Researcher's work based on the results of statistical analysis.

Conclusion:

1. The majority of Fast-Pay users are young, especially those under the age of 40, which is consistent with societal realities, preconceptions, and previous studies, as this age group is better able to get used to using this type of payment instrument.
2. Most of the users of Fast-Pay have diplomas and bachelor's degrees; these are the groups that can use such money.
3. Most Fast-Pay users are middle-income users, which is consistent with the limited use of this money, whether due to the short duration of its generation date or the limited storage amount required for the account.
4. The vast majority of Fast-Pay users are employed, mostly in the private sector, reflecting the compatibility of the working environment with electronic payment methods.
5. Most users of Fast-Pay accounts believe that the account plays a good role in facilitating their business. At the same time, they believe that the account faces a number of problems and obstacles, such as specific purposes of use, high usage fees, and limited acceptance among the public.
6. According to the mean, standard deviation, consistency rate, the role and importance of all the received determinants of demand for electronic money (Fast-Pay) have been confirmed, and according to the ranking of the determinants are as follows; determinants related to fast-pay usage, determinants related to the electronic infrastructure available, determinants related to fast-pay's advantages, general determinants derived from normal demand, determinants related to fast-pay's economic efficiency, determinants related to fast-pay's security and guarantee, determinants related to financial culture, determinants related to social influence (recommendations from others), determinants related to institutional influence (public and private)
7. Concerning factor analyses, according to the KMO coefficient, the adequacy of the sample has been proven, and according to the Bartlett test the data have been confirmed to be very suitable for identifying the underlying hidden factors behind the nine determinants of demand for fast-pay
8. According to the rotated component matrix and using the varimax method, the determinants of Fast-Pay demand were separated into two main factors. The first set of factors is related to the institutional and

cultural aspects, while the second set of factors is associated with the technical and economic aspects.

Recommendation

1. Work through the media and advertising to increase public awareness about the advantages of e-money and to increase the spread of the account among users.
2. It is better for educational institutions in Kurdistan to pay attention to the development and dissemination of financial culture among the people, which is considered one of the main determinants of the use of money.
3. It is very important for companies designing e-payment programs to consider building a customized design to increase participation and demand for the program.
4. Fast-Pay account users should be encouraged to load more money into their accounts as an alternative to ordinary handheld wallets to prevent loss and theft.
5. It is necessary for Fast-Pay to work to make its e-money available in an easy, simple, and economical way so that all citizens can use it regardless of age, education, and income.
6. Fast-Pay Foundation is supposed to make serious efforts to install deposit and emptying machines everywhere to further expand the use of electronic money by people.
7. It is a current need for the KRG institutions to work to develop the electronic infrastructure of the Internet, which is considered one of the reasons for the increased use of electronic money in Kurdistan.
8. It is considered necessary for the government to try to force businesses to use electronic money readers to facilitate the use of such money among the public to purchase goods and services.
9. Government agencies should strive to enact laws and regulations to protect the rights of users of electronic money and protect their accounts from hacking and the risk of theft and disappearance to further encourage citizens to use the money.

References

1.Akbar, Puspa Nada Aliyah and Rachmawati, Rima (2023), Analysis of factors that influence the use of electronic money in Indonesia. International Journal of Science and Society, Vol. 5, No. 5, pp 439-459.

2.Alfanzi, Lizar and Daulay, Muhammad Yasser Iqbal (2021), Factors affecting the use of e-money in millennial generation: Research model UTAUT 2, Jurnal Manajemen dan Pemasaran Jasa, Vol. 14, No.1, pp.109-122.

3.Alkubaisi, Laith Mohammed Sadiq Farhan (2022), Legal regulation of electronic wallet, Tikrit University Journal for Rights, Vol. 7, No.1, pp. 361-394 (Arabic).

4.Al-Laham, Mohamad, Al-Tarawneh, Haroon, and Abdallat, Najwan (2009), Development of Electronic Impact on the Central Bank Role and Monetary Policy, Issues in Informing Science and Information Technology, Vol. 6, pp. 339-349.

5.Almomani, Mohammad Ameen (2022), Electronic Check: Concept and Importance, Algerian Business Law Journal, Vol. 1, No.1, pp. 128-143 (Arabic).
6.Al-Tarawneh, Sabri Hasan (2019), The Effect of Methods of Orthogonal Rotation and Sample Size in Factor Analysis on the Number of Factors and the Proportion of Explained Variance, Al-Azhar Journal of Education, Vol. 38, No. 181 (3), pp. 147-169.
7.Aryal, Sabina (2021), Factors affecting consumers' perception on electronic payment systems. The Lumbini Journal of Business and Economics, Vol. 9, No. (1/2), pp.86-99.
8.Azmana, Hartini, Yia, Tan Zi, Bakria, Mohammed Hariri (2020). The Factors Affecting Consumer Intention to Utilize the Electronic Payment System in Malaysia, Journal of Technology Management and Technopreneurship, No. 8, pp 129-138.
9.Bartlett, Maurice S (1951), The Effect of Standardization on a $\chi\chi 2$ Approximation in Factor Analysis, Biometrika, Vol. 38, No. 3/4,337-344.
10. Cariaga, Rujonel F., Arcadio, Redjie D., Medio, Gerwine J., Almendras, Ramelito C., Bendanillo, Alan A., and Fabillar, Jan Rey G. (2023). E-money and the Reasons Why Young Consumers Prefer This Technology. Journal of Ongoing Educational Research, Vol. 1, No. 1, 22-28.
11. Dewi, Widya Paramita, Jayawarsa, A.A. Ketut and Purnami, A.A. Sri (2021), *Factors affecting interest in the use of electronic money in OVO applications*, Journal of Tourism Economics and Policy, Vol. 1, No. 3, pp. 102-106.
12. Fast-Pay (2025), About Fast-Pay, https://www.fast-pay.iq/.
13. Handoyo, Sigit, Mardlotillah, Insani Putri, Utami, Endah, Hardinto, Wirawan and Armono, Drajat (2024), Factors Affecting the Use of E-money of University Students in Indonesia, International Journal of Economics, Business and Management Research, Vol. 8, No. 7, pp.314-329.
14. Hofstrand, D. (2019), Demand (File C5-204), Ag Decision Maker, Iowa State University Extension and Outreach, https://www.extension.iastate.edu/agdm.
15. Indrawana, Muhammad Reiza, Livingstone, Daniel, Kartonoc, Rano, Sundjajad, Arta Moro (2021), Factors Affecting Millennials' Acceptance of E-Money Application in Jakarta, Turkish Journal of Computer and Mathematics Education Vol. 12, No.3, pp. 4146-4156.
16. Jaberi, M. Saleh (2009), A Review of electronic checks: Essence and aspects, Tehran, Iran.
17. Kholilah, N. Al, & Iramani, R. (2013), Studi Financial Management Behavior Pada Masyarakat Surabaya. Journal of Business and Banking, Vol. 3, No.1, pp 69-80.
18. Kaiser, Henry F. (1974), An Index of Factorial Simplicity, Psychometrika, Vol. 39, No.1, pp 31-36.
19. Liao, C.-F., & Chen, C.-D. (2020). Financial Literacy and Mobile Payment Behaviors. Journal of Accounting and Finance, Vol. 20, No.7, pp. 126-138.
20. Lukito, I. (2017), Tantangan Hukum dan Peran Pemerintah dalam Pembangunan E-Commerce (Legal Challenges and Government's Role in E-Commerce Development), Pusat Pengkajian dan Pengembangan Kebijakan Badan Penelitian dan Pengembangan Hukum dan HAM Kementerian Hukum dan HAM R.I., Vol. 11, No.3, pp. 349-367.
21. Mahendra, Opi Chanty, Sugianto and Nst, Yenni Samri Juliati (2022), Determinants of the use of electronic money (e-money) among Muslim professionals in Medan City, BIRCI-Journal, pp.14341-14350. https://doi.org/10.33258/birci.v5i2.5301.
22. Oktavianty, Agit, Alamsyah and Ramadhani, Salsabila Eka (2023), Concept of Money Demand and Supply and Its Importance on Economic Activities, INNOVATIVE: Journal of Social Science Research, Vol. 3, No. 2, 8357-8366.
23. Popovska-Kamnar, Neda (2014), The use of electronic money and its impact on monetary policy, Journal of Contemporary Economic and Business Issues, Ss. Cyril Land Methodius University in Skopje, Faculty of Economics, Skopje, 1, No. 2, pp. 79-92.

24. Puteri, Hesi Eka, Arinda, Niyara, Mulyana, Cahya A., Puspita, Deni O., and Husna, Vira A. (2022), Examining the determinants of using e-money prepaid software. European Journal of Business and Management Research, Vol. 7, No.2, pp.183-189.
25. Putra, Pratama, Jayadi, Riyanto, and Steven, Ignatius (2021), *The Impact of Quality and Price on the Loyalty of Electronic Money Users: Empirical Evidence from Indonesia*, Economics and Business, Vol. 8, No. 3, pp. 1349-1359.
26. Qu, Bo, Wei, Li and Zhang, Yujia (2022), Factors affecting consumer acceptance of electronic cash in China: an empirical study, Financial Innovation, Vol. 8, No. 9, 1-19.
27. Rahayu, Sri, Rahmatia, Rahmatia, Hamrullah, Hamrullah and Andi, Arya Setiawan Junior (2023). The Demand of E-Money as a Source of Financial Growth, Hasanuddin Review on Sustainable Development, Vol. 1, No. 2, pp. 1-19.
28. Sasongko, Danarto Tri, Handayani, Putu Wuri and Satria, Riri (2022), Analysis of factors affecting continuance use intention of the electronic money application in Indonesia. Procedia Computer Science, No. 197, pp.42-50. https://doi.org/10.1016/j.procs.2021.12.116
29. Sinambela, Ella Anastasya and Darmawan, Didit (2022), Strengths and Weaknesses of Using Electronic Money as a Substitute for Cash. Journal of Social Science Studies Vol. 2, No. 2, pp 56-61.
30. Sous, Nasuh, Ghadir, Malak, and Omar, Aghd (2020), *The role of factor analysis in specifying the important factors affecting the quality of health services offered to patients in the Private Hospitals in Nablus Governorate from the perspective of patients*, Al-Istiqlal University Research Journal, Vol. 5, No. 1, pp. 316-358 (Arabic).
31. Suryaningsih, Herman, Bahtiar and Saleh, Wahyuni (2022), *Analysis of the Factors that Influence the Interest in Using E-Money on the Linkaja Application During the Covid 19 Pandemic (Case Study at the Business Unit of the University of Muhammadiyah Sidenreng Rappang)*, Jurnal Penelitian Ilmu Manajemen (JPIM), Vol. 7, No. 3, pp 375-384.
32. Tavakol, Mohsen and Dennick, Reg (2011), Making sense of Cronbach's alpha, International Journal of Medical Education, No. 2, pp 53-55.
33. Teo, Wendy Ming-Yen, Chong, Siong Choy, Binshan, and Chua, Jiat Wei Chua (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis, Internet Research, Vol. 23, No. 4, pp. 465 - 485.
34. Viviana, Novita and Mulyono, Kemal Budi (2021) Determinants of students' e-money intention. Advances in Economics, Business and Management Research, Vol. 204, pp.315.
35. Widiyati, Dian and Hasanah, Neneng (2020), Factors affecting the use of e-money: Study on e-money users in the city of South Tangerang, Journal Accountability, Vol. 9, No. 1, pp.36-45. https://doi.org/10.32400/ja.28881.9.1.2020.36-45.
36. Yogi, Komang Linggar and Pramudana, Komang Agus Satria (2021), The Effect of Ease of Transactions, Price and Perceived Usefulness on Customer Satisfaction for Gopay's Feature in Gojek Application, American Journal of Humanities and Social Sciences Research (AJHSSR), Vol. 5, No.5, pp. 44-52.