

Palm Payment System: Islamic Finance Perspective

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Abstract

Cashless payments have become an increasingly popular trend in recent years. Cashless payment methods can include the use of credit/debit cards, mobile banking apps, digital wallets, payments via smartphones, or even biometric technologies such as fingerprint scanners or facial recognition. Palm Payment System incorporates fingerprint biometrics in the palm of the hand to facilitate payments, making it safer and more reliable as long as we have a balance, internet network and hands. Descriptive qualitative research methods are research approaches used to describe certain phenomena or events by understanding and describing in depth the characteristics, context, and complexity of the phenomenon. The use of Palm Payment System is in accordance with Islamic finance principles that uphold transparency, honesty, and fairness in business. However, it needs to be improved in supporting infrastructure, the level of community adoption and adaptation. Security and privacy should not be leaked. Accessibility for people with physical disabilities who cannot use palm payment. Minimize technical obstacles due to environmental factors such as extreme temperatures or poor light because it can affect authentication. The latter is affordable in implementation

Keywords: *Biometrics; Palm Payment System; Islamic Finance*

A. Introduction

Since humans are familiar with the system of exchanging goods (barter), humans have never stopped innovating transaction products to make life easier for themselves. In the past, barter, which was considered effective over time, was gradually abandoned and replaced with coins and paper currency. This development continues to this day to give rise to various models of financial transactions, such as banking developments, the introduction of credit cards, internet and e-commerce developments, digital payments, blockchain, and cryptocurrency, as well as security and biometrics (Utami, 2023).

Biometrics is a technology used to identify, verify, and authenticate individuals based on their unique biological or behavioral characteristics (Giovanni et al., 2023) This technology uses physical or behavioral features that are unique to each individual as a method of recognition and security. Some examples of biometric features include fingerprints, faces, irises, palms, ear shapes, voices, or handwriting patterns. Biometrics

are used in a variety of applications, including physical security (such as access to buildings or computers), payments and banking, data security, identity management, and more. Biometric technology has brought a higher level of security to various aspects of daily life and is used as a solution to circumvent the weaknesses of traditional security methods such as passwords or PINs (Hartono et al., 2022).

To this day, biometrics are considered the most secure due to fingerprints, faces, or irises, which are difficult for others to fake or access. Fingerprints or faces do not require memorizing passwords or carrying physical cards, reducing the risk of forgetting passwords or losing cards. Each individual has unique and different fingerprints from others. No two people have exactly the same fingerprints, not even twins. In addition, a person's fingerprints remain consistent throughout their life, unless they experience certain injuries or medical conditions. be the original image, thereby protecting user privacy (Aripin et al., 2022).

The Palm Payment System tries to combine fingerprint biometrics in the palm of the hand to make payments easier, making it safer and more reliable as long as we have a balance, internet network, and hands. Biometric templates are stored in an encrypted and secure system. Biometric data is usually not stored in a form that can be changed or reversed.(Vankamamidi, 2021)

B. Literature Review

Hand or Palm print recognition systems are one of the efficient people recognition and authentication systems that provide high-security levels by approving the entering and exiting of people such as employees in the work field or companies. The basis for using palmprints lies in the fact that no two individuals have exactly the same palmprint pattern, moreover palmprints remain more or less stable throughout the lifetime and are easily obtainable using standard imaging techniques. Palm print recognition systems process picture data from a photograph of a person's palm and compare it to a record for that person using a scanning device or camera-based application. There are numerous ways to obtain a palmprint image, including digital scanners (Al-Taie & Khaleel, 2023).

The Palm payment system is a mobile wallet and financial services platform that allows users to perform various financial transactions using their mobile phones. It operates in several African countries, providing services such as money transfers, bill payments, airtime top-ups, and other financial services. Users can link their bank accounts or debit/credit cards to the Palm app to facilitate transactions. The platform aims to provide accessible financial services to individuals who may not have easy access to traditional banking services.

Palm Payment often offers incentives, discounts, and rewards to encourage the use of their platform for transactions. It has collaborated with various merchants and businesses to facilitate payments for goods and services.

C. Research Methods

The method we use is the descriptive-qualitative research method. A descriptive qualitative research method is a research approach used to describe certain phenomena or events by understanding and describing in depth the characteristics, context, and complexity of the phenomenon (Fadli, 2021; Utama, 2020), without statistical procedures (Utama et al., 2018). The purpose of this descriptive qualitative research is to provide a comprehensive and in-depth picture of the palm payment system when studied from the perspective of Islamic finance so that researchers can understand how it happened, how the context influences this phenomenon, and what would happen if this system were actually implemented in Indonesia.

D. Result and Discussion

1. Palm Payment System

Cashless payments, or, as they are often called, cashless payments, have become an increasingly popular trend in recent years. This concept involves the use of digital or electronic payment instruments to make transactions, replacing the use of physical cash. Cashless payment methods can include the use of credit or debit cards, mobile banking apps, digital wallets, smartphone payments, or even biometric technology such as fingerprint scanners or facial recognition. Payment with a cashless system was

chosen because it speeds up the transaction process, reduces queues, and optimizes time for daily activities (Rahadi et al., 2021).

Customer satisfaction will also increase because it eliminates the need to carry physical cash, so that users can easily make transactions in various places and whenever needed. The state also benefits by reducing the costs associated with printing, distributing and managing physical money (Hartatik et al., 2021). One of the newest technologies regarding cashless transactions is the Palm Payment System.

The Palm Payment System is an innovative payment system that uses palm vein recognition technology to identify users and facilitate contactless payment processes. This system takes advantage of the unique pattern of blood vessels in the palm of each individual's hand to identify the owner, so that it can be used as a safe and efficient way of making transactions.(Vankamamidi, 2021)

This technology was first developed by Amazon.com, which a year later was adopted by Tencent, a developer company from WeChat in China. The use of palm recognition technology allows the Palm Payment System to overcome some of the problems often encountered in traditional payment systems, such as credit or debit cards that can be lost or stolen, PIN security that is vulnerable to hacking, or time and manpower limitations to enter a PIN code or token. hand in every transaction.

The Palm Payment System works in a simple but effective way. The first time, the user has to register his palm in the system by taking an infrared image of the pattern of veins in the palm. This data is then encrypted and stored securely in the system database. When a user wants to make a payment, he simply places his palm on the reader or device that supports this technology.

The reader scans the vein pattern on your palm and compares it with the data already stored in the system. If they match, the transaction is authorized, and the payment is successful without the need for a physical card, PIN, or signature.(Marlina et al., 2020).

Some of the advantages of the Palm Payment System that are not available in other cashless payment models are:

1. High Security: Palm recognition technology generates biometric data that is unique and difficult to fake, thus providing a higher level of security compared to traditional identification methods.
2. Ease of Use: No need to carry physical cards or remember PINs; just place your palm on the reader to make payments.
3. Efficiency: The payment process becomes faster and more efficient because there is no need to enter PINs or sign papers anymore.
4. Freedom from Physical: The use of non-contact technology avoids the risk of physical card wear or damage
5. Privacy and security: The biometric data collected only focuses on blood vessel patterns, so that the user's identity remains safe and privacy is maintained

However, as with other biometric technologies, concerns regarding data privacy and security remain a concern. Users should ensure that the system has a good privacy policy and is able to properly protect their biometric data (Dhany, 2020)

The Palm Payment System can be used in a variety of scenarios, such as payments in physical stores, access to restricted areas, or even as a substitute for a smart card on public transportation. With the continued development of this technology, the Palm Payment System has the potential to become an attractive and reliable alternative to future payment systems.(Rafferty & Fajar, 2022)

2. Islamic Financial System

The Islamic financial system is a financial framework that is based on Islamic Sharia principles. The main principle in the Islamic financial system is the prohibition of usury (interest), gharar (excessive uncertainty), maysir (gambling), and investment in business sectors that are considered unethical or contrary to the teachings of Islam (Zuchroh, 2022). The Islamic financial system aims to create equity, fairness, and transparency in various financial transactions and encourage ethical economic activities (Husna et al., 2022)

The Islamic financial system refers to the Qur'an and al-Hadith regarding the prohibition of consuming other people's assets in a vanity way (QS.an Nisa: 29). Some of the main features of the Islamic financial system include:

1. Prohibition of Riba: Riba, or interest, is considered a form of oppression and exploitation that harms the less fortunate. In the Islamic financial system, profits generated from financial transactions must come from real and productive business activities (Fariana & Safii, 2018)
2. Profit Sharing Principle: The Islamic financial system encourages profit sharing or profit and loss sharing in various transactions. This means that the parties involved in an investment or project share profits or losses according to a prior agreement (Ahyani et al., 2020)
3. Sharia Akads and Contracts: Every financial transaction in the Islamic financial system must be based on an akad or contract that conforms to Shariah principles. Examples of commonly used contracts are mudarabah (joint venture), musharakah (partnership), murabaha (sale and purchase with disclosed profits), and ijarah (lease) (Ahyani, 2021)
4. Prohibition of Gharar and Maysir: Gharar is a prohibition against excessive uncertainty in transactions, while Maysir is a prohibition against the harmful practice of gambling and games of chance (Fikriawan, 2019)
5. Avoidance of Haram Investments: The Islamic financial system prohibits investment in sectors that are considered haram, such as the alcohol, gambling, pornography, or usury industries (Aini, 2019)
6. Zakat and Sadaqah: The Islamic financial system encourages the practice of zakat (compulsory donations to deserving people) and sadaqah (voluntary donations) as a way of fighting poverty and helping people in need (Safitri, 2018)

3. Palm Payment System: Islamic Financial Perspective

The payment and financial system at the time of Rasulullah Muhammad SAW (7th century AD) was different from the modern financial system that we know today. Before the advent of the modern currency system, the Arabs used the dinar (gold) and dirham (silver) as a means of payment and a measure of exchange rates. Dinars and dirhams have been used in the Middle East for centuries, before Islam. During the caliphate of Umar, around 634 AD, a more standardized currency system was

introduced to facilitate trade and economic activity in the growing Islamic region. Previously, dinars and dirhams had been used as currency by the Romans and other nations in the Middle East and beyond. When Islam began to develop, the gold dinar coin was adopted as legal currency in the Islamic economic system. Meanwhile, silver coins were used by nations in the Middle East and surrounding areas before Islam (Shifa et al., 2022).

Dinars and dirhams adopted by Islam have a weight and gold content specifically determined according to sharia rules. The standard Islamic dinar known at that time was the Umar dinar, which is considered the model standard for Islamic gold coins (Susanti, 2018). The use of the dinar as Islamic currency was then continued by the caliphs that came after, including the Abbasid and Umayyad caliphs. The dinar has been one of the most influential currencies in trade and economic activity in the Islamic world for centuries, and forms of Islamic dinar have also been produced by various Islamic countries in the following period (Abdullah, 2020).

The financial system in the era of Rasulullah SAW was simple and very different from the complex modern financial system. However, the Islamic principles and values taught at that time continue to form the foundation for the Islamic financial system used by many Muslim countries and communities to this day (Maharani & Hidayat, 2020).

The Palm Payment System is a form of technological development that should be appreciated because it makes it easier to carry out buying and selling transactions in the community, as long as there is a balance and an internet network. Several weaknesses in other types of cashless payments can all be overcome by Palm Payment, so worries about lost money, lost cards, or forgotten pins will never happen again as long as we still have our hands. The Palm Payment System is in accordance with Islamic financial principles, which uphold the importance of transparency, honesty, and fairness in business transactions (Husna et al., 2022).

The Palm Payment System is a real form of application from QS. Yasin: 65. *This day We seal up their mouths, and their hands speak out to Us and their feet bear witness as to what they used to earn.* This verse teaches us that all members of the body will testify before Allah SWT. There is no more time to lie, no more time to dodge, and no more

opportunities to make excuses. Everything will give testimony as it is. Good footsteps will provide good testimony. Hands, when used to do good, will also provide good testimony in the afterlife. The point is that habits in this world will be shown later in the afterlife. Apparently there is no need to wait in the afterlife; even in this world, our hands can testify with fingerprints (Niza, 2023).

However, as far as we can see, there are a number of things that should be considered in the development of this technology so that it complies with the principles of Islamic finance, namely:

First, if this technology is applied in Indonesia, the use of palm recognition technology requires a more advanced and compatible infrastructure to function effectively. If there are not many devices that support this technology, public adoption could be hampered. Smartphone users and Internet networks in Indonesia have indeed grown rapidly, but this development has not been evenly distributed, only focusing on the island of Java and a few cities outside Java, not all over the country (*Penetrasi Internet Di Indonesia Belum Merata Sampai 2022*, n.d.). **Second**, although palm recognition technology has a high level of security, there are always security and privacy risks associated with user biometric data. The storage and protection of biometric data must be strictly guaranteed to avoid misuse or leakage. This leak not only harms the account owner but also the shop where the business is located, because everything related to internet technology is never completely safe from hacker attacks (Goloshchapov-Aksenov et al., 2020). **Third**, the Palm Payment System may not be fully compatible with all devices and platforms, thereby limiting flexibility of use in various situations. So it is not only the people who are required to update, but all supporting devices must also be updated (Rafferty & Fajar, 2022)

Fourth, some people may have certain physical or medical conditions, such as disabilities, that make it difficult or impossible for them to use palm recognition technology and therefore cannot access this payment system. Making the Palm Payment System will never be the only means of payment, but only an option. **Fifth**, payment systems that rely on biometric technology, such as palm recognition, must pay attention to environmental sensitivity issues. Some environmental conditions,

such as extreme temperatures or poor light, can cause authentication and payment errors. Sixth, the initial development, testing, and implementation of advanced payment systems such as this can involve significant costs for service providers and businesses (*Kementerian Komunikasi Dan Informatika, n.d.*)

E. Conclusion

The use of the palm payment system is in accordance with Islamic financial principles, which uphold transparency, honesty, and fairness in business. So that the potential for consuming other people's wealth through vanity can be carried out as a Muslim's obligation. However, in its implementation, it is necessary to pay attention so that this payment process brings more benefits to the people. The Palm Payment System is an example of technological progress in the financial sector that cannot be avoided.

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