

REVIEW OF ISLAMIC LAW AGAINST MULTI-CONTRACT ON ELECTRONIC MONEY IN LINKAJA APPLICATION

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ABSTRACT

The purpose of this study is to find out how contracts are applied to the use of the LinkAja application and to find out how Islamic law reviews multi-contracts in the LinkAja application. This research is a Qualitative research related to the descriptive nature of analysis in order to understand social phenomena more deeply. The data used in this study are primary and secondary data. The data collected is data related to the topic or theory under study. Data collection techniques are used, namely interviews and also literature studies. Meanwhile, the data analysis technique carried out is triangulation where interviews, document studies, and conclusions are drawn. Based on the tests carried out, the results were obtained that the contracts collected when transacting using the Linkaja application, there were several contracts, namely, the Wadiah contract, the Qardh contract, the Ijarah contract, and finally the Jualah contract. In Islamic Law Multi Akad dPada Application Linkaja the application of the contract is allowed because the pillars and conditions have been fulfilled in accordance with sharia. A mixture of some contracts that are classified as multi-contract categories al- uqud al- mujtamiah when two or one contracts are combined into one contract. Some of the opinions of Maliki scholars, Hanafiyah scholars, Shafiiyah clerics and Hambali clerics say that multi-contracts are valid and permissible under Islamic law. From the point of view of maqashid sharia, multi-contracts inferred based on ijma' akad are valid if they do not violate the rules that have been established by Islamic law.

Keywords: *Linkaja Application, Electronic Money, Multi Contract, Islamic Law.*

INTRODUCTION

Islamic jurists define contract as a relationship between consent and qabul which is justified by syara' which creates a legal effect on the object. In Islamic law, the contract is synonymous with an agreement between two mutually agreed parties. The above understanding shows an action that is mutually beneficial to each other which is carried out on a voluntary basis and creates a legal effect on the object. Efendi, S. (2008)

Based on the understanding of the contract above, there are many kinds of contracts. one of them is multi contract. In muamalah fiqh, this multi-contract is considered permissible, based on the general rule that the original law in the field of muamalah is lawful, unless there is an argument that changes the original law. Even though the multi-contract law specifically prohibits hadiths, there are exceptions to the multi-contract model which are specifically prohibited in the hadith of the Prophet Muhammad, namely: 1. combining a sale and purchase contract with the salaf, 2. buying and selling inah. 3. buying and selling with two prices. Harun, H. (2018)

Nowadays, digital technology is growing more sophisticated year by year(Taplin, 2022). With the rapid development of technology, people's lifestyles have changed from traditional to millennial (Lei et al., 2023). Technological advances and innovations to telecommunications not only limit the world and cause significant social changes very quickly, but also bring many conveniences and new ways of life to society especially in the world of the technology sector, companies (Lei et al., 2023). Over the past decade, humans have used technology to enable people to do things easily, quickly, efficiently, and with time. The increase in the number of internet users has also changed people's behavior in financial transactions, the impact of the rise of the internet is increasingly felt by users who are inseparable from the web world, such as the web, advertisers, YouTubers, bloggers, Celebgrams, and Selebtiktok. Until now, the web or the Internet has had the option to create new fields of business, for example online business or internet shopping, which are increasingly found according to buyers who are looking for certain items. For online transactions to run smoothly, the payment system needs to be efficient, measurable through the ability to bear minimal costs, so that we can reap the benefits of transactional activities because transactional activities are important in the business cycle, this action is an installment method used as a means of installments(Kumar et al., 2020; Qurrata et al., 2020).

now online buying and selling activities are increasingly popular among the public encouraging various types of online site sales and creating new innovations in online buying and selling payment methods. Not only that, now you can even pay for electricity, household needs, buy credit, donate, and you can use e-money. one example is the Linkaja application. Financial facilities used in e-commerce have become a trend among millennials. Febriandika, N.R., Syaifuddin, A., & Ma'ruf, A. (2022)

Transaction settlement is now very necessary in the fiqh science system, with the development of transaction system technology, the trading system has also undergone changes due to advances in muamalah where changes in installment instruments can react quickly, precisely and safely to changes in installment techniques for each electronic exchange. Non-cash installment framework instruments used as card installment techniques, such as bilyet giro, checks, bills, and electronic money. Electronic

money (e-wallet) is a cashless payment instrument technique for small-value financial transactions (Nordin et al., 2021; Sugu & Hussain, 2021). The usability capacity of electronic money is not much different from the capacity of cash, there are many e-money application models circulating in the community in the form of chip-based cards, such as Top Money BNI, Brizzi BRI, Flazz BCA, and Automated Cash. There are several types of e-wallet trading products that make individuals interested in using electronic wallets (e-wallets), one of which is the application server considering electronic wallet applications (e-wallets). The models are GOPAY, OVO, and DANA, one of which is LinkAja.

LinkAja is a publicly owned digital wallet (BUMN), the only government-owned digital wallet, LinkAja has privileges. The services provided by LinkAja are integrated with the Services of State-Owned Enterprises (BUMN). Various services provided by LinkAja can increase user awareness of the benefits of the LinkAja application. In addition, LinkAja also provides special services that other e-wallets do not have. Linkaja application is actually using a traditional framework, assuming that the exchange in this application will be converted to sharia according to the DSN MUI after the DSN MUI Fatwa.116/DSN MUI/IX/2017 on sharia e-cash. In the server-based e-cash development permit from Bank Indonesia, which is designed to provide sharia services free of usury, gharar, maysir, tadbis, and israf, and is able to meet the expectations of users who want to transact.

According to the view of Islamic law is also included in the contract or agreement that must be principled with Islamic law, the definition in Islamic law is known as the Contract, a covenant in the language of the bond. In practice, the use of the LinkAja application has several problems in terms of sharia views, in terms of shortcomings, application users cannot use it freely because of purchase restrictions that can only be used by certain marchants, besides that the restriction of privileges does not eliminate the freedom of ownership of personal adjustments if the number registered for exchange is hindered, although the meaning of property rights is the choice to respect and practice full power over property, without neglect of material laws and guidelines, without prejudice to the possibility of an option to be released; public interest, and without infringing the rights of others, The use of law is accompanied by interest in compensation or indemnification. payment.

In transacting using the LinkAja application, there are several contracts, namely the Ijarah contract when the user uses mercant (Merchant) as a provider of goods / services While for the Wadiyah contract after we top up the balance, and Linkaja by making a Qardh contract after the owner of the linkaja to the issuer on the condition that the issuer returns part of the amount received to the owner based on the agreement. In essence, the law of card contracts is a good (permissible) unless there is additional usury for creditors/debtors. Multi-contract in the provisions of Islamic law spreads

many pros and cons in the thinking of scholars, as long as these pros and cons cause the Linkaja application to become an object of research in the world of electronic-based transactions, if applied in the form of contracts contained in the review of Islamic provisions, so that it can be known whether or not part of the agreements contained in the application must be collected into a single unit (Hanif & Zafar, 2020).

From the background description, the author sees the problem from each point of view of the explanation that has been presented, so the formulation of this research problem is determined, namely: 1) How to apply Multi-contract to the use of the LinkAja application; 2) How to apply Multi-contract to Linkaja application in Islamic law review. While the objectives of this study are: 1) To find out how the contract is applied to the use of the LinkAja application; 2) To find out how Islamic law reviews multi-contracts in the LinkAja application.

METHODOLOGY

This research is a Qualitative research with regard to the Descriptive nature of guan analysis so that social phenomena are understood more deeply. The data used in this study are primary and secondary data. Primary data in the form of the Linkaja Application, interviews with Linkaja application users. Meanwhile, secondary data in the form of Islamic Law, Electronic Money Law, Qur'an, Hadith, and materials from the internet and information obtained from parties who are not directly involved. The data collected is data related to the topic or theory under study. Data collection techniques are used, namely interviews and also literature studies. Meanwhile, the data analysis technique carried out is triangulation where interviews, document studies, and conclusions are drawn.

RESULTS AND DISCUSSION

The LinkAja application is recently known as Telkomsel Money or TCASH, which is a follow-up financial assistance from Telkomsel and individuals from State-Owned Enterprises (BUMN) in the form of electronic money (e-cash). The Linkaja application is an electronic payment that on January 21, 2019, PT Fintek Karya Nusantara (Finarya) was founded by Telkomsel together with several State-Owned Enterprises, namely Bank Mandiri, Bank Negara Indonesia, Bank Rakyat Indonesia, Bank Aset Negara, Pertamina, Jiwasraya Protection and General Resources. LinkAja began to skyrocket on February 21, 2019 after Finarya officially received a grant/award from Bank Indonesia as a Useful and Advanced Financial Expert in the Electronic Money Industry for Legitimate Materials, and dominated the TCASH application, Mandiri e-cash, which is Great! (BNI), UniqueQu (BNI), My QR (Bank BRI) and

T-Bank (Bank BRI). LinkAja was officially issued for harmonization on June 30, 2019, Linkaja also has Sharia Administration which is an expansion of the administration that can be accessed in the LinkAja application for individuals who want to run according to sharia standards. LinkAja has a vision to become the country's preferred digital financial platform ("National Champion"), superior and trusted and has a mission to build an ecosystem, payment platform and financial services tailored to the needs of your middle class / aspirant and the needs of MSMEs in Indonesia.



Figure 1. Logo LinkAja

Most digital wallets provide services that make it easier for consumers to pay utility bills, buy credit, pay tuition, e-samsat, eat and drink, taxes, and spend money on other purposes. As a derivative of e-wallets, Linkaja offers various advantages to users who are more interested in using Linkaja. However, as a professional supplier, Linkaja thinks about how to make a profit without losing money. This is in line with the introduction of the Linkaja application as a means to support the growth and development of entrepreneurs in developing their businesses. As a business person also gets additional benefits by collaborating with the Linkaja application, it can be seen that the Linkaja application is not limited. using time and place, a very wide network is easily accessible if the signal or internet is strong, For all transactions made through digital wallets, e-wallet providers can collect fees from operators, Another way to generate income for Linkaja is to top up. The charging system is done by charging additional fees for transactions when we do to up which can also increase Linkaja's income.

Multi Contract on LinkAja Application Islamic Law Perspective

The application of multi-contracts in the Linkaja application explicitly contains double contracts, and the implementation of contracts contains four contracts. There are four contracts in it, which are combined into one, namely the Wadiah contract, the ijarah contract, the qardh contract, and finally the selling contract (Lima et al., 2021). In Linkaja transactions, there is a contract process in Fiqih Muamalah:

- a. At the time of top up, where Linkaja users top up the balance (top up) on the Linkaja application, this kind of process in Fiqih muamalah is also called the wadiah yad al-amanah contract, because the customer's deposit money is deposited into a bank that cooperates with LinkAja without using / investing. In terms of the terms and conditions of wadiah, the implementation of wadiah in the application of online payments has met all the conditions and is in accordance with Shari'a.
- b. Get cashback when users will transact with merchants offered on the application which says "starting from January 1 to 30, get 75% cashback and Voucher Discounts of up to Rp. 100,000 specifically for shopping at Blibli with transactions using Linkaja payments". This describes the existence of a selling contract. This kind of form of contract is allowed in Islam.
- c. Paylater, transactions that occur in the Linkaja application in the form of portions without a bill card with a certain number that can be used for purchases at retail locations that work with the Linkaja application, in the Linkaja application it says "buy now, pay later with linkaja PayLater offers, have a qardh contract process or borrow money without compensation provided that Linkaja users can return money with a predetermined maturity. In terms of support and terms of the qardh contract, the implementation of the qardh contract in credit execution in the Linkaja application has met all the points and supporting conditions, the implementation of the qardh contract on the Linkaja application service as a limit can be used to make transactions on the application. A qardh contract that follows this model, known as factoring, is a financial transaction when a company sells receivables (such as invoices) at a discount and gets cashback, in fiqh this is called buying and selling, where invoices are paid and sales are made using a prepaid payment system. Payments or prices may be lower because purchases and payments can be made in a shorter period of time or Conversely, when the grace period is longer, the price may rise. As for the law, some scholars allow it and some don't.
- d. Cooperation, the linkaja application carries out cooperation between Linkaja merchants and Linkaja companies in the form of cooperation in the form of a payment process carried out by application users to Linkaja merchants, after that the formation of this cooperation, Linkaja arranges so that there is a gift in the form of distributing discounts or cashback to Linkaja users and the existence of these discounts does not make the merchant lose. In this process, there is a selling contract process.
- e. Goods/services transactions, the process of goods/services transactions between Linkaja users/consumers and Linkaja Merchants, this process can be described by Linkaja consumers

buying goods/services sold by Linkaja merchants, which can be in the form of food, drinks, or daily necessities, this process of occurrence is a form of the ijarah contract process.

- f. Linkaja Application Transactions, meaning that Linkaja and Linkaja merchants have stated an agreement to carry out transactions using Linkaja, generally in the shopping payment process at shoppe, lazada tokopedia, Bukalapak asked consumers what method they want to carry out transactions using what method, using Linkaja, funds, indomart, atm, Alfamart etc. When users sort out transactions using Linkaja until this is the existence of an ijarah contract process.

The permissibility of multi-contracts is based on the legal principle of the origin of the contract, and the multi-contract law is a provision that limits the performance of religious obligations compared to the law of the treaty governing it. In the end, as long as there is a limit that must not be violated, it is permissible to enter into several agreements so as not to fall into the customs of Islamic law prohibited by sharia. In Chapter II, it has been explained that there are various multi-contracts. the various kinds of contracts applied in the Linkaja application are al- uqud mujta'miah (collected contracts) which are getting collected in one agreement or at least two agreements joining into one agreement, the application of Linkaja to buy and sell to Linkaja users and at the same time the Linkaja Company provides discounts, cashback and also PayLater to Linkaja users or merchants. an agreement for two things at the same price or again two agreements in an agreement with various valid arrangements regarding articles with one judgment either at the same time or at different times (Casado-Belmonte et al., 2021).

Whereas in muamalah, as a Muslim, you must know the margin offered by muamalah transactions. Linkaja's statement is considered dubious that profits are not clearly stated, Linkaja's application is still doubtful that margins are not clearly explained. However, apart from the margin of the Linkaja Application, it is also necessary to consider how a unit between the Ijarah and Qardh contracts is combined into one. The law prohibits the merger of buying and selling and borrowing due to the vagueness of the price ('illat) and the element of usury. Scholars have stated that while the qardh' contract becomes a core contract and bai itself becomes a complementary contract, then the main intention of the perpetrators of the contract is prohibited. Ijarah may be prohibited if the margin received is not solely from the Qardh contract.

Discussing multi-contract is also explained The four schools explain the concept of multi-contract and, according to fiqh experts, both schools prohibit the existence of double contracts according to their nash. This is in line with what is outlined in the Overview of the Islamic Economy. Law, the scope of the contract according to the Compilation of sharia economic law is only in al-uqud al-mutadddah (a contract made by itself).

Multi-Contract Analysis on Linkaja Application According to Islamic Law

Basically everything is legally allowed by agreement between the parties, voluntary agreement. The multi-contract transaction includes modern contracts, which occurred during prophetic times but did not yet exist and are not described in the books. This is evidenced by a hadith that prohibits the merger of several contracts or one, two or more contracts into one contract that is not in accordance with Islamic law. In modern business transactions, transactions that implement many contracts are very diverse, and most, especially Indonesians, require these transactions. Multi-Akad is based on the views of the scholars of the school and although it is not clearly explained in the specific definition, by understanding the scholars' view of the understanding of hadith, we can understand what is meant by multi aqad as follows:

1. According to malikiyah scholars, Multi akad is a part of a contract that has conflicting laws gathered in one contract and can bring to the practice of usury. The definition presented by the Malikiyyah mahzab is similar to al-uqud al-mujtamiah.
2. According to Hanafiyah scholars, multi-contract is a combination of two or more contracts where one contract is a condition of the other contract, not a condition of the contract, and provides benefits for one of the parties. The definition given by the Hanafiyyah scholars is in line with al'uqud al- mutaqabilah (subordinate contract/conditional contract).
3. According to Syafiiyah scholars, multi-contract is the grouping of several contracts into one contract that complements each other through a reciprocal process and gives rise to jahalah - ltsaman (type of price explanation).
4. According to the cleric Hanabilah, multi-contracts i.e. Several contracts can be accumulated in one contract, leading to usury.

The contracts collected when transacting using the Linkaja application, there are several contracts, namely, the Wadiah contract, the Qardh contract, the Ijarah contract, and finally the Jualah contract. Regarding the implementation of transactions, the context of rewards/cashback is included in the Jualah contract, loan loans (Paylater) in the form of restrictions (limits) used for transactions are included in the Qardh contract, and Linkaja Merchants are included in the ijarah contract, and the deposit balance is included in the Wadiah contract type.

For the provisions of Multi-contracts allowed in jurisprudence assuming they meet the needs of (1) the restrictions of obtaining which are rejected in the texts of the Qur'an and hadith to be consolidated, for example, designing to perform fadhli usury, Ibn Qayyim argued that the Prophet forbade multi-contracting. a contract between a salaf contract and buying and selling, even though both contracts are assuming the law can apply freely. The motivation behind the ban on the meeting

of these two agreements was to try not to fall into usury. All trading contracts are illegal to combine with qardh in one exchange. (2) The incorporated agreements do not include non-consolidable acquisitions (personality agreements) or problematic legal outcomes, for example between rewards and trade. For example, consolidating the contract and the award of buying and selling, for example giving merchandise to someone, then, then renting it out to the provider, joining the mudharabah and qardh contracts, combining the sharf and selling contracts, combining the ijarah and bai' akad (3) contracts does not cause usury.

The original law of the contract is valid and will not be void unless there is evidence to prohibit or reject it, as explained in the compilation of sharia economic law, the scope of Multi akad by KHES is only on al- uqud al- mutaddah, i.e. Multi akad which is built by Akad itself. KHES was clearly impressed by not acknowledging many contracts. In other words, KHES is illegal and prohibits multi-contracts. However, fiqh scholars tend to argue that Islamic law allows for some treaties, whereas the original law on treaties is allowed, valid, not forbidden, prohibited or prohibited, yet with a note that it will not be revoked until there is legal evidence of such prohibition. From the point of view of maqashid sharia, multi-contract in sharia transactions is in principle an economic activity that cannot be separated from the root of the faith (Muslim), so the goal is to meet the needs of the wider community through various ways of worship transactions distributed to those who do, transaction involving many contracts (contracts) means that one can get real benefits and avoid contracts prohibited by Islamic law.

From the arguments put forward, it can be concluded that ijma' akad is valid if it does not violate the rules that have been established by Islamic law. Although there are contracts in the contract that can meet the needs of human trafficking activities, it does not mean that the contract can meet all human needs. Therefore, the person who makes the agreement or the human economy must be active, creative and innovative to make or combine contracts that are in accordance with Islamic law. It is assumed that trade participants can carry out trading activities without violating Islamic law.

There are 5 kinds of first Al-'uqud al-Mutaqabilah, second Al-'uqud al-mujtamiyah, third Al-'uqud al-mutanaqidhah wa al- mutadhadah wa al- mutanafiyah, fourth Al-'uqud al-mukhtalifah, and fifth Al-'uqud al-murakkabah al-mutajanisah of the 5 kinds The executor of transactions on the Linkaja application is listed in the category al-uqud al-mujtamiyah, that is, several contracts collected in one contract or 2 or more contracts collected in one contract, where in the Apada contract of the Linkaja Application the Application has several contracts (wadiyah, ijarah, qardh, and jualah) that have different legal consequences, an object, and are considered in a contract / transaction. From the point

of view of maqashid sharia, multi-contract in sharia transactions is in principle an economic activity that cannot be separated from the root of the faith (Muslim), so the goal is to meet the needs of the wider community through various ways of worship transactions distributed to those who do, transaction involving many contracts (contracts) means that one can get real benefits and avoid contracts prohibited by Islamic law. From the arguments put forward, it can be concluded that ijma' akad is valid if it does not violate the rules that have been established by Islamic law (Kondev, 2017).

CONCLUSIONS AND SUGGESTIONS

Several agreements are combined in one transaction in the Linkaja application called Multi contract. In Islam, the application of the contract is allowed because the pillars and conditions have been fulfilled according to sharia, but before 2021 there is a PayLater (credit) menu, the clarity of margins (profits) is not clear and has been frozen without time limits, citing features that are currently being updated. A mixture of some contracts that are classified as multi-contract categories al- uqud al- mujtamiah when two or one contracts are combined into one contract. Some contracts are allowed in Islam on the grounds that one contract and the other contract are combined into one contract excluding contracts prohibited in nash and combined akadada excluding akadada that cannot be combined or according to the law of contradiction. E-wallet applications such as the Linkaja application are expected to provide clear information about the products operated to users, be it in the form of Cashback, Promos, Discounts, or Margins from Linkaja company cooperation with other Linkaja merchants, so that it is clear how much margin is obtained by Linkaja merchants. The results of this research are aimed at the next researcher who aims to review aspects or other sides of electronic money transaction products, hopefully so that it can be a guide to academics of Sharia economic law. For students, academics, and lecturers of Islamic economics, it is hoped that they will continue to explore and explore fiqh problems and provide guidance so that students continue to think critically in analyzing various applications in contemporary products, so that there is always a correlation between the world of business economics and Islamic economics.

REFERENCES

Febriandika, N. R., Syaifuddin, A., & Ma'ruf, A. (2022). Why is PayLater Scheme via E-commerce Prohibited in Islam? *Islamic Law Overview*. *Varia Justicia*, 18(2), 84-96.

Casado-Belmonte, M. P., Capobianco-Uriarte, M. M., Martínez-Alonso, R., & Martínez-Romero,

Efendi, S. (2008). *Ushul Fiqh*. Jakarta: Kencana.

- M. J. (2021). Delineating the Path of Family Firm Innovation: Mapping the Scientific Structure. *Review of Managerial Science*. <https://doi.org/10.1007/s11846-021-00442-3>
- Hanif, M., & Zafar, K. (2020). Developments in Islamic finance literature: Evidence from specialized journals. *Journal of King Abdulaziz University, Islamic Economics*, 33(2), 3–23. <https://doi.org/10.4197/Islec.33-2.1>
- Harun, H. (2018). Multi Akad dalam tataran fiqh. *Suhuf*, 30(2), 178-193.
- Kondev, D. (2017). *Multi-Party and Multi-Contract Arbitration in the Construction Industry*. John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781119251798>
- Kumar, B., Sharma, A., Vatavwala, S., & Kumar, P. (2020). Digital mediation in business-to-business marketing: A bibliometric analysis. *Industrial Marketing Management*, 85, 126–140. <https://doi.org/10.1016/j.indmarman.2019.10.002>
- Lei, Y., Liang, Z., & Ruan, P. (2023). Evaluation on the impact of digital transformation on the economic resilience of the energy industry in the context of artificial intelligence. *Energy Reports*, 9, 785–792. <https://doi.org/10.1016/j.egy.2022.12.019>
- Lima, L., Trindade, E., Alencar, L., Alencar, M., & Silva, L. (2021). Sustainability in the construction industry: A systematic review of the literature. *Journal of Cleaner Production*, 289. <https://doi.org/10.1016/j.jclepro.2020.125730>
- Nordin, N., Shahwan, S., & Ibrahim, N. (2021). *E-Wallet as a New Approach in Zakat Collection and Distribution: Exploring the Experience of Zakat and E-Wallet Providers in Malaysia*. oarep.usim.edu.my. [https://oarep.usim.edu.my/jspui/bitstream/123456789/13617/1/E-Wallet as a New Approach in Zakat Collection and Distribution_ Exploring the Experience of Zakat and E-Wallet Providers in Malaysia.pdf](https://oarep.usim.edu.my/jspui/bitstream/123456789/13617/1/E-Wallet%20as%20a%20New%20Approach%20in%20Zakat%20Collection%20and%20Distribution_%20Exploring%20the%20Experience%20of%20Zakat%20and%20E-Wallet%20Providers%20in%20Malaysia.pdf)
- Qurrata, V. A., Seprillina, L., Narmaditya, B. S., & Hussain, N. E. (2020). Media promotion, Islamic religiosity and Muslim community perception towards charitable giving of cash waqf. *International Journal of Monetary Economics and Finance*, 13(3), 296–305. <https://doi.org/10.1504/IJMEF.2020.108825>
- Sugu, R., & Hussain, A. (2021). Bibliometric Analysis of Published Literature on e-Wallet. *Webology*, 18(SpecialIssue2), 79–91. <https://doi.org/10.14704/WEB/V18SI02/WEB18013>
- Taplin, R. (2022). *Artificial Intelligence, Intellectual Property, Cyber Risk and Robotics*. Routledge.

