DETERMINANTS OF ZAKAT PAYERS TO TRUST ZAKAT INSTITUTIONS WITH THE MEDIATING EFFECT OF BLOCKCHAIN TECHNOLOGY: A CASE STUDY OF BAZNAS NORTH SUMATERA

BY

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ABSTRACT

Despite having the biggest Muslim population in the world, the amount of Zakat funds collected by Zakat institutions has been far from its expectation. Zakat, one of the Islamic philanthropic tools, has the potential to eradicate poverty. Effective handling of Zakat is essential for the country. Even though paying Zakat is mandatory for every Muslim, not all Zakat payers who pay it do so through Zakat institutions. One of the reasons for this is the lack of trust that Zakat payers have in Zakat institutions. However, blockchain technology, known for its transparency and immutability, can be leveraged to boost trust in Zakat institutions. This research aims to investigate the issues and challenges faced by BAZNAS (Badan Amil Zakat Nasional) in North Sumatera in collecting and distributing Zakat, as well as identify the determinants of Zakat payers' attitudes towards trust in Zakat institutions. The study also seeks to explore the impact of these determinants on trust in BAZNAS, North Sumatera, and the potential mediating effect of blockchain technology in this relationship. Both quantitative and qualitative methods were used to gather the data. Qualitative data were collected through semi-structured interviews with the top management of BAZNAS in North Sumatera, while quantitative data were collected from 301 Zakat payers using a cross-sectional design and questionnaire method. The collected data were analysed by Structural Equation Modeling (SEM) techniques using AMOS 24 and SPSS 26. The results of the survey showed that the collection of Zakat in BAZNAS, North Sumatera, is negatively affected by misunderstandings about the Zakat concept, conflicting opinions of religious leaders, and inadequate efforts to educate people about Zakat. Challenges in Zakat distribution include the lack of comprehensive information about Zakat recipients and difficulties in verifying their eligibility. The use of blockchain technology could improve the collection and distribution of Zakat, but it requires appropriate infrastructure and well-trained personnel. From the quantitative data of this study, the determinants of Zakat payers' attitudes towards enhancing trust are reputation, satisfaction of Zakat distribution, service quality, and disclosure practices. These determinants were found to have a statistically significant positive impact on trust in Zakat institutions. Furthermore, this study found that blockchain technology has a partial mediation effect on the relationship between attitude determinants and trust in Zakat institutions. Therefore, blockchain technology has the potential to improve trust in the institution by providing a more transparent and secure system for managing Zakat. This study contributes both theoretically and empirically to the use of blockchain technology to enhance trust in Zakat institutions. The study provides insightful recommendations and suggestions for Zakat institution managers and policymakers in Indonesia. Additionally, the study proposes areas for further research, presenting opportunities for expanding knowledge and understanding in this field.

ملخص البحث

تضم إندونيسيا أكبر تجمُّع من المسلمين في العالم، ورغم ذلك فإنها لا تزال تواجه فقرًا كبيرًا. تُعد الزكاة إحدى أدوات العمل الخيري الإسلامي، التي لديها القدرة على القضاء على الفقر. ويعتبر التعامُل الفعَّال مع الزكاة أمرًا ضروريًّا للبلد. ورغم كون الزكاة إلزامية على كل مسلم، فإنه لا يقوم جميع دافعي الزكاة بتسديد مدفوعاتهم من خلال مؤسسات الزكاة. ومن أسباب ذلك، عدم ثقة المكلَّفين في مؤسسات جمع الزكاة. ومع ذلك، يمكن استخدام تقنية "بلوك إتشين–blockchain" المعروفة بشفافيتها وثباتها، لتعزيز الثقة في مؤسسات جمع الزكاة. يهدف هذا البحث إلى التعرف على القضايا والتحديات التي تواجهها "بازناس" (الوكالة الوطنية لجمع الزكاة) في شمال سومطرة، أثناء عملية جمع الزكاة وتوزيعها، إضافةً إلى التعرف على محددات مواقف المكلَّفين، تجاه الثقة في مؤسسات الزكاة. بالإضافة إلى ذلك، تهدف هذه الدراسة إلى استكشاف تأثير هذه المحددات على نية الثقة في وكالة "بازناس" في شمال سومطرة، والوقوف على التأثير الوسيط المحتمل لتقنية "بلوك إتشين" في هذه العلاقة. ولتحقيق هذه الأهداف، تم استخدام الأساليب الكمية والنوعية لجمع البيانات. حيث تم جمع البيانات النوعية من خلال مقابلات شبه منظمة مع الإدارة العليا لوكالة "بازناس" في شمال سومطرة، بينما تم جمع البيانات الكمية من عينة مكونة من (301) من دافعي الزكاة، وذلك باستخدام كلٍّ من التصميم المقطعي، والاستبانة. تم تحليل البيانات التي تم جمعها باستخدام تقنية نمذجة المعادلات الهيكلية (SEM)، المتاح على برنامج "آموس–24"، وكذلك باستخدام برنامج تحليل الحزمة الإحصائية للعلوم الاجتماعية (SPSS-26). وقد أظهرت نتائج المقابلة أن قضايا جمع الزكاة في "بازناس" بشمال سومطرة، تتأثر سلبًا بسوء الفهم حول مفهوم الزكاة، وتضارب آراء القادة الدينيين، وعدم كفاية جهود محو الأمية المتعلقة بالزكاة. تشمل تحديات توزيع الزكاة، عدم وجود معلومات شاملة عن متلقي الزكاة، وصعوبة التحقق من أهليتهم. يمكن أن يؤدي استخدام تقنية "بلوك إتشين"، إلى تحسين عملية جمع الزكاة وتوزيعها، لكنه يتطلب بِنْية تحتية مناسبة، وموارد بشرية جيدة التدريب. من خلال البيانات الكمية، تكشف هذه الدراسة أن محددات مواقف المكلَّفين تجاه تعزيز الثقة، هي السُّمعة، والرضا عن توزيع الزكاة، وجودة الخدمة، وسياسة الإفصاح. وقد أشارت النتائج إلى أن هذه المحددات تؤثر بشكل كبير –من الناحية الإحصائية– على نية الثقة بمؤسسات الزكاة. إضافة إلى ذلك، وجدت هذه الدراسة أن استخدام تقنية "بلوك إتشين"، له تأثير وساطة جُزئي على العلاقة بين كلٍّ من: محددات الموقف، والثقة في مؤسسات الزكاة. لذلك، فإن تقنية "بلوك إتشين" لديها القدرة على تحسين الثقة في المؤسسة، وذلك من خلال توفير نظام آمن، وأكثر شفافية، لإدارة الزكاة. تسهم هذه الدراسة نظريًّا وتجريبيًّا في تعزيز الثقة في مؤسسات الزكاة، وذلك عن طريق استخدام تقنية "بلوك إتشين". تقدم الدراسة توصيات واقتراحات قيِّمة لمدير مؤسسة الزكاة، وواضعي السياسات في إندونيسيا. إضافة إلى ذلك، تقترح الدراسة ضرورة إجراء المزيد من البحث، وتقديم فرص لتوسيع المعرفة والفهم في هذا المجال.

APPROVAL PAGE

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DECLARATION

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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Signature..... Date 05/04/2024

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I dedicate this thesis to my beloved wife, Weni Hawariyuni, PhD and my lovely children Abhizar Khairi Rashdan, Maryam Almahira for their continuous love, support, patience, and prayer.

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LIST OF ABBREVIATIONS

AGFI	: Adjusted Goodness of Fit Index
AMOS	: Analysis of Moment Structures
ASV	: Average Shared Variance
AVE	: Average Variance Extracted
BAZNAS	: Badan Amil Zakat Nasional
BT	: Blockchain Technology
CFA	: Confirmatory Factor Analysis
CFI	: Comparative Fit Index
CMIN	: Minimum Chi-Square
CR	: Composite Reliability
DP	: Disclosure Practice
EFA	: Exploratory Factor Analysis
GFI	: Goodness-of-Fit Index
Rep	: Reputation
RMR	: The Root Means Square Residual
RMSEA	: The Root Means Squared Error of Approximation
SEM	: Structural Equation Modelling
SPSS	: Statistical Package for Social Sciences
SRMR	: Standardized Root Mean Residual Value
SQ	: Service Quality
SZD	: Satisfaction of Zakat Distribution
TPB	: Theory of Planned Behaviour
TZI	: Trust in Zakat Institution

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Zakat constitutes a fundamental component of the Islamic faith, standing as one of its five pillars. It entails an obligatory payment of a designated amount by a Muslim when their amassed wealth exceeds a predetermined threshold known as Nishab. Two primary forms of Zakat are widely followed: Zakat fitrah, observed annually in the month of Ramadan, and Zakat Maal, imposed on assets held for at least one year. The issue of poverty poses a significant challenge within the Indonesian context. As per Pramanik's findings in 1993, the Zakat institution holds a crucial role in reducing poverty. Zakat, alongside Infaq, Waqf, and Sadaqah, constitutes a prominent Islamic philanthropic practice that significantly contributes to poverty alleviation. BAZNAS, formally known as the Badan Amil Zakat Nasional, stands as the principal governing body entrusted with overseeing and administering Zakat in Indonesia. Established in accordance with Law No. 23 of 2011, BAZNAS functions as the authoritative institution responsible for managing and implementing Zakat-related activities within the country.

While Muslims are not strictly compelled to pay Zakat exclusively through Zakat institutions, opting to do so can result in significant advantages for the ummah. Directing Zakat through reputable institutions increases the effectiveness and influence of charitable contributions (Abdullah & Suhaib, 2011). These organisations possess the expertise and resources to recognise and address diverse community needs, guaranteeing a more organised and focused allocation of funds (Owoyemi, 2020). Collaborative efforts among Zakat institutions enable them to pool resources, facilitating more extensive initiatives that effectively address poverty alleviation and promote sustainable social welfare (Boonyamanond & Chaiwa, 2020). Furthermore, these organisations place a high value on transparency, accountability, and legal compliance, instilling trust in donors that their donations are being used efficiently. Although the decision ultimately depends on personal preference, channelling Zakat

through established institutions is seen as a strategic approach that optimises overall impact and promotes the welfare of the ummah (Aziz & Anim, 2020).

Indonesia, as the most populous Muslim nation globally, exhibits the potential to accumulate a substantial sum of Zakat funds. According to a 2022 report by BAZNAS, the estimated potential Zakat funds in Indonesia could amount to Rp. 21 trillion (USD 1.356 billion). BAZNAS is entrusted with collecting diverse forms of Zakat, encompassing contributions from households, private companies, and state enterprises, as well as deposits and savings. Nevertheless, it is important to acknowledge that the total amount collected by Zakat organisations in Indonesia in 2015 was only Rp. 3.7 trillion (USD 238 million), indicating a notable discrepancy between the actual and potential Zakat resources in the country. The observed percentage value denotes a fraction of its maximum potential, specifically a value below 1.3%. In a study conducted by Firdaus et al. (2012), it was disclosed that the estimated value of the Zakat fund has the potential to reach Rp 217 trillion (USD 14 billion), covering contributions from households, industries, and deposits. The aforementioned numerical value corresponded to 11.45% of Indonesia's gross domestic income for the year 2018. The statistical publication of the National Zakat Board (BAZNAS) for the year 2017 revealed that the aggregate amount of funds collected through Zakat in 2016 amounted to Rp. 5 trillion (USD 322 million).

Based on the BAZNAS report (2022), several contributing factors may hinder the realisation of Indonesia's poor Zakat potential, including the following: First, there exists a lack of awareness and confidence among Zakat payers regarding their ability to fulfil their Zakat obligation through recognised Zakat institutions, such as BAZNAS and other private Zakat entities. Second, Zakat mal and Zakat fitrah are the sole sources of wealth acknowledged for Zakat donations, leaving various untapped sources of Zakatable wealth, such as business and agriculture. Third, there is a low incentive for Zakat payers who fulfil their Zakat duty through *ámil* institutions.

According to numerous studies, trust and transparency have a significant impact on Zakat acceptance. Nikmatuniayah et al. (2017), for instance, claimed that the level of acceptability of the Zakat fund is influenced by the Quality of Accounting

Information, Accountability, and Transparency. Similarly, Owoyemi (2020) investigated the occurrence of crisis confidence within Zakat agencies, leading Zakat payers to prefer direct distribution of their contributions to intended beneficiaries. Perbawa and Abdullah (2018) conducted a study demonstrating that the perceived credibility of Zakat management institutions significantly influences individuals' awareness of Zakat payment. The most crucial factor influencing the public's inclination to make Zakat payments through Zakat institutions is the transparency, competence, and trustworthiness exhibited by these institutions in handling Zakat on behalf of the Zakat payer (*Muzakki*). According to a study by Nasri et al. (2019), Zakat institutions should enhance their transparency and professionalism to improve their financial performance in the future.

Drawing from the aforementioned information, enhancing the collection and administration of Zakat through the implementation of professional management practices and increased transparency for Muzakki could potentially bolster the level of trust among Zakat payers. This, in turn, might encourage them to channel their Zakat contributions through the designated Zakat institution rather than directly disbursing funds to the beneficiaries. Moreover, this approach is likely to significantly boost the total amount accumulated for the Zakat fund, bringing it closer to its maximum potential. As the funding level increases, it is anticipated to have a more profound impact on poverty alleviation.

To enhance the operational efficiency of Zakat institutions in Indonesia, particularly in the areas of transparency, security, and cost-effective transactions, it is imperative to undertake substantial research and formulate a model for implementation by these institutions. Emphasising the integration of novel technologies is essential to ensure the satisfaction of Zakat payers. This can be achieved by offering traceability of funds to Zakat payers. The advent of digital technology has significantly facilitated human existence, rendering all tasks more streamlined and efficient than ever. Digital technology has exerted a profound influence on various domains of human existence, including the banking and financial sectors. Financial technology, commonly referred to as Fintech, represents the technological advancements within the financial industry. The emergence of fintech is

recognised as a noteworthy innovation in the pursuit of enhancing the efficiency and efficacy of financial services (Oseni & Ali, 2019). Consequently, given the progress of this technology, it is imperative for Zakat institutions to leverage it for the enhancement of Zakat management.

Bitcoin and blockchain stand out as recent advancements in the field of financial services. Bitcoin, a form of digital currency commonly known as cryptocurrency, has achieved significant success in the financial market (Barski & Wilmer, 2014). The underlying technology supporting Bitcoin is referred to as blockchain. Blockchain acts as a distributed ledger system that records and maintains a comprehensive record of all transactions, enabling seamless peer-to-peer transactions. The system exhibits characteristics of openness, security, and universal accessibility. According to CoinDesk (2016), blockchain technology oversees and records all transactions associated with bitcoin, functioning as its ledger. While bitcoin is a notable application of blockchain technology, it is important to recognise that blockchain has the potential to be utilised in a multitude of applications beyond cryptocurrencies. This is primarily attributed to its capacity to streamline direct payment processing. As noted by Peters and Panayi (2016), blockchain technology can improve various financial services such as digital assets, remittances, and online payments. Moreover, it is widely anticipated that blockchain technology will facilitate a significant transformation in the virtual business landscape, resulting in reduced costs and the elimination of the necessity for intermediaries. According to Ølnes et al. (2017), the application of blockchain technology has the potential to safeguard critical information and facilitate ownership transfers, thereby offering significant societal advantages while mitigating associated risks.

Given the aforementioned problems, it is important to find out the determinants of trust in Zakat institutions and gauge Zakat payers' perception of utilising blockchain technology in the future, employing it as a mediating variable between attitude determinants and trust in Zakat institutions. The researcher believes it is essential to use blockchain technology in Zakat management to enhance trust in Zakat institutions. Additionally, through the utilisation of blockchain, a detailed and transparent record of Zakat movements can be established. The blockchain allows

constant tracking of funds, from collection to distribution. Accordingly, the overall amount of Zakat collected and distributed to the needy can be raised. Moreover, heightened levels of transparency and traceability may positively impact the public's confidence in making Zakat payments through Zakat institutions. The current technology in place today falls short of providing complete transparency and traceability.

1.2 STATEMENT OF THE PROBLEM

Indonesia, boasting the world's largest Muslim population, grapples with consistent poverty, emerging as a major concern. Based on reports from the Indonesian statistical centre, the poverty rate in Indonesia stood at 9.54% as of March 2022, with a population of around 275 million. Zakat has demonstrated its effectiveness in reducing or eradicating poverty in Indonesia. According to Herianingrum et al. (2023), Zakat plays a pivotal role in reducing the poverty rate, the poverty gap, and income disparity among 50 *Mustahik* in Indonesia, specifically in the Special Capital Region (DKI) area of Jakarta, through implemented empowerment programs. Furthermore, Choiriah et al. (2020) found that Zakat exerts a positive and significant effect on the BAZNAS prosperity index (IKB), a key indicator of poverty alleviation. The results also indicated that Zakat has a positive and significant influence on per capita income, another important poverty indicator. However, Hawariyuni et al. (2019) discovered that the Zakat fund received by the poor is not sufficient to cater to their basic needs in Indonesia. The study advocates for an enhancement in the collection and disbursement of Zakat across every province in Indonesia by the government.

Indonesia, which has the largest Muslim population, has a vast capacity to raise funds. However, the amount of Zakat funds raised remains a small fraction of what could be raised. For instance, as indicated in the BAZNAS 2017 report, the forecasted amount was IDR 5 trillion, but the actual collection was only IDR 284 billion. Consequently, the automatic distribution of funds to eight *Mustahik* was not optimised. The funds collected by BAZNAS often fall short of their potential for

various reasons. One contributing factor is the *Muzakki*'s mistrust in Zakat institutions. As was already mentioned, a cause of this problem is the *Muzakki*'s scepticism of the Zakat institutions' ability to distribute and manage their funds efficiently due to a perceived lack of transparency (BAZNAS, 2022). Thus, many *Muzakki* continue to pay Zakat to the *Mustahik* directly.

Many Zakat distributions directly from *Muzakki* to *Mustahik* generate concerns among the general public over the function of the Zakat management organisations (Hamidi, 2013). The varied reasons behind the *Muzakki*'s actions prompt introspection within Zakat institutions. Society seems to harbour a lack of complete trust in Zakat institutions. The Zakat management organisation's role extends beyond socialisation and fundraising; it carries a greater responsibility. Despite the collection of social funds, the society has never been able to access about their distribution (Hamidi, 2013).

Over the years, Zakat institutions in most Muslim countries have reported poor collection levels, attributed to several factors, notably the widespread lack of trust among Zakat payers in these institutions. Some researchers asserted that the low levels of payment stem from the lack of trust in Zakat institutions. According to Oladimeji Abioye Mustafa et al. (2013), since the Zakat institutions' survival hinges on the amount of Zakat collected from payers, trust is crucial to their operations. This is in line with a claim made by Sargeant and Lee (2002), who posited that a charity's success is directly tied to the level of trust donors place in it.

The sustainability of charity organisations like Zakat institutions depends on the level of trust the donors have in those organisations; hence, trust plays an important role for Zakat institutions. In Indonesia, Zakat payers have the option of paying through Zakat institutions or independently; thus, the sustainability of the Zakat institutions is directly connected with the level of trust possessed by Zakat Fund donors in these institutions. The survival of Zakat institutions is dependent on both the availability of payments and their efficient distribution to *Mustahik*. Furthermore, historical evidence from over 1000 years ago revealed that efficient collection and

distribution methods during the Umar bin Abdul Aziz dynasty led to the eradication of poverty (Muhammad et al., 2016).

Earlier studies have identified a variety of factors that can improve trust between Zakat payers and Zakat institutions. Ghazali (2016) proposed four antecedents of trust: shared value, communication, non-opportunistic behaviour, and perception in the distribution of Zakat. Meanwhile, Zainal et al. (2016) contended that reputation, satisfaction of Zakat distribution, and service quality are all factors that shape trust in Zakat institutions. In another study, Oladimeji Abioye Mustafa et al. (2013) outlined four direct impact factors on Zakat payers' trust: board capital, disclosure practices, stakeholder management, and the model Zakat institutions. Ali et al. (2017) highlighted the significance of trust in the institution, understanding level of Zakat, and attitude of Zakat payers' in influencing their intention to contribute Zakat through an institution. Therefore, this study also aimed to uncover the factors influencing *Muzakki* to trust Zakat institutions, which can improve the Zakat institutions' reputation among Zakat payers.

Accountability and financial statement disclosure are the two metrics used to measure the success of public organisations. Financial statements, being a straightforward form of accounting, are easily comprehensible due to their transparency and widespread public accessibility, particularly for *Muzakki*. Charity is widely recognised on a global scale as a moral imperative, leading to the substantial allocation of financial resources in its pursuit. The methodology for soliciting donations often lacks clarity, posing challenges for charitable organisations in cultivating trust and attracting potential donors (Farooq et al., 2020). A blockchain-based platform for managing charities seeks to offer a transparent, secure, auditable, and efficient system. The system will utilise digital currency to cover the Zakat collection.

The low level of trust and transparency in the distribution process is the primary cause for distrust among *Muzakki* towards Zakat institutions. The current system of Zakat collection and distribution is inefficient, lacking real-time capabilities. Normally, the Zakat payer will only receive general reports on the

website; hence, creating a disconnect between Zakat payers and beneficiaries. This issue can be addressed through the implementation of a blockchain-based Zakat system, which essentially provides transparency and eliminates the need for intermediaries.

This research aimed to bridge this gap by investigating the factors influencing trust in Zakat institutions: reputation, satisfaction of Zakat distribution, service quality, and disclosure practices. Reputation pertains to the institution's overall standing and perception among Zakat payers, while satisfaction with Zakat distribution assesses contentment with the allocation and distribution of Zakat funds. Service quality scrutinises the efficiency and effectiveness of BAZNAS' services, encompassing responsiveness and overall user experience. Disclosure practices gauge the transparency and openness of BAZNAS, North Sumatera in communicating relevant financial and operational information.

Furthermore, the integration of blockchain technology, an emerging paradigm, holds the potential to revolutionise the transparency, security, and efficiency of Zakat transactions. This research posits that blockchain technology may act as a mediator, influencing the interplay between reputation, satisfaction of Zakat distribution, service quality, disclosure practices, and trust. Understanding this mediating effect becomes pivotal for both academic exploration and practical implementation.

In addressing this concern, this study sought to analyse determinants that significantly influence Zakat payers' trust in BAZNAS North Sumatera, focusing on reputation, satisfaction of Zakat distribution, service quality, and disclosure practices, and how the mediating effect of blockchain technology impacts this relationship. The mediating effect of blockchain technology has the ability to enhance trust in Zakat institutions. Adopting a blockchain-based Zakat model, coupled with smart contracts, ensures transparent Zakat movement from collection to disbursement points. Blockchain enables meticulous tracking of transactions, including destinations, arrivals, and locations, providing a robust tool against organisational inefficiency and corruption. Subsequently, the Zakat payers would have greater transparency and accountability towards the Zakat institution. Therefore, this system will foster

increased trust among Zakat payers as their Zakat reaches intended recipients. Besides that, this study aimed to delve into issues and challenges faced by BAZNAS North Sumatera regarding its Zakat collection and distribution.

The results of this study hold immense significance for BAZNAS North Sumatera in managing Zakat, especially in gaining the trust of Zakat payers and knowing what factors affect the level of trust in Zakat institutions. So, armed with this knowledge, BAZNAS can work towards increasing the level of *Muzakki*'s trust in them. If the results of this study are applied, there will be a greater number of Zakat payers placing trust in BAZNAS North Sumatera and opting to directly channel their Zakat payments through the institution.

The information holds paramount importance for BAZNAS, being the authorised Zakat management body in Indonesia. In practice, Zakat payers frequently contribute money directly to those in need without being aware of BAZNAS's existence. It is noteworthy that, besides BAZNAS, Indonesia has numerous other Zakat management institutions operated by non-profit organisations or private entities. The information about the determinants that impact trust in Zakat institutions is valuable and can be applicable to all Zakat management institutions throughout the country.

For institutions that require intermediary entities, like financial institutions, the emergence of blockchain technology has offered a solution. The inherent transparency of this technology can also be leveraged to meet the distribution standards set forth by Zakat institutions. The applicability of blockchain technology in Zakat distribution is feasible, given the increasing familiarity and digital literacy among individuals in the current digital era in Indonesia. Therefore, blockchain technology stands as a useful tool for enhancing transparency in Zakat distribution.

Undoubtedly, the primary approach employed by Zakat institutions to ensure their sustainability is the establishment of trust among Zakat payers through the utilisation of Zakat channels (Mustafa et al., 2013). According to Kashif et al. (2018), the economic growth of Muslim states can be enhanced when a Zakat institution demonstrates proficiency in upholding the trust of Zakat payers. The potential adverse

impact on the functioning of Zakat institutions due to the lack of information is evident. The existence of data from Muslim countries, such as Malaysia and Pakistan, indicates that the assurance of trust among Zakat payers in official Zakat channels is not guaranteed (Kashif et al., 2018; Mustafa et al., 2013; Suhaila et al., 2019). For example, the government of Pakistan has put into place certain encouraging strategies, such as designating banks to automatically deduct the appropriate amount from Zakat payers' accounts during Ramadan. However, it is observed that Zakat payers withdraw all of their funds from banks prior to Ramadan, preventing the necessary deductions by banks. Empirically, this behaviour is attributed to Zakat payers' lack of trust, as they prefer to pay with their own money rather than through formal institutions (Kashif et al., 2018).

Furthermore, this practice is even more pronounced in Yemen, a typical Muslim country, where people frequently choose to directly donate their Zakat to deserving and needy recipients due to reservations about disclosing their wealth to shady Zakat offices (Bin-Nashwan et al., 2020; The General Directorate of Zakah Obligations (GDZO), 2016). Any Zakat payment not routed through the Zakat Authority (GDZO), the sole organisation in charge of managing and collecting Zakat funds from individuals and businesses, is viewed as a breach of Zakat Law No. 2 of 1999 (GDZO, 2016). Despite all Yemenis being Muslims, presenting significant potential for Zakat funds, the actual national collection through the GDZO remains considerably below expectations in reality.

Public trust has been discovered to have a substantial influence on voluntary conduct in the non-profit sector and is a requirement for obtaining funding (Sargeant & Lee, 2002; Schultz & Gavkalova, 2019). Zakat institutions work to support Islamic fiscal institutions by primarily raising and managing capital. Their success and survival strategy are concentrated on luring, maintaining, and listening to Zakat payers (Kashif et al., 2018). This emphasis is essential because Muslims must place sufficient faith in a body endowed with religious authority, especially given that Zakat is a religious obligation rooted in divine commands. However, a lack of trust in Zakat organisations may tempt Zakat payers to opt for direct Zakat payments instead.

The trust motive is grounded in the theory of social exchange, which posits that the relationships between Zakat payers and Zakat institutions are consistently influenced by reciprocity. The existing body of literature on trust perception primarily examines non-profit institutions in non-Islamic contexts. Consequently, there is limited understanding regarding the influence of trust in Zakat institutions on Muslims' compliance behaviour when fulfilling their religious obligation to Zakat (Coletti et al., 2005; Sargeant and Lee, 2002; Schultz et al., 2019; Zaheer and Venkatraman, 1995; Mustafa et al., 2013).

The effectiveness of Zakat institutions and agencies depends on the level of Zakat payer support; hence, it is crucial for them to comprehend Zakat compliance behaviour. Public trust in Zakat institutions is essential to the viability of the institutions and is a major factor in encouraging Zakat donations and determining compliance levels (Bin-Nashwan et al., 2020). The level of trust that *Muzakki* (those who pay Zakat) have in Zakat institutions, particularly BAZNAS North Sumatera, must be addressed. The success of these institutions depends heavily on trust, hence, any loss of trust in BAZNAS may lead Zakat payers to pay Zakat directly to recipients instead of the Zakat institutions. This may have a substantial impact on the amount of Zakat funds that BAZNAS collects, which may, in turn, reduce the amount of Zakat distributed. This can complicate the institution's ability to reduce poverty, making it crucial to maintain and build trust among Zakat payers.

The objective of this study was to gain a deeper understanding of the various factors that have the potential to enhance the level of trust that *Muzakkis* have in Zakat institutions, with a specific focus on BAZNAS. To this end, the investigation assessed the mediating effect of blockchain technology on the relationship between various variables, namely Reputation, Satisfaction of Zakat Distribution, Service Quality, Disclosure Practice, and Trust in Zakat Distribution. These variables are crucial elements of the Zakat distribution process, and a detailed examination of their impact on trust can provide Zakat institutions with valuable knowledge for streamlining their operations. The study's exploration of the potential mediating effect of blockchain technology further highlighted the technology's potential to enhance the Zakat distribution process and reinforce trust among *Muzakki*. The results of the study have

significant implications for Zakat institutions that want to build *Muzakki*'s trust, which will make Zakat distribution more effective as a means of alleviating poverty.

1.3 RESEARCH OBJECTIVES

This study aimed to achieve the following objectives:

RO1: To explore issues and challenges faced by BAZNAS North Sumatera, especially in collecting and distributing Zakat funds.

RO2: To identify the Zakat payer's attitude determinants towards trust enhancement in BAZNAS, North Sumatera.

RO3: To investigate the impact of Zakat payers' attitude determinants on trust in BAZNAS, North Sumatera.

RO4: To examine the mediating effect of blockchain technology on Zakat payers' attitude determinants and trust in the Zakat institution of BAZNAS North Sumatera.

1.4 RESEARCH QUESTIONS

To achieve the objectives stated above, this study embarked on the following research questions (RQ):

RQ1: What are the issues and challenges faced by Zakat institutions in BAZNAS, North Sumatera, in Zakat collection and distribution?

RQ2: What are the determinants of the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera?

RQ3: What is the impact of Zakat payers' attitude determinants on trust in the Zakat institution of BAZNAS, North Sumatera?

RQ4: Does blockchain technology play a significant role in mediating the relationship between Zakat payers' attitude determinants and trust intention in the Zakat institution of BAZNAS, North Sumatera?

1.5 SIGNIFICANCE OF THE STUDY

As per the BAZNAS report (2022), a notable reason for the low funds in Zakat collection lies in the lack of trust between *Muzakki* and Zakat institutions. Therefore, it is crucial to determine the factors that influence trust in Zakat institutions. The nexus between *Muzakki* and Zakat institutions is heavily reliant on trust. Without trust, *Muzakki* may be less inclined to pay Zakat, which can have a big impact on the amount of Zakat funds collected and distributed. Public trust in Zakat institutions is essential in nurturing Zakat giving and gauging the extent of compliance; it stands as an integral element of the Zakat institutions' sustainability (Bin-Nashwan et al., 2020). This study sought to scrutinise the determinants of trust in Zakat institutions and the mediating effect of blockchain technology on the interplay between the determinants and trust in Zakat institutions.

1. Understanding the Factors Influencing Trust: The study's foremost significance lies in its capacity to identify the factors that impact *Muzakki*'s trust in Zakat institutions, particularly in Indonesia. The study provides valuable insights into the establishment, sustenance, and reinforcement of trust within the Zakat distribution process by exploring the relationships between factors such as reputation, satisfaction with Zakat distribution, service quality, and disclosure practices.

2. Developing Effective Strategies: Empowered with insights into the factors that impact trust in Zakat institutions, the institutions can devise effective strategies that promote transparency, accountability, and service quality. These strategies, if successful, may ultimately lead to enhanced trust,

improved Zakat collection and distribution, and more effective efforts to eradicate poverty.

3. Exploring the Potential of Blockchain Technology: The study's scrutiny of the mediating effect of blockchain technology is important as it illuminates how the technology can elevate the efficiency of the Zakat distribution process. By offering increased transparency, blockchain technology can improve trust levels, streamline the distribution process, and eventually result in a more efficient Zakat collection and distribution mechanism.

4. Contributing to the Literature: The study can augment the existing body of knowledge on Indonesian Zakat institutions and poverty reduction efforts by examining the determinants shaping trust in these institutions and the potential of blockchain technology. This can contribute to the development of a more thorough and nuanced understanding of the challenges and opportunities inherent in advancing social welfare through Zakat distribution.

5. Enhancing Institutional Efficacy: Through heightened trust, improved transparency and accountability, as well as streamlined distribution process, the study's discoveries can ultimately amplify the effectiveness of Zakat institutions in Indonesia. This can help make efforts to reduce poverty more effective, which is crucial in a country where it still poses a significant challenge.

6. Encouraging the Use of Innovative Technologies: The study's emphasis on blockchain technology advocates for the application of novel technologies to the Zakat distribution process. This support enables Zakat institutions to stay abreast of the fast-changing technological landscape, streamline their operations, and ultimately improve their efficacy in promoting social welfare.

7. Providing Practical Value: Finally, the study's significance manifests its capacity to offer practical value to Zakat institutions and the larger community. By identifying the factors that influence trust and exploring the potential of blockchain technology, the study can help Zakat institutions develop effective strategies and adopt innovative technologies, culminating in an enhanced effectiveness of the Zakat distribution process. This can help to lessen poverty and promote social welfare, solidifying the study's valuable contribution to the field.

Overall, the significance of the study on the determinants of trust in Zakat institutions is multifaceted, ranging from improving institutional efficacy and encouraging the use of innovative technologies to providing practical value and contributing to the existing literature. Besides that, the study holds the potential to make a meaningful contribution to the field, aiding Zakat institutions in creating a positive impact on Indonesian society by highlighting the challenges and opportunities associated with promoting social welfare through Zakat distribution.

1.6 ORGANISATION OF THE STUDY

The study is organised into seven chapters. An overview of the study is provided in Chapter One. It delves into the concept of poverty and the role of Zakat in its alleviation. The chapter explains the introduction to the study and offers a summary of the key issues, drivers, and challenges that Indonesia's Zakat institutions, in particular BAZNAS, must deal with, as well as the role of blockchain technology in enhancing trust. The problem statement, research objectives, and significance of the study are also included in this chapter. Along with a profile of the BAZNAS, a brief history of the Zakat development is briefly discussed in Chapter Two. Moving to the third chapter, a literature review is presented, covering blockchain technology, Zakat, trust, and attitude determinants. Drawing on the strengths and weaknesses of the literature, this study endeavours to fill the gaps in the literature and offers a study plan for both current and future research. The theoretical and conceptual frameworks of this study, along with the hypothesis development, are elucidated in Chapter Four. Chapter Five is the research methodology that details relevant quantitative and qualitative tools for the study's analysis, design, population, and sampling techniques. Chapter Six

consists of data analysis, discussions of the hypothesis test's validity, and discussions of findings and interpretations. Finally, Chapter Seven synthesises conclusions, presents recommendations, discusses results, and outlines strategic implications derived from the research. Additionally, it highlights the study's limitations and suggests the path for future research.

CHAPTER TWO

OVERVIEW OF NATIONAL ZAKAT BOARD (BAZNAS)

2.1 INTRODUCTION

This chapter furnishes a comprehensive profile of *Badan Amil Zakat Nasional* (BAZNAS) at the national level, with particular focus on BAZNAS North Sumatera, including its programmes and how the Zakat funds are collected and distributed. The chapter unfolds in seven sections, encompassing the introduction, a brief explanation of the types of Zakat institutions in Indonesia, the history of BAZNAS, the Zakat management organisation in Indonesia, the Zakat collection and distribution by BAZNAS, and the implementation of digitalisation within the organisation.

2.2 ZAKAT INSTITUTIONS IN INDONESIA

According to Act Number 23 of the year 2011, Zakat management in Indonesia is handled by two institutions, namely the National Zakat Amil Agency, referred to as BAZNAS, and the National Amil Zakat Institution, abbreviated as LAZ. While LAZ is a community-based organisation, BAZNAS is a government-based organisation that manages Zakat on a national level. Their tasks are to collect, distribute, and utilise Zakat. To assist in the collection of Zakat, BAZNAS formed an organisation called the Zakat Collection Unit, abbreviated as UPZ (Andayani et al., 2019).

2.3 HISTORY OF BAZNAS

Based on Presidential Decree of Republic Indonesia No. 8 of 2001, the Government of Indonesia formed Badan Amil Zakat Nasional (BAZNAS) in 2001. The only authorised institution in Indonesia designated by the government to collect and disperse Zakat, Infaq, and Sadaqah (ZIS) is BAZNAS. The role of BAZNAS as an authorised institution in managing Zakat in Indonesia is also supported by Act No. 23

of 2011; the regulation explicitly states that BAZNAS is a non-structural government institution that is independent and responsible to the president through the minister of religion. Therefore, BAZNAS, with the government, is responsible for overseeing Zakat management based on Sharia, trustworthiness, expediency, justice, legal certainty, integration, and accountability.

BAZNAS' vision is to become the world's best Zakat manager, while their mission is as follows:

1. To coordinate with BAZNAS' branches in all the provinces, districts, or cities to achieve the national objectives.

2. To optimise the measurement of Zakat collection in the country.

3. To enhance the distribution and utilisation of Zakat in poverty alleviation, increase public welfare, and minimise the social gap.

4. To implement a transparent financial management system and be accountable based on the latest information and communication technology.

5. To implement a system of excellent service for all national Zakat stakeholders.

6. To mobilise Islamic da'wah to raise the Zakat through the synergy of the ummah.

7. To be more active and a leader in the Zakat movement around the world.

8. To prioritise Zakat as an instrument to develop a justice and welfare society.

9. To improve Amil Zakat's capability to be more excellent and become the world's defence.

2.4 ZAKAT MANAGEMENT ORGANISATION

Based on the BAZNAS statistical report 2019, currently, the number of Zakat management organisations consists of BAZNAS and LAZ. BAZNAS has only one main office, 34 offices in the province, and 514 offices in cities across Indonesia. LAZ has 23 main offices, 12 offices in the province, and 33 offices in cities. Meanwhile, for LAZ, there are 23 institutions at the national level, 12 at the province level, and 33 at the district/city level across Indonesia.

In order to improve their management quality, BAZNAS has done quality management certification using the International Organisation for Standardisation (ISO). According to the BAZNAS statistical report of 2019, there are three BAZNAS at the province level that have been certified in Quality Management (ISO 9001:2015). Namely, BAZNAS Central on January 10, 2019 by WQA, BAZNAS Riau Province on February 18, 2018 by IAAF-KAN, and BAZNAS West Java Province on December 11, 2018 by WQA.

2.5 ZAKAT COLLECTION

BAZNAS's primary task is to collect Zakat funds to reach its potential in Indonesia. Several studies have been undertaken to quantify the potential for Zakat funds in Indonesia. A study by Firdaus et al. (2012) stated that the potential for Zakat in Indonesia amounted to 3.4 percent of Indonesia's GDP in 2010. This calculation was based on diverse data, including individual and corporate income levels.

Contrarily, Sudibyo (2018) contended that the potential amount of Zakat in Indonesia, standing at 3.4 percent of Indonesia's GDP, as previously studied by Firdaus et al. (2012), can only be realised if Zakat is treated as a tax reduction. In 2017, the potential Zakat collection was estimated at IDR 462 trillion or USD 32.57 billion. This potential figure exceeded the current potential when Zakat is treated as an income tax deduction, amounting to 1.57 percent of GDP. A comparative table is presented below:

Table 2.1 Potential Zakat Collection in Indonesia

	Current Regulation	**Ideal Tax Incentives**
Tax Incentives	Zakat as income tax deduction	Zakat as tax deduction
Potential Zakat Collection	1.57 percent of GDP	3.4 percent of GDP

Source: Sudibyo (2018) as cited in the centre of strategic Studies of the National Board of Zakat (2019)

Despite the potential drop in Zakat amount, the Zakat collection rate remains notably high. The substantial capacity for ZAKAT collection in Indonesia can be attributed to its status as the largest Muslim nation globally. However, the high potency of the Zakat collection has not been fulfilled. As depicted in the table, the actual Zakat collection has barely come close to 1.00 percent of its potential amount. Nevertheless, there appears to be a discernible trend over the past decade, albeit not a substantial rise in quantity.

Table 2.2 National Zakat Collection 2002 – 2018

Year	**Total Amount of Zakat Collection (USD million)**	**Annual Growth (%)**
2002	4.83	-
2003	6.02	24.70
2004	10.59	76.00
2005	20.87	96.90
2006	26.35	26.28
2007	52.25	98.30
2008	64.96	24.32
2009	84.72	30.43
2010	105.91	25.00
2011	122.15	15.25
2012	155.33	27.24
2013	190.64	22.73
2014	233.00	22.22
2015	297.95	21.21
2016	354.24	18.89
2017	439.47	24.06
2018	571.90	30.13
Average	161.24	36.48

Source: (Ayuniyyah, 2019)

From Table 2.2, it can be observed that the national Zakat payment has been rising steadily as the sum has increased from USD 4.84 million to USD 571.9 million between 2002 and 2018. This trend suggests that, in general, Muslims are more mindful of their religious obligation to pay Zakat through the Zakat Institution (BAZNAS, 2019).

The fund collection nearly doubled in both 2005 and 2007, coinciding with a series of natural disasters in Indonesia, including the devastating tsunami in Aceh in 2005 and a devastating earthquake two years later. In other words, it indicates that the intensity of Muslim commitment increased over time. However, a slower decline had been evident in the five years since 2008, although the figures remained positive. This indicates the need for BAZNAS's national efforts to intensify their collection endeavours.

According to the BAZNAS report (2017, as cited in Ayuniyyah et al., 2018), several factors contribute to the low realisation of Zakat potential in Indonesia. These include, firstly, there is a lack of understanding and trust in formal Zakat institutions, including BAZNAS and other private Zakat institutions. Secondly, Zakat sources are mainly limited to Zakat mal and Zakat fitrah, with other potential sources of wealth like business and agriculture not being fully utilised. Thirdly, there are insufficient tax incentives for Zakat payers who fulfil their obligations through Amil institutions.

2.6 ZAKAT DISTRIBUTION

Beyond Zakat collection, evaluating the Zakat distribution programme is essential. According to Zakat National Statistics 2019, the Zakat organisation that distributed most Zakat funds was LAZ, with almost 77% of disbursements across Indonesia, while the least distribution was by BAZNAS at the province-level, with less than 1%.

Mustahik is a group of beneficiaries of Zakat. According to a report by BAZNAS, they distribute Zakat to seven types of *Mustahik*: Fakir Miskin (the poor), *Amil* (the Zakat collector), *Muallaf* (the reverts), *Riqob* (one who wants to free himself/herself from the bondage or shackles of slavery), *Gharimin* (one who is in

debt and needs assistance to meet his/her basic needs), *Fi sabilillah* (one who strives in the cause of Allah for the betterment of the community), and Ibnu Sabil (stranded travellers on a permissible journey).

According to the report from BAZNAS in 2018, most Zakat fund collection, nearly 41%, originated from Zakat Maal-Profession, surpassing other fund types like Zakat Maal, Zakat Fitrah, Infaq, and Sadaqah. Meanwhile, Infaq or Sadaqah ranked as the second most prevalent fund type collected, while Zakat fitrah constituted only 13% of all fund types.

BAZNAS, at the national level, administers five major programmes to distribute the Zakat funds: Zakat Community Development (ZCD), Indonesia Healthy Home, Smart Home for Children of the Nation, *Mustahik* Service Centre (MSC), and Disaster Quick Response Programme. These programmes are divided into two types: consumption-based distribution programmes and production-based distribution programmes.

BAZNAS goes beyond merely distributing funds to *Mustahik* through the *qard al hasan* scheme; it also operates as a mentoring programme for micro-entrepreneurs. The programme is crucial as it offers both administrative and practical support, as well as personal development opportunities for those who participate.

An extensive explanation of each programme is as follows: Firstly, ZCD is a programme that focuses on developing a community that incorporates social elements (education, health, religion, and the environment) with economic aspects. This initiative endeavours to empower individuals through expertise and skill-building, fostering their interest of becoming more successful and autonomous by educating and helping them within their local community.

Secondly, Indonesia Healthy Home seeks to provide free healthcare to individuals facing financial constraints. This hospital extends its reach through mobile medical facilities to beneficiaries residing in the most distant areas.

Thirdly, the Smart Home for Children of the Nation aims to elevate the recipients' standard of education. This programme is designed and tailored for students at both the elementary and secondary levels. The initiative also offers additional scholarships. The scholarships cover both tuition and monthly fees, aligning with the initiative's slogan of "One Family, One Graduate," as part of the Student Assistance Programme.

Fourth, the *Mustahik* Services Centre (MSC) is a programme designed to assist recipients in meeting their short-term needs. This includes cash, as well as other items that the beneficiaries require. This service is divided into several units, namely Service Units, Response Units, and Rice ATMs. In particular, service units and responsive units serve types of housing access services (rent and house renovations), medical and health access assistance, education access assistance, access assistance (living expenses, clothing, or rice ATMs), transportation access assistance, and debt relief for essential living expenses.

Fifth, the Disaster Quick Response Programme, characterised by its full accountability, strives to swiftly respond to natural and social disasters. This initiative has the overarching goal of increasing public awareness of Disaster Risk Reduction (PRB) through education; assist disaster victims during the stages of Rescue, Relief, Recovery, and Reconstruction; foster a spirit of volunteerism in the community; strengthen capacity; and build volunteer networks. Handling Disaster Victims through Rescue activities; Disaster Risk Management (DRM) through educational activities in schools; volunteering through emergency volunteer recruitment activities; and planned volunteer recruitment are the three key activities that make up this initiative.

In addition to the aforementioned five programmes, the Zakat Fund allocates its resources to the following five areas: economy, education, Islamic preaching, health, and social humanity. As a result, in 2016, about one third (31.28%) of the overall Zakat funds were channelled to the education sector, followed by more than one-fourth (26.5%) to the social humanity sector. Approximately one quarter (25.89%) of Islamic preaching in 2017 had the largest distribution, followed by more

than one quarter (25%) of Islamic preaching (22.56%). The lowest contribution in 2016 and 2017, respectively, was from the health sector, at 8.39% and 9.52%.

In regard to disbursement to *Mustahik* (Ashnaf in Arabic), most of the funds went to fakir miskin (the poor), which summed up to 63% of the total funds, followed by Fi sabilillah (23%), and Amil (11%). The data on Zakat disbursement are depicted in Table 2.3.

Table 2.3 Zakat Distribution based on Recipients

Group of Recipients (*Ashnaf*)	**2015 (%)**	**2016 (%)**	**2017 (%)**
The poor and the needy *(Fakir miskin)*	74.36	72.93	69.06
The administrators of zakat *(Amil)*	0.00	7.14	10.67
The new revert to Islam *(Muallaf)*	0.93	0.59	2.00
The freeing captive (*Riqob*)	0.52	0.15	0.45
The debtors (*Gharimin*)	0.64	0.56	0.84
The cause of Allah (*Fii Sabilillah)*	22.40	17.91	15.54
The travellers (*Ibnu Sabil*)	1.15	0.73	1.45

Source: BAZNAS (2019)

Table 2.3 shows that the distribution of Zakat was greatest among the poor and the needy. It demonstrates that one of Zakat's aims is to alleviate poverty, which is a primary priority of the Zakat distribution programme. The other highest Zakat portion is Allah's cause. In this scenario, the share fell from 22.20% in 2015 to 15.54% in 2015. Zakat administrators were also found in 2016 and 2017 to earn the third-highest share of the Zakat Fund. This fund was used to cover administrative expenses related to the gathering and distribution of Zakat funds. The remaining categories only received a small portion of the overall distribution.

2.7 ZAKAT DIGITALISATION OF BAZNAS

BAZNAS has leveraged technology to enhance their performance in terms of Zakat collection and distribution. It goes without saying that this will lead to improved performance at a lower cost. As an institution responsible for managing public funds,

technology has considerably benefited them in boosting efficiency, transparency, and accountability (BAZNAS, 2020). In terms of Zakat management, the application of blockchain technology is put into use to improve the transparency of Zakat institutions, alongside the intensification of Muzzaki's trust in channelling their Zakat through Zakat institutions. BAZNAS utilised this technology by collaborating with Desto on the iZakat application. However, this implementation is still on hold due to a lack of regulatory support from the government and well-trained personnel (BAZNAS, 2019).

2.7.1 Digital Collection

Regarding collection methods, BAZNAS adopts two digital platforms, namely the internal platform and the external platform (PUSKAS BAZNAS, 2018). For its internal platform, BAZNAS utilises its own website to collect Zakat funds. Besides the website, BAZNAS also developed an android-based application called *Muzakki* Corner (BAZNAS, 2020). This application enables *Muzakki* to conveniently make payments using their smartphones, simplifying the process of fulfilling their Zakat obligations.

Another kind of payment innovation is making payments through automatic machines. BAZNAS is in collaboration with PT. M-Cash Integrasi, where Zakat can be collected through the M-Cash machines. The M-Cash machine itself possesses several functions such as topping up credit, paying for electricity, water, and Zakat. Until now, M-Cash machines have been widely spread in more than 700 shopping centres in Jakarta, Bogor, Depok, Tangerang, and Bekasi (Ismanto, 2018).

To expand Zakat collection in Indonesia through digital channels, OPZ collaborates with external platform providers to offer digital Zakat payment services. The platforms are e-commerce, ride-hailing, crowdfunding, and an e-wallet. BAZNAS and LAZ Dompet Dhuafa have joined forces with Tokopedia, an e-commerce platform, to facilitate Zakat payments. Additionally, BAZNAS collaborates with external platform providers such as Gojek, Indonesia's ride-hailing platform provider.

BAZNAS Dompet Dhuafa collaborates with the ride-hailing platform provider to collect Zakat funds through the company unit Go-Give. Then, there is crowdfunding, another external platform that BAZNAS utilises to collect Zakat, donations, and alms (ZIS) funds. Kitabisa.com is one of the crowdfunding platforms that has partnered with numerous OPZs to collect funds from the community. Additionally, BAZNAS established Zakathub on that platform, allowing foundations and other social organisations to receive ZIS funds from donors and distribute them to those in need of assistance (BAZNAS, 2020).

Additionally, using e-wallets, or digital wallets, for various transactions has become a prevalent common practice in society. In the near future, non-cash transactions will replace cash transactions in Indonesia, envisioning a transition towards a cashless society (Asmara, 2018). To assist with this government initiative and meet the needs of *Muzakki*, who will distribute Zakat, Infaq, and Sadaqah (ZIS) funds on a non-cash basis, several OPZs have partnered with e-wallet platforms to offer non-cash Zakat payment options. For example, BAZNAS has partnered with several digital wallet companies, including GoPay, LinkAja, and OVO, to facilitate Zakat and donation payments (BAZNAS, 2020).

2.7.2 Digital Distribution

In addition to collecting and administering Zakat funds, BAZNAS has initiated efforts to digitise the disbursement of Zakat funds, thereby enhancing their efficacy and efficiency. A tangible step in this direction is the issuance of BAZNAS Chairman Decree No. 33 of 2019 on *Mustahik* Identification Number (NIM). NIM is BAZNAS's attempt to accurately identify a *Mustahik*. This programme is the outcome of a collaboration between BAZNAS and the Republic of Indonesia's Ministry of Social Affairs in order to distribute Zakat funds via the Integrated Database (BDT). Comprehensive data on the number of impoverished people is available in the BDT. Leveraging BDT, BAZNAS and other Zakat institutions can adeptly identify *Mustahik* eligible for Zakat funds without worrying about running afoul of similar initiatives administered by the Ministry of Social Affairs and other non-profit organisations.

BAZNAS, in compliance with NIM, has committed to distributing Zakat in an accountable, transparent, and targeted manner, as evidenced by the issuing Decree of BAZNAS Chaiman No. 33 of 2019 (BAZNAS, 2020).

Additionally, BAZNAS accomplished the digitalisation of Zakat distribution by launching a Rice ATM machine, where *Mustahik* will be issued a card with a chip to use when purchasing rice at the BAZNAS Rice ATM. These rice ATMs have been strategically installed across several locations throughout Jabodetabek. BAZNAS recommended replicating such schemes at the provincial, regency, and city levels to assist *Mustahik* in obtaining staple foods for daily needs. An exemplary initiative is BAZNAS Siak Regency, which inaugurated the seventh Rice ATM in a mosque on May 16, 2019 (BAZNAS, 2020).

2.8 BAZNAS NORTH SUMATERA PROVINCE

BAZNAS North Sumatera Province was established by Decree No. 451.7.05/K/2001 of the Governor of North Sumatera as the official collector and distributor of Zakat, Infaq/Shadaqah (ZIS), as well as the coordinator of the Amil Zakat Agency. According to data collected in 2018, the target for Zakat collection in North Sumatera was approximately IDR 60 billion, but the actual collection amounted to only IDR. 20 billion (Rahayadi, 2019, as cited in Rahayu et al., 2021). However, BAZNAS's Zakat collection in North Sumatera is still considerably below the potential Zakat. In North Sumatera, the potential for Zakat is estimated to be IDR 2 trillion, but only 2% can currently be managed by official institutions (Rahayu et al., 2021). With ever-increasingly difficult and complex challenges, BAZNAS in North Sumatera must persist in enhancing performance to maximise the effectiveness of Zakat in eradicating poverty and income inequality (Anwar, 2016, as cited in Rahayu et al., 2021)

Below is a table for the amount of Zakat funds collected by BAZNAS North Sumatera Province:

Table 2.4 Amount of Zakat Collection by BAZNAS North Sumatera

Year	Amount (IDR)	Amount (USD)
2014	1,705,006,702	119,583
2015	2,211,456,217	155,103
2016	2,130,101,464	149,397
2017	3,320,610,494	232,895
2018	4,645,412,167	325,812
2019	6,570,050,369	460,799
2020	9,931,671,982	696,571
Total	**30,514,309,395**	**2,140,163**

Source: BAZNAS, 2021
Currency 1 USD = Rp.14.257

As of the latest information available from BAZNAS North Sumatera, the implementation of blockchain technology is yet to be adopted by the organisation. In the realm of digitalisation, the organisation has taken a step forward by facilitating the collection of Zakat through its website. However, the utilisation of blockchain technology, has not been integrated into BAZNAS North Sumatra's operations. Embracing blockchain could potentially enhance the efficiency, traceability, and security of Zakat transactions, instilling confidence among donors in the management and distribution of their contributions.

2.9 CHAPTER SUMMARY

This chapter furnishes an overview of Badan Amil Zakat Nasional (BAZNAS) and its national operations, with a specific focus on BAZNAS North Sumatera. It outlines the Zakat institutions in Indonesia, highlighting the pivotal roles that BAZNAS and LAZ play in distribution and collection processes. The government-appointed organisation for managing Zakat, BAZNAS, was established in 2001 with the goal of improving distribution and streamlining collection to reduce poverty. After a summary of the certification process and organisational structure, information about the opportunities and difficulties associated with Zakat collection in Indonesia is provided. The chapter describes the various Zakat distribution programmes run by BAZNAS and emphasises

the important role that LAZ plays. The subsequent discussion focuses on BAZNAS's digitalisation initiatives, which include collaborations with outside services for distribution and collection, online platforms, and mobile applications. The chapter ends with a focus on BAZNAS North Sumatera, highlighting the region's difficulties in realising its potential for Zakat and the need to improve performance in order to effectively eradicate poverty.

CHAPTER THREE

LITERATURE REVIEW

3.1 INTRODUCTION

This chapter presents an overview of blockchain technology and its development to date. This chapter also includes an overview of Zakat and its poverty alleviation function. It further reviews the variables used from the dependent variables (trust in Zakat institutions), the mediating variable, which is blockchain technology, and the attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice.

3.2 OVERVIEW OF ZAKAT

3.2.1 The Meaning of Zakat

Zakat, derived from Arabic, conveys the notions of rising or increasing, and when it comes to people, it means changing or developing (Qardawi, 1999). Under Sharia, the term Zakat denotes the divinely allocated portion of resources, categorised in a rightful manner. Islam teaches that everything belongs to God, so ownership must be purified for those who want it. Some Islamic scholars asserted that Zakat not only cleanses the inner soul, but also fosters diversity, and facilitates the development of the underprivileged (Qardawi, 1999). Islam, a religion of equilibrium, considers suffering to be a social and ideological challenge. It is called a global issue because the consequences are felt throughout society. This is also an ethical issue because it affects the performance of one's socio-religious obligations towards society and Islam and can even lead to kufr. In light of this, a hadith recounts Prophet Muhammad (pbuh) seeking refuge from the adversities of poverty.

> *"O Allah! I seek refuge with You from laziness and geriatric old age, from all kinds of sins and from being in debt; from the affliction of the Fire and from the punishment of the Fire and from the evil of the affliction of wealth; and I seek refuge with You from the affliction of*

poverty, and I seek refuge with You from the affliction of Al-Mesiah Ad-Dajjal. O Allah! Wash away my sins with the water of snow and hail, and cleanse my heart from all the sins as a white garment is cleansed from the filth, and let there be a long distance between me and my sins, as You made East and West far from each other."

(Hadith– SahihBukhari)

In general, the act of paying Zakat is envisioned to serve several purposes within the context of Islamic finance. These include the purification of the income of Zakat payers, fostering reconciliation between the payers and the recipients of Zakat (known as *Mustahik*), addressing the fundamental needs of individuals who are impoverished and in need, as well as offering potential solutions to prevalent social issues such as poverty, unemployment, indebtedness, and inequitable distribution of income (Dogarawa, 2012; Qardawi, 1999). Zakat, a practice that has been observed since the inception of the Muslim community in Mecca, has traditionally been implemented with the objective of providing assistance to individuals who are impoverished and in need (Qardawi, 1999). In accordance with the principle of brotherhood in Islam, Muslims were fervently urged to assume the responsibility for the welfare of the impoverished members within their community. According to the scriptural text of Surah AlMuddahthir, specifically verses 38-45, it is evident that the failure to provide sustenance to the impoverished and destitute is cited as a contributing factor for the consignment of individuals to the realm of Hell. While the practice of Zakat was observed in Mecca, its obligatory status in Medina was realised only after the hijrah.

Muslims are obligated to pay Zakat, one of the five "pillars" of Islam. This obligation involves a flat rate of 2.5% on business profits and assets, including gold, capital, and savings (Gambling & Karim, 1986; Hamid et al., 1993). Mohamed (2007) argued that Islam mandates its adherents to pay Zakat as a means to assist the needy in meeting their most fundamental needs. According to Mohammed (2007), Islam requires its adherents to pay Zakat to help the poor meet their basic needs. Unlike traditional taxes, Zakat is perceived by Muslims not merely as an obligatory levy, but as a form of 'cleansing' (Gambling & Karim, 1986).

Zakat is one of Islam's five essential pillars and is mandatory for all Muslims. Zakat is a system that can ease poverty and narrow the rich-poor gap. If Zakat can be managed effectively, Zakat collection can be maximised against income tax collection (Zainal et al., 2016). Zakat is one of the tools for the distribution of property between Muslims because the properties reach a certain amount (*nishab*) and time (*haul*). It stops concentrated wealth only for a few people (Yusoff & Sorfina, 2012). As reported in QS At Taubah: 60, Zakat is given to specified beneficiaries (*Ashnaf*) or *Mustahik*, namely the poor, the needy, the administrator of Zakat (*amil*), new Muslims (*muallaf*), the slaves (riqab), the debtors for their needs (*gharimin*), in the cause of Allah (*fi sabilillah*), and travellers for Allah's sake (*Ibnu sabil*). The above-mentioned ashnaf primarily comprise individuals who have no purchasing power to satisfy their needs, with a minimum living requirement to be fulfilled. As Zakat is very important, every Muslim who is reluctant to pay Zakat is declared war by Caliph Abu Bakr and his companions. During that period, Zakat served to fund the authorities (Khilafah). However, nowadays, Muslims have various avenues to pay Zakat: directly to the ashnaf or utilising the Zakat institutions, while the latter offering additional benefits.

3.2.2 Types of Zakat

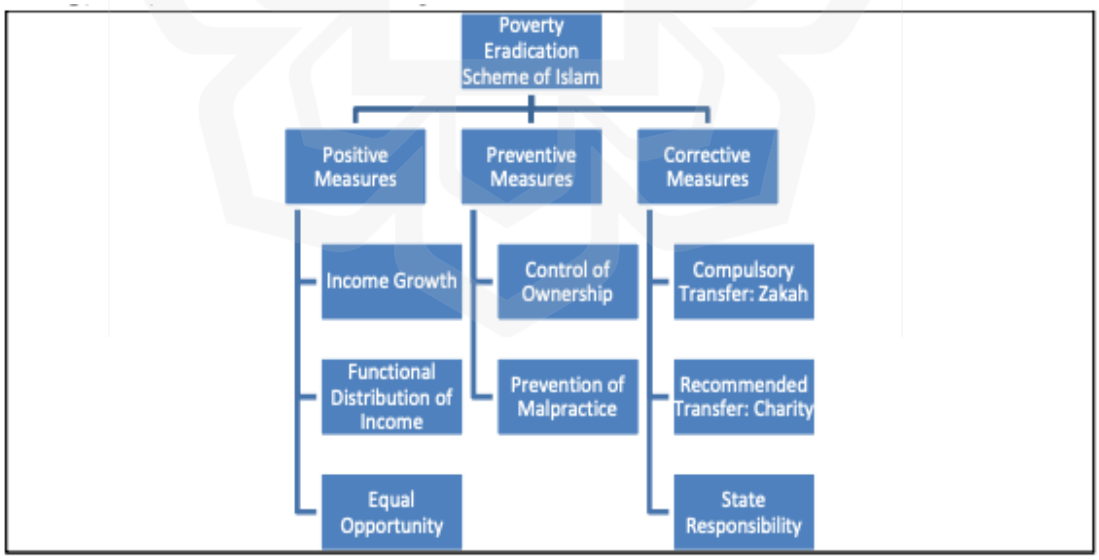
There are generally two types of Zakat: i) Zakat al-fitror Zakat, and ii) Zakat almal, or Zakat on wealth. In 2 AH (after Hijra), Zakat al-Fitr became compulsory for all Muslims. It is a small amount for all Muslims to pay during the fasting month (Ramadhan). Conversely, Zakat al-mal has been a requirement since 9 AH and is payable throughout the year if an individual's annual income (haul) exceeds the exemption limit (nisab) (Olanipekun et al., 2015)

Al-Quran does not explicitly describe the Zakatable products or specify the applicable Zakat percentage. Instead, Prophet Muhammad (PBUH) is tasked with elucidating these aspects either explicitly or through illustrative examples for the followers based on the Quran's general directives. While the number and the Zakatables are not clearly specified in Al-Quran, the eight categories of Zakat recipients are listed, namely: i) hardcore; ii) poor; iii) amil; iv) mu'allaf; v) riqab; vi) gharmin; vii) fi-sabilillah; and viii) ibnussabil. In the Holy Quran, Allah (SWT) says:

"Alms are for the poor and the needy, and those employed to administer Zakat (amil), for those whose hearts have been reconciled to the Truth, for those in bondage and in debt, in the cause of Allah and for the wayfarer" (9:60)

3.2.3 Zakat and Poverty Alleviation

Zakat is one of the most effective instruments available to reduce poverty. Sulaiman (2003) stated that Zakat plays an important role not only in the economy, but also in the moral and social well-being of a society. Morally, Zakat promotes the sharing of wealth and eliminates greediness. Socially, it helps to reduce poverty within the community (Gambling & Karim, 1986). According to Hassan (2010) and Sadeq (1997), three are three different ways to end poverty in accordance with Islamic perspectives: i) positive measures, ii) preventive measures, and iii) corrective measures. Sadeq's (1997) poverty eradication strategies are summarised in the figure below.



Source: Poverty Eradication Scheme of Islam (Sadeq, 1997, p. 121)

Figure 3.1 Poverty Eradication Scheme of Islam

As seen in Figure 3.1 above, one of the poverty eradication correction steps is paying Zakat. In the Holy Quran, the word "al-zakah" is mentioned thirty times (Qardawi, 1999). In Shari'ah, Zakat refers to the redistribution of wealth that God has prescribed to the deserving category of people, while Zakat literally means growing and increasing. Besides eradicating poverty, Zakat aims at eliminating Muslims' greed and encouraging socially-oriented behaviour. Overall, Zakat payments are expected to purify the income of the payors, balance the payers' hearts, satisfy the basic needs of the poor and the needy, and address social problems such as poverty, unemployment, debt, and unequal distribution of income (Dogarawa, 2012).

Zakat has traditionally been practiced since Mecca's early Muslim culture, the main purpose of which is to help poor and vulnerable people (Qardawi, 1999). In keeping with the definition of brotherhood in Islam, Muslims have been strongly encouraged to care for the needy in their society. One of the reasons these people are sent to Hell is, as stated in Surah Almuddahthir, verses 38-45, because the poor and needy are not properly fed. While Zakat was practiced in Mecca earlier, it was only compulsory after Medina. According to Rahman and Ahmad (2010), the Zakat distribution system in general is still based on a daily form of direct payment where Zakat money is given to *Mustahik* monthly or annually. However, several cases showed that direct payments decreased the motivation for *Mustahik* to operate and eventually made them dependent on Zakat funds.

Numerous studies affirm Zakat's vital role in poverty alleviation (Ali & Hatta, 2014; Dogarawa, 2012; Aida et al., 2012; Hassan & Khan, 2007; Nurzaman, 2010; Yumna & Clarke, 2009). This significance is further highlighted in the United Nations 2030 Sustainable Development Agenda, advocating for urgent action to eradicate poverty in all its aspects and dimensions, including extreme poverty, within both developed and developing countries (UN, 2015).

Zakat in Islam is acknowledged as one of the Muslim Ummah's main poverty eradication mechanisms. Zakat plays a very strategic role in Ummah growth in Indonesia. Indonesia is the most populous Muslim nation and has been growing rapidly in Zakat over the past decade. This can be seen from both the Zakat selection

and distribution sides, showing tremendous progress. Indonesia, however, still faces many challenges, including the large gap between Zakat's potential and its actual collection (Hafidhuddin & Beik, 2010).

3.2.4 Zakat and Blockchain

Zakat is typically distributed through the programmes of its Zakat institutions, but there has been a growing inclination in using blockchain technology to streamline the process and increase transparency. Blockchain is a decentralised, digital ledger that can be used to record transactions securely and transparently. In recent years, it has gained widespread attention for its potential to disrupt various industries, from finance to healthcare. Its ability to provide secure and transparent transactions has made it an appealing choice for implementing Zakat payments and distribution. The adoption of blockchain for Zakat holds promise in addressing some of the challenges associated with traditional Zakat distribution. These challenges include a lack of transparency, corruption, inefficiency, and delays. By using blockchain, Zakat organisations can ensure that the funds are being distributed to the rightful recipients in a transparent and efficient manner.

Previous studies suggest that blockchain can be used to improve Zakat institutions in various ways. Millatina et al. (2022) uncovered that blockchain Zakat programmes offer various benefits, including achieving targets more effectively, avoiding overlap, developing Zakat more systematically, monitoring more effectively in planning, organising, actuating, and evaluating nazhir Zakat, and contributing to short-, medium-, and long-term national socioeconomic objectives. Santoso et al. (2020) found that the use of ICT can heighten people's awareness of paying Zakat; the use of blockchain technology will increase the credibility value of institutions; and transparency will encourage people's belief in and trust in the Zakat institution. Zulfikri et al. (2022) found that trust in Zakat institutions can be enhanced through the use of blockchain technology. Rejeb (2020) found that the integration of the blockchain and one of its important components, namely the smart contract, in the management of the compulsory Islamic charity Zakat can yield substantial benefits

and technical contributions. Therefore, blockchain can be used to improve Zakat institutions in terms of efficiency, transparency, and trust.

3.3 TRUST

3.3.1 Trust Definition

Trust is a multidisciplinary term with different meanings (Grimmelikhuijsen, 2011). Studies provide different perspectives on the definition of trust. Lewicki, McAllister, and Bies (2009), for instance, described trust as confidence and a positive perception of others, and mistrust as suspicion and negative perceptions of others' actions. From these meanings, trust is seen as another's perceived faith. Saputra (2020) refined this notion, defining trust as the level of confidence a trustor has in a trustee's ability to provide expected results in an interaction. Özen (2019), in addition, noted that trust is a psychological and sociological phenomenon that affects different areas of life, including social and economic interactions. Collectively, these studies suggest that trust entails a level of confidence or reliance on another party, often in a vulnerable position, with the goal of attaining a favourable gain or outcome.

Previous researchers in various disciplines, such as sociology, psychology, management, economics, and political science, have shaped their definitions of trust based on their perspectives (Armstrong & Yeein, 2001; Mayer et al., 1995; Robinson, 1996; Rotter, 1967). Therefore, trust assumes varied meanings, each purpose carrying distinct effects and impacts (Triyuwono, 2004).

3.3.2 Trust in Zakat Institutions

The concept of trust holds significant importance within societal contexts (Abdul-Rahman & Hailes, 2000). Trust has been previously characterised by researchers as "a broad sense of trust in others". Sahidi (2013, as cited in Zainal et al., 2016) conducted a study that highlights the significance of Zakat institutions in delivering high-quality services to the community. This factor plays a crucial role in attracting and motivating entrepreneurs to fulfil their Zakat obligations. BAZNAS, being a non-profit

organisation, heavily relies on trust in order to effectively accomplish its objectives. According to Handriana (2016), *Muzakki*'s level of trust in the organisation affects his intention to maintain LAZ (Lembaga Amil Zakat). According to the study conducted by Yang, Brennan, and Wilkinson (2014), a charitable organisation is considered trustworthy when it successfully fulfils the expectations of the general public. Therefore, it is imperative for Lembaga Amil Zakat (LAZ), including BAZNAS, to diligently assess and meet the expectations of the general populace in order to establish a sense of trust among the public. The establishment of trust would enhance the *Muzakki's* dedication to fulfilling their obligation to pay Zakat to Zakat management institutions, thereby ensuring the long-term viability and continuity of the programme. People have more confidence in the payment of their Zakat funds as a result of LAZ's dependability towards Zakat institutions.

Past studies also suggest that trust plays an important role in Zakat institutions. Zainal et al., (2016) proposed a model that identifies reputation, satisfaction of Zakat distribution, and service quality as factors that influence stakeholder trust in Zakat institutions. Meanwhile, Bin-Nashwan et al., (2021) found that trust in Zakat institutions moderates the relationship between socio-economic determinants and Zakat compliance decisions among entrepreneurs. Next, Aziz and Anim (2020) identified disclosure practice and stakeholder management as factors that have a significant relationship with trust among Muslim business owners in Malaysia. Finally, Wardani (2022) suggested that organisational trust, along with good corporate governance and knowledge quality, positively affects the reputation of Zakat management institutions in Indonesia. Overall, these studies suggest that trust is a crucial factor in promoting compliance and maximising the benefits of Zakat institutions.

An examination of the relevant past studies showed that reputation, Zakat distribution satisfaction, and quality of service influence trust. Furthermore, a study done by Zainal et al. (2016) showed that the greater the reputation, satisfaction of Zakat distribution, and service quality factors, the higher the trust of stakeholders in Zakat institutions, and vice versa.

3.4 ATTITUDE DETERMINANTS INFLUENCE TRUST IN ZAKAT INSTITUTIONS

3.4.1 Attitude Determinants

Wolf et al. (2020) described attitudes as summary evaluations of people, groups, ideas, and other objects, reflecting whether individuals like or dislike them. Meanwhile, Eagly and Chaiken, (2007) defined attitude as a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour. Meanwhile, a determinant is a factor that influences the outcome of a research study. Determinants can be individual, environmental, or social factors. Therefore, attitude determinants refer to the factors or variables that influence or shape an individual's attitude towards a particular object, person, idea, or situation. Attitudes are an individual's evaluation, feelings, or beliefs about something, and understanding the determinants helps explain why people develop certain attitudes. In this section, four attitude determinants that affect trust in Zakat institutions were found. These factors were grounded in a comprehensive analysis of data gathered from previous empirical studies.

3.4.2 Reputation

The influence of reputation on trust in Zakat institutions is substantial, according to a study conducted by Mukhibad et al. (2019). The exploration of reputation within profit organisations has been extensively examined in the economic and sociological literature, resulting in the formulation of various definitions. According to Gray and Balmer (1998), reputation can be conceptualised as the cumulative evaluation of an organisation by its stakeholders, which is shaped over time through consistent performance and communication. In their study, Richard and Zhang (2012) defined reputation as the comprehensive perception that stakeholders hold regarding a company’s ongoing performance. The Concise Oxford Dictionary’s definition of reputation agrees with Zainal et al. (2016). The dictionary defines reputation as the collective perception or belief regarding the character or status of an individual or entity. According to a study by Abratt and Kleyn (2012), customer’s prior experiences

with a company's products and its reputation have an impact on how much trust they have in it. Accordingly, the ultimate factor in satisfying consumer expectations and demands is the reputation of a company.

According to Jayanto and Munawaroh (2019), there is still a lack of optimism about Zakat accumulation due to the lack of *Muzakki* interest in the payment of Zakat. Many *Muzakki* therefore distribute their Zakat directly to *Mustahik*, causing injustice among *Mustahik*. Jayanto and Munawaroh (2019) revealed that reputation, financial statement transparency, religiosity, and trust have a positive and significant effect on interest in paying Zakat for their profession. One of the variables affecting the low level of trust of *Muzakki* in the Amil institution is the reputation of the institution. This low level of trust is due to the poor reputation and transparency of Zakat institutions (Taha et al., 2017). This is because institutions with a good reputation would boost their image, increase the wish to pay Zakat through the Zakat institutions in question (Saad & Haniffa, 2014), and increase customer trust (Ali et al., 2017).

The empirical evidence highlighted the pivotal role of reputation as a determinant of attitudes. These studies consistently emphasised the significance of reputation in shaping individuals' perceptions and evaluations. Collectively, the findings underscored the importance of considering reputation as a key factor influencing attitudes across various domains. For instance, Jung and Seock (2016) conducted a study which revealed that a negative corporate reputation has the potential to diminish consumers' brand attitudes and subsequently affect their purchase intentions. Zhou and Whitla (2013), in addition, highlighted the significance of consumers' evaluation of a celebrity endorser's moral reputation, as it plays a critical role in shaping their response to negative celebrity publicity. In a separate investigation, Merchant et al. (2015) discovered that a university's reputation and history have an impact on prospective students' attitudes. However, Anderson and Shirako (2008) uncovered a more nuanced relationship between individuals' reputations and their history of behaviour, suggesting that the association is more pronounced for individuals with greater visibility and recognition. In summary, these scholarly articles collectively suggested that reputation can indeed exert an impact on

individuals' attitudes, but the specific nature of this influence is contingent upon various contextual factors and the characteristics of the individuals involved.

3.4.3 Satisfaction of Zakat Distribution

The success of an organisation, particularly one that operates in the service industry, hinges upon the attainment of customer satisfaction. Oliver (1980) posited that satisfaction can be conceptualised as a market assessment aimed at aligning customer preferences with the actual service provided by an organisation. In order to uphold the efficacy of Zakat and promote the adherence of Muslims to Zakat payment through Zakat institutions, it is imperative to enhance the level of satisfaction with Zakat distribution (Ellany & Lateff, 2011). In their study, Idris and Ayob (2002) found that a lack of trust in Zakat institutions is a significant factor contributing to non-compliance. This lack of trust is primarily attributed to concerns regarding transparency and inefficiencies in the management of Zakat distribution. There is a correlation between the degree of adherence to Zakat and the level of satisfaction that Zakat institutions experience. Considering the points made above, it is reasonable to assume that a stakeholder who is generally happy with how Zakat is being spent will also have more faith in Zakat institutions, and conversely.

Zainal et al. (2016) conducted a study unveiling that satisfaction with Zakat distribution emerges as a crucial factor in the development of stakeholder trust in Zakat institutions. The author also posited that satisfaction with Zakat distribution is a determinant of stakeholder trust with Zakat institutions. These findings suggested that satisfaction with Zakat distribution plays a pivotal role in shaping trust in Zakat institutions. In a parallel study, Muhammad et al. (2016) identified the dimensions of trust in Zakat institutions as public governance quality, quality of Zakat distribution, service quality, and perceived board capital. Ghazali (2016) found that shared values, effective communication, non-opportunistic behaviour, and perception of Zakat distribution were the antecedents to trust in Zakat institutions. Synthesising these studies, it can be concluded that satisfaction with Zakat distribution significantly influences the development of trust in Zakat institutions.

The findings from these empirical investigations underscored the significance of considering satisfaction as a key factor influencing attitudes across diverse domains. In an extensive case study, Awan and Islam (2015) examined MCB Bank Ltd. and discovered a robust and favourable association between employee satisfaction, attitude, and performance. This study highlighted the intrinsic connection between employee satisfaction and attitudes and their subsequent impact on individual performance within the organisational context. In a similar vein, Ostroff (1992) explored the interplay between employee satisfaction, other job-related attitudes, and organisational performance. The findings of this study further supported the notion of a positive association between employee satisfaction/attitudes and organisational performance. However, Aladwani (2003) presented a counter-perspective, challenging the conventional assumption of attitude-behaviour consistency within the literature on information satisfaction. She suggested that individuals' overt responses to an attitude object may not necessarily be directly linked to their previous attitudes.

Evidently, these studies collectively emphasised the significance of satisfaction Zakat distribution as influential factors that impact individuals' attitudes towards their work, subsequently affecting performance outcomes.

3.4.4 Service Quality

In the context of the Zakat field, service quality pertains to the effectiveness with which Zakat institutions allocate and manage their resources to ensure appropriate distribution to *Mustahik* individuals. Numerous scholars have delved into research on the subject of service quality, conceptualising it as the disparity between the anticipated level of customer service and the actual perceived performance (Ghani et al., 2012). According to Parasuraman et al. (1985), when there is a discrepancy between service expectations and service performance, the perceived service quality is deemed unsatisfactory, leading to customer dissatisfaction. The provided service and management exhibit high levels of quality. According to Hazra and Srivastava (2009), the preliminary findings indicate that the provision of high-quality and reliable service contributes to the development of customer trust. Moreover, it is important to note that

trust plays a significant role in nurturing lasting relationships between companies and their customers (Garbarino & Johnson, 1999). Hence, the establishment and cultivation of relationships heavily rely on the trust vested in them by customers (Parasuraman et al., 1985).

According to empirical evidence, a number of factors, including service quality, affect trust in Zakat institutions. Muhammad and Saad (2016) conducted a study that established the reliability and validity of items such as public governance quality, quality of Zakat distribution, service quality, and perceived board capital in determining trust. Similarly, Mokhtar et al. (2020) found that factors such as reliability, assurance, and brand reputation had a significant relationship with customer satisfaction. Zainal et al. (2016) investigated the role of service quality in developing stakeholder trust in Zakat institutions and identified it as a determinant of trust. Thus, the collective findings of these studies indicate that service quality and brand reputation are critical factors in shaping trust within the context of Zakat.

A number of studies have suggested service quality dimensions deemed important for Zakat institutions. Mokhtar et al. (2020) found that service quality and brand reputation are important dimensions of Zakat institutions. Pakurár et al. (2019) identified four dimensions of service quality that affect customer satisfaction: assurance, reliability, responsiveness, and empathy. Meanwhile, Afifah and Kurniawati (2021) pinpointed compliance, responsiveness, and tangibility are important dimensions of service quality that affect customer satisfaction. According to the findings of Adiwijaya and Supriyanto (2020), a Zakat institution must fulfil specific criteria in order to be recognised as a well-governed institution. These criteria encompass aspects such as distribution criteria, efficiency, and financial reporting. Importantly, good governance is intricately linked to satisfaction.

According to Sahidi (2013, as cited in Zainal et al., 2016), the role of Zakat institutions in providing quality service to the community is an important factor in attracting and encouraging entrepreneurs to pay Zakat. He also stated that service quality is considered when an organisation meets customer expectations before and

after services. Moreover, Jaffri et al. (2020) showed empirical evidence that Zakat compliance is improved by improving service quality.

The findings presented in these papers consistently demonstrated the crucial role of service quality in shaping people's perceptions, evaluations, and overall attitudes. Jiang et al. (2016) argued that management commitment to service quality directly influences service quality during the service delivery process, while also highlighting the concept of emotional contagion, where customers catch the emotions of employees. Meanwhile, Etgar and Fuchs (2009) noted that patients' evaluations of service quality significantly impact their attitudinal responses. In order to demonstrate the significant impact of service changes on customer evaluations of service quality, Bolton and Drew (2016) built a longitudinal model. This influence was observed to occur through the alteration of customer perceptions regarding current performance and disconfirmation. Lastly, Douglas and Connor (2003) discerned a gap between managers' perceptions of consumers' expectations and the actual consumers' expectations, emphasising the necessity for strategies aligning with consumers' expectations of service quality. Collectively, these papers highlighted the significance of factors such as management commitment, emotional contagion, patient evaluations, service changes, and alignment with consumer expectations in shaping individuals' attitudes towards service quality.

3.4.5 Disclosure Practice

Information disclosure policies are recognised as an important means of influencing the external perception of organisations by their management (Suchman, 1995). When the legitimacy of an organisation is at risk, the legitimacy theory contends that disclosure should be used by such an organisation to influence its stakeholders' perceptions. In the context of Zakat institutions, it is posited that high-quality information disclosure enhances public's confidence in such institutions. There has been intense pressure in the United States and the United Kingdom for greater disclosure of charity activities to restore the declining public trust and confidence

instigated by recent financial scandals involving both corporations and charities (Cordery & Baskerville, 2007).

Brammer and Pavelin (2006) claimed that information disclosure serves to reduce uncertainty between transacting parties and builds trust based on decision-making usefulness. While empirical studies on for-profit organisations focus on the public disclosure environment (Wiedman, 2000), the impact of disclosure, and the attributes of disclosure, studies on charities place greater emphasis on the users' information needs and the type of information that charities disclose (Oladimeji Abioye Mustafa et al. 2013).

The literature indicates that disclosure practices play a crucial role in shaping trust in Zakat institutions. In an empirical study, Samargandi et al. (2018) demonstrated a positive association between disclosure practices and the trust of Zakat payers in Zakat institutions. Similarly, Aziz and Anim (2020) found that disclosure practices and stakeholder management have a significant positive relationship with trust. These findings directly align with our research questions, suggesting that disclosure practices are a critical determinant of trust in Zakat institutions over time.

In addition, Muhammad and Jaffri (2016) validated the items of public governance quality, quality of Zakat distribution, service quality, and perceived board capital, which are closely related to trust in Zakat institutions. Although not directly related to trust, these findings suggest that these items may influence trust in Zakat institutions over time. All of these studies show that disclosure practices, along with factors such as the quality of public governance, the quality of Zakat distribution, the quality of service, and how much board capital is perceived to have, are crucial factors that impact trust in Zakat institutions.

The prevailing literature presents a diverse range of findings concerning the impact of disclosure practices on individuals' attitudes. Kitora and Okuda (2008), for example, conducted a study revealing a positive correlation between extensive disclosure by firms and corporate social performance, as well as reputation. Their findings suggested that firms employ extensive disclosure practices as part of their corporate social responsibility initiatives. In a separate study by Zimmer et al. (2010),

it was found that information relevance plays a crucial role in determining the extent of disclosure. Moreover, the study highlighted that both relevance and trust can mitigate perceived risks associated with disclosure, ultimately increasing individuals' intentions to disclose information. Meanwhile, Studdert et al. (2010) assessed the attitudes of healthcare professionals towards open disclosure and its legal implications. Their research did not prove that disclosure practice influences attitudes. Another investigation by Boerman and Van Reijmersdal (2016) discovered that awareness of the disclosure of sponsored content is generally low.

Evidently, the existing literature presents a mixed set of findings regarding the role of disclosure practices as determinants of attitudes. While some studies indicated significant effects, others yielded inconclusive or contrasting results. The diversity in findings suggests a complex relationship between disclosure practices and attitudes, necessitating further investigation and exploration to elucidate the underlying mechanisms and conditions that influence the impact of disclosure on individuals' attitudes.

3.5 OVERVIEW OF BLOCKCHAIN TECHNOLOGY

3.5.1 Blockchain Technology

Satoshi Nakamoto created bitcoin, a type of digital currency, in 2008; it is based on cryptography (Abubakar et al., 2018). However, Kamaruzaman et al. (2018) argued that Satoshi Nakamoto is a fictitious name. Regardless, Nakamoto published a paper titled “Bitcoin: A Peer-to-Peer Electronic Cash System” to describe a peer-to-peer version of electronic cash that would allow online payments to be sent directly from one party to another without going through a financial institution or intermediary (Crosby et al., 2016).

While the bitcoin innovation was thrilling and ground-breaking, the mechanism behind how it works was flawless. Soon after the white paper was released, it became obvious that the core mechanical invention is not the digital currency, but the technology operating it. As part of the bitcoin operation, Nakamoto

also developed the ledger, which he named ‘A Chain of Blocks” and was later termed blockchain (Morkunas, Paschen, & Boon, 2019). Therefore, the connection between blockchain and bitcoin is that blockchain is used as a public ledger for bitcoin currency (Zubaidi & Abdullah, 2017).

The blockchain operates as a decentralised transaction ledger that can be used to create, authorise, and send transactions to other nodes in the same network (Tama et al., 2017). It is an amalgamation of cryptography, peer-to-peer networking, and game theory. Originally designed to track the database underlying the cryptocurrency Bitcoin, blockchain has evolved into a widely recognised distributed ledger with a software algorithm to record transactions as a chain of blocks with trustworthiness and anonymity (Laroiya et al., 2020).

Although blockchain is commonly related to bitcoin, somehow many other blockchain applications have been developed since Nakamoto first introduced it. Despite being a ledger for digital currencies, the blockchain application extended further, impacting the economy, financial sector, and beyond (Crosby et al., 2016; Zubaidi & Abdullah, 2017). According to Lakhani and Iansiti (2017), blockchain has gained the status of replacing the next internet and is transformative, enabling organisations to modify how they generate and take value.

Since its inception, blockchain has gained popularity as a tool with a decentralised transaction ledger that is used to register, confirm, and send payments or contracts. The application of blockchain technology has extended far beyond financial transactions and into any transaction and application, i.e., healthcare, utilities, real estate, and the government (Christidis & Devetsikiotis, 2016). Wang et al. (2018) said that although blockchain is famous for bitcoin, its applicability extends to diverse applications beyond cryptocurrencies, enabling payments to be executed without the need for banks or intermediaries. Nonetheless, Morkunas et al. (2019) mentioned that blockchain is expected to disrupt existing business models and propose new value creation.

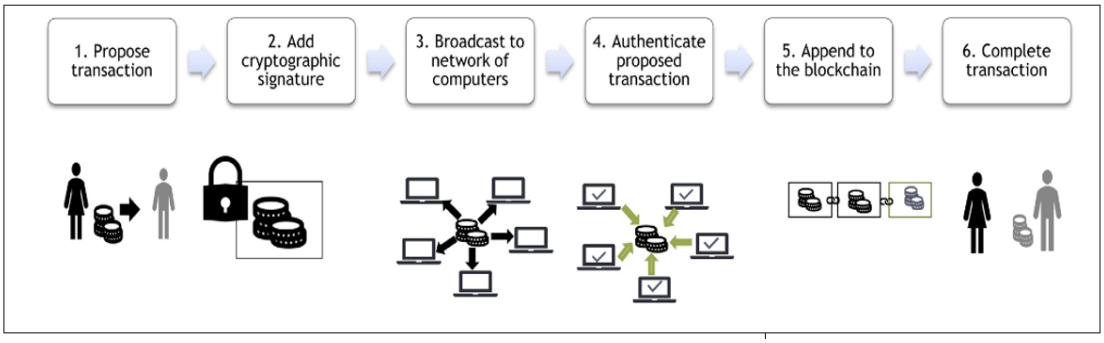
3.5.2 How Blockchain Technology Works

Morkunas et al. (2019) explained that blockchain keeps a decentralised digital database known as a distributed ledger, which is maintained and updated by a network of computers that verifies a transaction before it is approved and added to the ledger. Blockchain allows each party to exchange ownership of a digital asset in a real-time and immutable peer-to-peer system without the use of intermediaries. Immutability means the data cannot be deleted or edited. According to Christidis and Devetsikiotis (2016), parties can transact even though they do not trust each other; hence, the blockchain enables *trustless* networks.

The absence of a trusted intermediary means faster reconciliation between transacting parties. According to Wang et al. (2018), blockchain works in a decentralised environment that is built by advanced technology such as cryptographic hashes, digital signatures, and distributed consensus mechanisms. With blockchain, transactions can take place in a decentralised fashion. As a result, blockchain can maximise cost savings and improve efficiency. There are three main activities in blockchain: validate entries, safeguard entries, and preserve historic records (Crosby et al., 2016).

Morkunas et al. (2019) outlined six steps involved in a transaction between two parties using blockchain. Step 1: As two parties initiate the transaction, it will be changed as a hashed transaction bid and as a contestant to be written on the ledger. The information contains basic information such as the date and time, sender, receiver, asset type, and quantity. The proposed transaction is equipped with a unique cryptographic signature, making the record integrated and authenticated. Step 2: Broadcasting the proposed transaction to a network of distributed computers for processing and verification. Step 3: The computers in the network will do the authentication of the transaction. Step 4: When the transaction is verified and authenticated, it is added to the digital ledger. Step 5: This is the completion of the asset transfer between the two parties. Step 6: Every new transaction is connected to and recorded in the previous transaction; hence, it provides a thorough, unalterable,

and verifiable history of every transaction ever made on this blockchain. All the steps are depicted in Figure 3.2 below.



Source: Morkunas et al. (2019)

Figure 3.2 The Six Steps of Asset Exchange Using Blockchain

3.5.3 Smart Contract

According to Sillaber and Waltl (2017), Nick Szabo introduced the term smart contracts and first described how contracts between two parties can be secured on computers without requiring any third party:

> "A set of promises, including protocols within which the parties perform on the other promises. The protocols are usually implemented with programs on a computer network, or in other forms of digital electronics, thus these contracts are 'smarter' than their paper-based ancestors."

Kosba et al. (2016) stated that smart contracts should function as programmes run by all miners, permitting parties with limited awareness and trust in each other to transact securely. The proper implementation of these programmes is enforced by a consensus protocol.

As a result, a smart contract comprises three distinct components: the contractual agreements between the parties, the governance of the preconditions required for the contractual obligations to be fulfilled, and the contract's actual execution (Koulu, 2016).

Contractual arrangements between the parties: The requirements imposed by the contract are negotiated and implemented as a programme. Through their blockchain accounts (wallets), they are known as peers. Making decisions requires taking into account all of the inputs because of their logical relations and conditions. When the code is distributed and enforced, the blockchain record is updated.

Governance of preconditions: All nodes, miners, are able to participate in blockchain transactions. The preconditions have been checked.

Execution of the contract: If the conditions for executing the contract have been met, the contracts are finished, and the transactions are handled by the participating nodes, thus the contract is considered to be executed. The consensus protocol guarantees correct execution, making smart contracts inherently self-regulating. This means that digital assets are distributed according to pre-negotiated terms.

3.5.4 Life Cycle of Decentralised Smart Contracts

According to Sillaber and Waltl (2017), the life cycle of a smart contract typically consists of four broad phases: creation of the smart contract, freezing of the smart contract, execution of the smart contract, and finalisation of the smart contract.

Create: The creation phase can be divided into an iterative contract negotiation phase and an implementation phase. All participating parties must have a wallet on the underlying ledger platform. The expressiveness of the underlying smart contract coding language limits the codification of the contract. The transformation of requirements into code requires several iterations between stakeholders and the programmer(s). Smart contracts will probably require many iterations between many iterations.

Freeze: After the smart contract has been submitted to the blockchain, it is persisted by the majority of the participating nodes. To prevent the flooding of the ecosystem with smart contracts, a fee has to be paid to the miners.

Execute: Participating nodes read contracts stored on the distributed ledger. The contract's integrity is validated, and the inference engine of the smart contract environment executes the code.

Finalise: After the smart contract has been executed, the resulting transactions and the new state information are stored in the distributed ledger and confirmed.

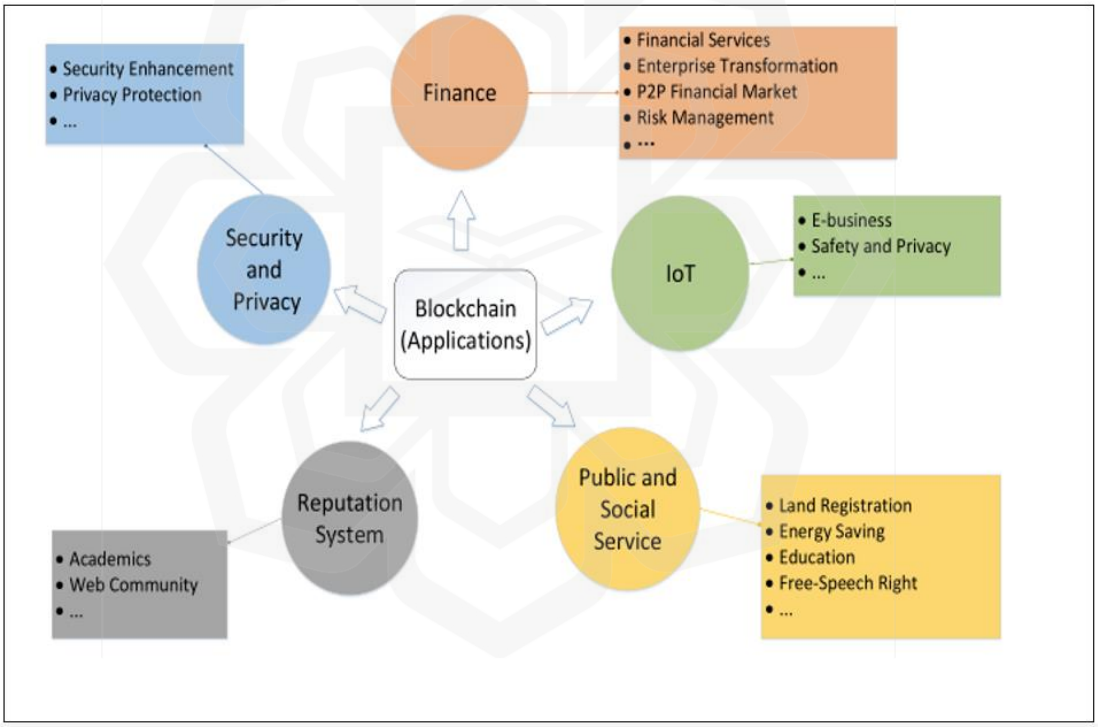
3.5.5 The Blockchain Technology Application

According to Drescher (2017, as cited in Elasrag 2019), providing a comprehensive overview of all blockchain applications is impractical. Hence, a concise selection of concrete blockchain application areas in which the technology is already used or may be used soon are:

- *Payments*: Managing ownership and transfer of digital fiat currencies.
- *Cryptocurrencies*: Managing ownership and creation of digital instruments of payment that exist independently from any government, central bank, or other central institution.
- *Micropayments*: Transfer of small amounts of money that would be too costly to use traditional means of transfer.
- *Digital assets*: Managing the creation, ownership, and transfer of digital items that have value in their own right or represent valuable goods in the real world.
- *Digital identity*: Proving identity and authentication based on unique digital items.
- *Notary services*: Digitising, storing, and verifying documents or contracts and proof of ownership or transfer.
- *Compliance and audit*: Auditing the business activities of people or organisations in regulated industries in an audit track.

- *Tax*: Calculating and collecting taxes based on transactions or sole ownership, reducing tax avoidance, or double taxation.
- *Voting*: Creating, distributing, and counting digital ballot papers.
- *Record management*: Creation and storage of medical records.

Meanwhile, Wang et al. (2018) categorised the application of the blockchain into five sections: finance, IoT, public and social services, reputation systems, as well as security and privacy. The representative application domains of blockchain are depicted in the figure below.



Source: (Wang et al., 2018)

Figure 3.3 Representative Application Domains of Blockchain

Accordingly, as of May 2019, approximately 44% of international companies have incorporated blockchain technology into their online transactions. Individuals and industries opt for blockchain due to its associated benefits, such as the following:

- *Transparency*

  Blockchain offers the most transparent technology, as all the participants in the network use the same shared distributed ledger. Hence, everyone can supervise the in-progress transaction, which will reduce any mismatched transactions.

- *Security*

  Blockchain offers secured transactions for its users. Each block creates a hash based on the data in the last block, thus making them fully interconnected with each other. Hence, when someone tries to alter a blockchain, all the information in the block will be damaged.

  - *Inexpensive*

    Blockchain does not require an office to perform a financial transaction, which will be costly, yet it is not necessary to pay a large commission to utilise the financial services.

  - *Secure Platform*

    Blockchain offers enhanced security to protect all the intellectual property on the new digital platform. Hence, this technology can create a digital certificate and a certificate of ownership. Start-up music companies that want to register their work to receive payment must first have used this technology strategy. These blockchain applications allow artists to add a digital signature to their work. By doing this, the artists get a worthy value for their work, and their work is still kept in the blockchain record.

  - *Creating a Better Contribution Economy*

    Blockchain technology offers a better sharing platform, a trusted trading network for suppliers and purchasers. Traders can slightly lower prices and make even more profit without intermediaries or third-party participation. The

technology, therefore, creates a trustworthy and transparent marketplace and a better economy.

- *Prevents Payment Scam*

  Blockchain Technology assists in preventing online payment scams. Both buyers and sellers can use smart contracts to buy and sell products. The fundamental reason Blockchain offers strong security is because a coin cannot be used for the next payment when it is spent. This is how corruption can be stopped. Since everything is accounted for and kept on track, including dealers and payment amounts, discrepancies or corruption are very difficult. Another reason for the technology's popularity is that if a transaction occurs between two parties, both parties are digitally signed to prevent any fraud.

- *Transactions in Minutes*

  In minutes, money or financial documents can be sent or received, thus saving time. Compared to a traditional third-party payment system, it will direct all documents to the clearing house for approval, causing downtime.

3.5.6 The Use of Blockchain Technology in the Zakat Industry

Financial technology companies include both start-ups and established financial institutions, and those investing in this space are attempting to replace and/or enhance the use of existing financial services provided by financial companies, corporations, and institutions. For this reason, Desto FinTech, a renowned company based in the US, introduced the i-Zakat service, which was the leading global company to manage Zakat companies (Ahmed & Zakaria, 2021). Additionally, it supports the management system, which makes attractive use of blockchains that strictly adhere to transparency, efficiency, and sustainability principles. In addition, i-Zakat prevents any potential misuse, dislocation, loss, theft, or other contributing factors to the lost fund and reduces the cost of operating a continuous work scheme that can last for generations to come. i-Zakat also reduces the cost of collecting funds (Ahmed & Zakaria, 2021).

An academy institute in Malaysia, namely the International Shari'ah Research Academy for Islamic Finance (ISRA), is actively seeking interested parties to pilot a blockchain project dubbed ZakatTech blockchain that will optimise the collection of Islamic charitable donations. The project is a collaboration between ISRA and SysCode Sdn. Bhd. (a software development company that specialises in the development of customised cloud-based business solutions) and will enable the tracking of funds throughout the entire process lifecycle, from donation to distribution. The primary objective is to boost community confidence, thereby increasing income and ensuring the effective distribution of Zakat to uplift the economic level of society (ISRA, 2019).

Blossom Finance, a company headquartered in the United States with a branch in Jakarta, Indonesia, has also successfully integrated blockchain technology into its operations. As a private company, it is offering a free service to help channel crypto Zakat payments from crypto-rich individuals to Zakat-eligible organisations in Indonesia (Yusof, et al., 2021). Based on its website, individuals should contact the company by email if they want to pay Zakat with their cryptocurrencies. Zakat payments in cryptocurrencies can be done by sending payment instructions to Blossom-controlled cryptocurrency wallets at an Indonesian cryptocurrency exchange. The cryptocurrency will be converted to Indonesian Rupiah by Blossom before being distributed to qualified non-profit and cooperative organisation partners. According to the company, it distributes the majority of its goods to the poor and needy, especially widows and orphans in Central Java and Sumatera. The service, to the extent that it has distinct steps that require Zakat self-calculation and e-mail communications, seems to be rather complex. It does not appear to provide an end-to-end software solution for donors and Zakat payers (Yusof et al., 2021).

According to the BAZNAS Report 2020, BAZNAS has partnered with DESTO to develop a Zakat application based on blockchain technology. The application is called i-Zakat and was launched for the first time in 2018 during the World Zakat Forum's (WZF) annual conference in Malaysia. This is one of the initiatives aimed at digitising the management of Zakat institutions. However, the implementation is still not running due to a lack of support from law and regulation by the Government of Indonesia (BAZNAS, 2021). Therefore, this study wanted to gain

the perceptions of Zakat payers in BAZNAS North Sumatera about implementing blockchain technology.

3.5.7 Legal Perspective of Blockchain and Cryptocurrencies in Indonesia

Blockchain technology is a type of technology that was created to support bitcoin, more commonly referred to as cryptocurrency. Individuals and organisations alike can benefit from blockchain technology's ability to secure data exchange and to make transactions between entities simpler and easier (Schaupp & Festa, 2018). In essence, cryptocurrency emerged as a digital asset, serving as a form of "currency" resulting from advancements in financial technology, facilitating payments or exchanges in the virtual world (Okhuese, 2017, as cited in Harryarsana, 2022).

Additionally, cryptocurrency can be regarded as a system employing cryptography to enable the distributed and decentralised transfer and exchange of digital currency (Dourado & Brito, 2014). Cryptocurrency is a peer-to-peer network that can also function as a distributed public database (as in blockchain technology), an internet protocol, or a digital asset. From these vantage points, cryptocurrency can be viewed as digital assets, a medium of exchange, a payment network, and other non-monetary applications (Everette et al., 2017, as cited in Harryarsana, 2022).

Satoshi Nakamoto introduced the first cryptocurrency, bitcoin, in 2008 (Widjaja, 2019). Following bitcoin, numerous other cryptocurrencies were introduced. Ethereum Ripple, NEM, and Litecoin were among the few (Dubey and Team, 2017). Bitcoin's market capitalisation was $64,36 billion as of August 15, 2017 (Sequant Capital, 2017). Nakamoto first introduced bitcoin as a peer-to-peer electronic payment system (Nakamoto, 2008). It then evolved into the blockchain, which records all transactions in a public ledger and manages all user data anonymously (Dubey & Team, 2017). Unlike bitcoin, ethereum is capable of running applications in addition to serving as a payment method. It is capable of creating self-enforcing and self-executing smart contracts. According to D'Alfonso (2016, as cited in Singhal and Patel, 2019) and Sequant Capital (2017, as cited in Widjaja, 2019), the user can

specify specific requirements that, if met, will result in the system automatically paying the user.

The Indonesian Financial Authority Service (OJK) issued Fintech Regulation in 2016. The regulation in question was OJK Regulation No. 77/POJK.01/2016 on Money Lending Services through Information Technology. Nonetheless, cryptocurrency is not addressed in the regulation. On August 16, 2018, the OJK published Regulation No. 13/POJK.02/2018 on Digital Financial Innovation in the Financial Service Sector. The Regulation primarily regulates the operation of digital financial innovations, which can be licenced only after successful trials in a regulatory sandbox (Widjaja, 2019).

Regulation No.19/12/PBI/2017 on Financial Technology Operations was also issued by Bank Indonesia (BI) in 2017. The regulation explicitly stated that virtual currency could not be used to pay, even though using a blockchain system was not expressly forbidden. In Indonesia, all payments, including payments through financial technology, are permitted only in the Rupiah. Regulatory sandbox trials are mandatory for all financial institutions seeking approval for new technology deployment. Only qualified individuals are allowed to use financial technology services (Widjaja, 2019).

Hence, from the explanation above, a series of Indonesian policies towards cryptocurrency so far seem to be sceptical about whether the cryptocurrencies' ecosystem can contribute to national financial stability and sound economic growth. Meanwhile, in its development, blockchain innovators continue to encourage the birth of blockchain-based tokens, more popularly known as "tokens," which are widely used as a representation of particular assets. Tokens are not dissimilar to their literal definition, which is "sign." Tokens are used to digitally "sign" items such as fiat money, coupons, and smart property. This has been intended to reduce the scarcity of digital assets on the blockchain (Miscione et al., 2018).

New tokens continue to be created and launched using open-source blockchain technology, each with its own unique attributes. The quantity of tokens and the range of complexity they represent--both of which have increased recently—provide a clear illustration of this. The above was the genesis of regulatory problems in the creation

of token-related rules. The regulatory framework for tokens has been developed in a number of countries, with each type of token having distinct characteristics. However, the absence of a clear and distinct definition of token types creates legal uncertainty for stakeholders in Indonesia (Santoso et al., 2020).

3.5.8 Central Bank Digital Currency

Amid the uncertainty surrounding the legality of cryptocurrency, central banks and academics are debating on the feasibility of a central bank issuing a digital currency. According to a Bank for International Settlements (BIS) study published in January 2020, 70% of all global central banks are currently contemplating the issuance of their own digital central bank currency. According to the survey, a portion of the central banks, specifically 10%, expressed their intention to introduce a digital currency within a short-term timeframe of up to three years. Additionally, 20% of the central banks conveyed their plans to introduce such a currency within a medium-term timeframe of up to six years (Boar et al., 2020).

Central Bank Digital Currency (CBDC) is defined as a currency that is issued by a central bank; electronic, and decentralised peer-to-peer exchange. Going further, two distinct types of CBDC are distinguished by their accessibility: a widely accessible retail CBDC and a restricted-access wholesale application CBDC for settlement purposes (Wandhöfer, 2017). According to Lee et al. (2021), CDBC represents the next stage in the evolution of currency, progressing from metal-backed banknotes to fiat money. In a nutshell, the CBDC is a new class of central bank electronic liabilities designed for payment and value storage.

Additionally, 15% of the central banks believed that the introduction of CBDC was possible within the next three years (an additional 18 percent in the next six years). The trend is clear: an increasing number of central banks are investigating CBDCs and planning to launch their own digital currencies in the coming years. As a result, the introduction of the first CBDCs is only a matter of time (Klein et al., 2020).

Bank Indonesia is currently formulating the creation of a digital currency, or Central Bank Digital Currency (CBDC), contingent upon future needs. They will look at economic conditions and the digitalisation context that is being pushed by Bank Indonesia. Currently, BI has conducted a Rupiah CBDC study to see the potential and benefits of digital currency. The studies conducted an assessment to evaluate design, technology, and risk mitigation. In this assessment, Bank Indonesia collaborates with other central banks, engaging in coordination through international forums to further enhance the understanding of CBDC Rupiah issuance (Widyastuti, 2021).

3.5.9 Blockchain Technology as Mediating Variable to Enhance Trust

Blockchain technology has emerged as a revolutionary mediator in the dynamic realm of digital transactions and data exchange, with the potential to greatly enhance trust. Functioning as a decentralised and distributed ledger, blockchain serves as a secure and transparent system for recording information. Transactions are organised in a chronological sequence of blocks, forming an unchangeable chain. This cutting-edge technology promotes trust by offering a tamper-proof and verifiable log of transactions, eliminating the requirement for intermediaries, and guaranteeing transparency at every stage of the process. Blockchain enables secure and efficient transactions, acting as a catalyst for revolutionising traditional trust models. It provides a decentralised and resilient foundation for various industries and applications.

Blockchain technology has been identified as a key mediating variable to enhance trust in various domains. Wei et al. (2020), as well as Conway and Garimella (2020) both highlighted its potential in the context of the Social Internet of Things (SIoT) and business ecosystems, respectively. Wei et al. (2020) specifically emphasised the role of blockchain in addressing trust management issues in the SIoT, while Conway and Garimella (2020) provided a practical example of how blockchain can be used to enhance trust in complex business ecosystems. Giedrimas (2020) extended this discussion to the realm of software components and services, proposing a blockchain-based model for increasing trust in these entities. These studies

collectively underscored the potential of blockchain as a mediating variable to enhance trust in various domains.

3.6 IDENTIFICATION OF RESEARCH GAPS

Based on the literature review, a noticeable gap emerged in the empirical exploration of the mediating role of blockchain technology in fostering trust in Zakat institutions. Many previous studies advocate for the use of blockchain technology in charitable organisations for enhanced security, cost-effectiveness, and transparency (Carlos, 2019; Farooq et al., 2020; Lushi, 2019), but not in the area of Islamic finance, especially Zakat. Beik and Nurzaman (2019) discussed the Shari'ah perspective of cryptocurrency and its use in the payment of Zakat. It explained how blockchain technology can be used to facilitate Zakat payments and how it can be used to improve the management of Zakat. However, the study did not address the potential implications of using blockchain technology, specifically for Zakat payments.

Another previous study which discussed Zakat and blockchain was conducted by Friantoro et al. (2019). They analysed the strengths, weaknesses, opportunities, and threats of using financial technology, including blockchain, for collecting Zakat in Indonesia. Meanwhile, Sharif et al. (2019) provided suggestions and policy implications using blockchain. In a recent publication, Hamdani (2020) examined the interaction between *Muzakki* and *Nadzhir* within the context of Indonesia. The findings of this study underscored the significance of integrating blockchain technology into the management of Zakat for enhanced efficiency and effectiveness. Furthermore, Hudaefi et al. (2021) sought to extract knowledge related to Zakat administration during the pandemic from the information in a virtual environment. Whereas, the objective of the study conducted by Wahyudi et al. (2021) was to present a framework for enhancing financial transparency within the Amil Zakat Institution (LAZ) in Indonesia, utilising blockchain technology. Ibrahim Ahmed and B. Zakaria (2021) assumed certain fiqhi (Islamic jurisprudence) issues of using blockchain for managing Zakat distribution, such as establishing full possession or *tamlīk* (Ownership), transporting Zakat funds, and transferring Zakat funds directly

without ruler or government interference. Despite these valuable contributions, there remains a need for empirical investigations into the specific mediating effect of blockchain technology on enhancing trust in Zakat institutions, a gap this research aimed to fill.

Prior work has examined factors influencing trust in Zakat institutions. Azis et al. (2020), as an example, found that disclosure practice and stakeholder management have a significant relationship with trust in Zakat institutions, and they used multiple regression analysis to identify factors influencing trust. In contrast, this study employed SEM AMOS to investigate the factors influencing trust among *Muzakki* toward Zakat institutions, with the inclusion of blockchain as a mediating variable. Furthermore, analysing factors influencing trust in this study used BAZNAS' Zakat payers as respondents. Thus, combining factors influencing trust in Zakat institutions and blockchain-based Zakat would produce comprehensive results that contribute to Zakat, especially BAZNAS.

3.7 VARIABLE MEASUREMENT

The questionnaire comprised a total of 30 items, adapted from various studies (Nguyen & Leblanc, 2001; Mustafa et al., 2013; Mustafa et al., 2011; Ghani et al., 2012; Irwan, 2019; Ridwan et al., 2019; Said et al., 2012; Sutomo et al., 2015; Gurning & Ritonga, 2015; Philsoophian et al., 2021; Sargeant & Lee, 2002), with necessary amendments to ensure suitability for Zakat Payers. This questionnaire underwent translation into Bahasa Indonesia. The questionnaire items and the sources are summarised in the tables below:

Table 3.1 Items for Reputation

Code	Items	Origin/Adapted
R1	BAZNAS has a good image	(Nguyen & Leblanc, 2001)
R2	Information in Zakat collection is transparent	(Oladimeji Abioye Mustafa et al., 2013)
R3	BAZNAS has reputable board members	(LeBlanc & Nguyen, 1996),

Code	Items	Origin/Adapted
		(Oladimeji Abioye Mustafa et al., 2013)
R4	BAZNAS is professionally managed	(LeBlanc & Nguyen, 1996)
R5	BAZNAS can be trusted on not allocating Zakat funds for non-relevant purposes	(Mustafa et al., 2011)

Table 3.2 Items for Satisfaction of Zakat Distribution

Code	Items	Origin/Adapted
SZD1	Zakat has been distributed in compliance to Islamic principles	(Ghani et al., 2012)
SZD2	I believe that BAZNAS has distributed my Zakat following government law and Shariah Law	(Ghani et al., 2012)
SZD3	I believe that my paid Zakat funds will be distributed to the poor and the needy	(Irwan, 2019)
SZD4	I have no doubt for the quality of distribution in my region	(Ridwan et al., 2019)
SZD5	There must be more distribution systems for better facilities for the poor	(Ridwan et al., 2019)

Table 3.3 Item for Service Quality

Code	Item	Origin/Adapted
SQ1	BAZNAS complies to Islamic principles	(Said et al., 2012)
SQ2	BAZNAS has knowledgeable staff	
SQ3	BAZNAS office is convenient, clean, and neat	
SQ4	BAZNAS understands customers' needs	
SQ5	BAZNAS' staff counter service is fast and efficient	

Table 3.4 Items for Disclosure Practice

Code	Item	Origin/Adapted
DP1	BAZNAS has provided transparent information to *Muzakki*	(Irwan, 2019)
DP2	BAZNAS gives easy access information regarding Zakat distribution	(Irwan, 2019)
DP3	BAZNAS publishes all the Zakat funds collection	(Sutomo et al., 2015)
DP4	Media of BAZNAS for communication and socialisation of Zakat are according to Islamic law	(Sutomo et al., 2015)
DP5	BAZNAS giving information about the development regarding the well-being of the *Mustahik* that Zakat Payers have given Zakat funds	(Gurning & Ritonga, 2015)

Table 3.5 Items for Blockchain Technology as Mediating Variable

Code	Item	Origin/Adapted
BT1	Zakat using blockchain would be transparent	(Philsoophian et al., 2021)
BT2	Transparency of information in blockchain is one of the main features of blockchain	
BT3	Blockchain can improve the tracing of Zakat fund distribution	
BT4	The digital signature process improves the blockchain security	
BT5	Blockchain can improve the authentication process of Zakat distribution	

Table 3.6 Items for Trust in Zakat Institution

Code	Item	Origin/Adapted
TZI1	BAZNAS always acts in the best interest of the cause	(Sargeant & Lee, 2002)
TZI2	BAZNAS conducts their operation ethically	
TZI3	BAZNAS donates funds appropriately	
TZI4	BAZNAS does not exploit their donors	
TZI5	BAZNAS uses fundraising techniques that are appropriate and sensitive	

3.8 CHAPTER SUMMARY

Chapter three delves into a comprehensive understanding of Zakat, trust, and blockchain technology within the context of Zakat institutions, particularly focusing on BAZNAS North Sumatera. It begins with an overview of Zakat, exploring its meaning, types, and its role in poverty alleviation, alongside its potential integration with blockchain technology. Trust is examined in detail, defining its significance, and assessing its level within Zakat institutions. The chapter further analyses attitude determinants that influence trust, including reputation, satisfaction with Zakat distribution, service quality, and disclosure practices. Moving to blockchain technology, it provides an overview of its fundamentals, smart contracts, life cycle, and various applications, particularly emphasising its potential to enhance trust in Zakat institutions. Legal aspects, including the regulatory framework in Indonesia and the role of central bank digital currency, are also explored. Lastly, the chapter discusses the variable measurement methodologies utilised in the study.

CHAPTER FOUR

THEORETICAL AND CONCEPTUAL FRAMEWORKS

4.1 INTRODUCTION

This chapter discusses the theoretical background and conceptual framework of this study. The main purpose of including this chapter is to explain the theories that underpinned the theoretical framework to build a strong theoretical relationship between all the variables of the model.

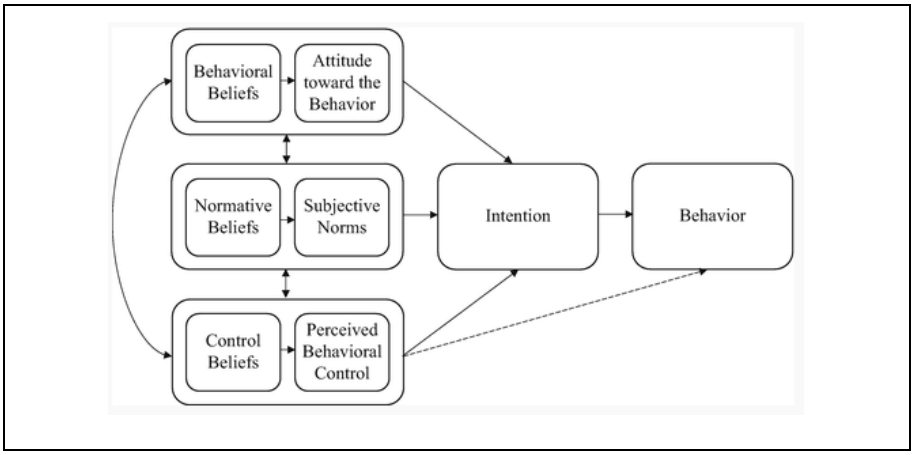
4.2 THEORETICAL FRAMEWORK

The theoretical framework served as the intellectual foundation for this research, offering a structured lens through which to understand and interpret the multifaceted dynamics of Zakat collection and distribution within the context of BAZNAS, North Sumatera. As this study endeavoured to explore the challenges faced by BAZNAS, North Sumatera, analyse the determinants of Zakat payers' attitudes, investigate their impact on trust intentions, and examine the potential mediating role of blockchain technology, a robust theoretical framework became indispensable. In this chapter, key theoretical perspectives are discussed, including the Theory of Planned Behaviour (TPB) and the Unified Theory of Acceptance and Use of the Technology Model (UTAUT). These theories were selected for their applicability in elucidating the intricate relationships between institutions, individual attitudes, and the integration of innovative technologies within the realm of Zakat institutions. The synthesis of these theories provided a comprehensive framework for the systematic exploration of the research objectives, fostering a deeper understanding of the interconnected factors influencing Zakat processes and trust dynamics in BAZNAS, North Sumatera.

4.2.1 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) stands as a prominent framework in the field of social psychology that aims to explain and predict human behaviour. Its extensive application spans diverse realms such as health, consumerism, and organisational contexts. The theory proposes that human behaviour is determined by three factors: attitude, subjective norms, and perceived behavioural. Attitude encapsulates a person's evaluation of the behaviour, discerning it as positive or negative. Subjective norms refer to the perceived social pressure to engage in or avoid the behaviour. Perceived behavioural control refers to the perceived ease or difficulty of performing the behaviour.

TPB, conceived by Icek Ajzen (1985, 1991), is an extension of the Theory of Reasoned Action (TRA). TPB as a general model for predicting and explaining behaviours in various behaviour types. Ajzen's (1991) augmentation of TPB introduced a novel variable absent in TRA, namely perceived behavioural control. The addition of perceived behavioural control is to understand the limitations that individuals have in order to carry out certain behaviours; in other words, the behaviour is not only determined by subjective attitudes and norms, but also by individual perceptions of the control he can exercise that come from his self-confidence against these *control beliefs*. Ajzen (2005) further enriched TPB by adding individual background factors, culminating in the schematic representation illustrated in the figure below:



Source: Ajzen (2005)

Figure 4.1 Theory of Planned Behaviour

The Theory of Planned Behaviour contains several variables, including:

1) *Behavioural Beliefs* are things that are believed by individuals regarding a behaviour in terms of positive and negative attitudes towards the behaviour or a tendency to react in an affective manner towards the behaviour in the form of liking or disliking the behaviour. Relationships influence individual backgrounds.

2) *Normative Beliefs* are things that are directly related to environmental influences. According to Ajzen and Fishbein (2005), social and environmental factors, especially those that influence individual lives, can influence individual decisions.

3) *Subjective Norms* are the extent to which a person has the motivation to follow other people's views on the behaviour to be carried out (*Normative Beliefs*). If the individual feels it is his personal right to determine what he will do and not be determined by others around him, he will ignore other people's views about the behaviour that will be done. According to Fishbein and Ajzen (1975), the phenomenon describes how a person's views are influenced by others' behaviour, referred to as motivation to comply.

4) *Control Beliefs* are obtained from various sources, such as prior personal experience with the same behaviour or observations of others' behaviours (e.g., friends, parents). These experiences instil confidence in individuals that they too will be able to do it. In addition to knowledge, skills, and experience, individual beliefs about a behaviour are also determined by the availability of facilities to carry it out, the time available to carry it out, and the ability to surmount potential difficulties hindering the implementation of the behaviour.

5) *Perceived behavioural* control involves the individual's beliefs regarding their past experience with a certain behaviour, the availability of time and supporting facilities, and their self-assessment of ability to carry out the behaviour. The perception of the ability to control can directly influence the behaviour, as indicated by the broken arrow line or through the intention to perform the behaviour.

6) *Behavioural Intention* is a person's tendency to choose or refrain from a particular action. This intention is influenced by the extent to which individuals have a positive attitude towards certain behaviours and the extent to which they receive support from other influential people in their lives.

7) *Attitude* refers to an individual's disposition towards a behaviour or conduct (Ajzen, 1991). Fishben and Ajzen (1975) assumed that attitudes towards a behaviour or the expected outcome or result of a behaviour are major predictors of behavioural intention. Furthermore, Ajzen and Fishbein (1980) and Ajzen (1991) highlighted that attitude represents the cognitive part of an individual and denotes beliefs, which are determined by a total set of accessible behavioural beliefs linking behaviour to various outcomes and other attributes. Attitude is considered a significant factor since behavioural intentions always capture the motivational factors that influence willingness to try and the amount of effort one should exert in performing the intended behaviour (Ajzen, 2002). Therefore, an

> individual's decision to use the system depends on self-evaluation, and the attitude directs either positive or negative salient beliefs in relation to that behaviour. Attitude is considered a vital component in predicting intention towards behaviour. The model observed that attitude comes first, followed by intention, which in turn precedes behaviour. Thus, behaviour is a product of rational choice that results from planning, thinking, and execution.

Previous studies provide substantial evidence supporting the efficacy of the Theory of Planned Behaviour in predicting various behaviours. Hamilton et al. (2020) demonstrated that the theory can predict parent-for-child health behaviours; Ngu (2020) found its applicability in predicting knowledge sharing behaviour; and Tehrani et al. (2021) established its predictive power in positive thinking behaviour among university students. Overall, these papers suggest the theory's effectiveness in predicting a wide range of behaviours across diverse contexts.

The TPB has been applied to various domains, including the context of charitable giving. In the context of Zakat institutions, understanding the determinants of behaviour, particularly trust in Zakat institutions, is crucial for the success of these organisations. The TPB provides a useful framework for discerning the factors influencing individuals' trust in Zakat institutions, including attitudes towards Zakat, social norms related to Zakat, and perceived control over Zakat payment. By examining these factors, this study can provide insight into how Zakat institutions can better understand and influence individuals' trust in their organisations. Notably, Hasbullah et al. (2014) expanded the TPB to incorporate service quality and trust variables as factors influencing the intensity of *Muzakki* paying Zakat. This expansion was motivated by the acknowledgement that service quality reflects the alignment of products with customer desires, and trust serves as an important factor influencing loyalty.

This study focused on the attitude component of the TPB. Attitude refers to an individual's positive or negative evaluation of performing a behaviour, and it is one of the key factors influencing trust. This study recognised the importance of attitude as a

significant predictor of intention and therefore only considered attitude from the TPB in its research. The study aimed to understand the underlying beliefs and perceptions that shape individuals' attitudes towards trusting Zakat institutions and how these attitudes translate into behavioural intentions. By identifying the factors that shape individuals' attitudes, the study provided insights that can be used to develop effective strategies to enhance trust in Zakat institutions.

4.2.2 Unified Theory of Acceptance and Use of the Technology Model (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) is strategically chosen as the theoretical framework for this study to comprehensively investigate the potential mediating role of blockchain technology in the context of Zakat payment within BAZNAS, North Sumatera. UTAUT is particularly well-suited for analysing technology adoption behaviours, as it integrates various factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions. Given the increasing importance of blockchain in enhancing transparency and reliability in financial transactions, understanding Zakat payers' attitudes towards this technology becomes imperative. UTAUT's holistic approach allows for the exploration of how perceived usefulness, ease of use, and social influences contribute to individuals' acceptance and use of blockchain in the specific context of Zakat payments. By employing UTAUT, this research aimed to unravel the intricate dynamics surrounding the adoption of blockchain technology among Zakat payers, providing insights that are valuable for both academic discourse and the practical enhancement of technology-mediated trust within Islamic philanthropy.

The UTAUT model, developed by Venkatesh, Morris, Davis, and Davis, in 2003, stands out as a well-known method for determining the acceptance and adoption of new technology. UTAUT was designed to build on the eight most popular End-User IT acceptance models:

1. Technology acceptance model (TAM/TAM2) (Davis, 1989; Venkatesh & Davis, 2000),

2. The innovation diffusion theory (IDT) (Moore & Benbasat, 1991),
3. The theory of reasoned action (TRA) (Hill, Fishbein, & Ajzen, 1977),
4. The theory of planned behaviour (TPB) (Taylor & Todd, 1995),
5. The motivational model (MM) (Davis, Bagozzi, & Warshaw, 1992),
6. A model of combining TAM and TPB (c-TAM-TPB) (Taylor & Todd, 1995),
7. The model of PC utilisation (MPCU) (Thompson, Higgins, & Howell, 1991)
8. The social cognitive theory (SCT) (Compeau & Higgins, 1995)

Venkatesh et al. (2003), as cited by Lee, Kriscenski, and Lim (2019), determined that "the unified model explained nearly 70% of the variance in usage intention, which was a significant improvement over any of the eight individual models evaluated." From the test done by Venkatesh et al. (2003), they recommended three direct determinants of intention to use (*performance expectancy*, *effort expectancy*, and *social influence*), two direct determinants of usage behaviour (*intention* and *facilitating behaviour*), and significant moderating influences (*experience*, *voluntariness*, *gender*, and *age*). The illustration of the framework of UTAUT is in the figure below:

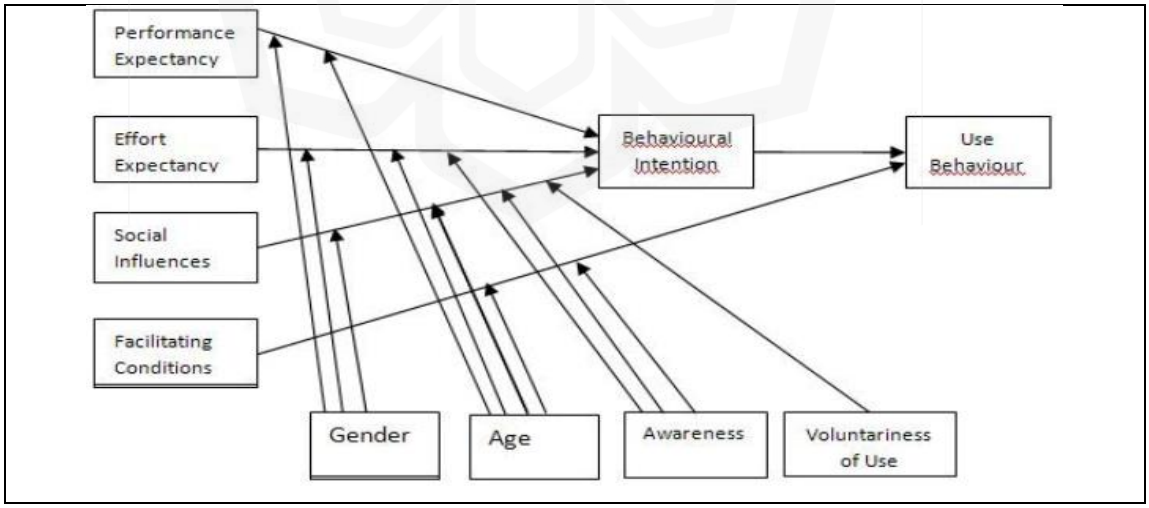


Figure 4.2 UTAUT
Source: (Venkatesh et al., 2003)

Performance expectancy is defined as the extent to which an individual believes that using the system will confer him an advantage in improving performance. Various constructs from different models contribute to the understanding of performance expectancy are perceived usefulness (TAM/TAM2 and C-TAM-TPB), extrinsic motivation (MM), job-fit (MPCU), relative advantage (IDT), and outcomes expectations (SCT).

Effort expectancy is defined as the level of convenience associated with the use of the system. The three constructs of the effort expectancy model are perceived ease of use (TAM/TAM2), complexity (MPCU), and ease of use (IDT).

Social influence is defined as the extent to which an individual felt it was important that the other person believed he had to use the new system. Social influence as a direct determinant of behavioural intention is constructed from subjective norms (TRA, TAM2, TPB/DTPB, and C-TAMTPB), social factors (MPCU), and image (IDT).

Facilitating conditions are defined as the extent to which an individual believes that the organisational and technical infrastructure is there to support the use of the system. This definition captures the concept embodied by three different constructs, namely: perceived behavioural control (TPB/DTPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT) (Venkatesh et al., 2003).

UTAUT extends the Technology Acceptance Model (TAM) by incorporating additional constructs. Originally, Davis (1985) proposed the Technology Acceptance Model (TAM), which posited that the system's *ease of use* and *usefulness* influence the user's attitude towards the system's actual use. This model explains the computer's acceptance behaviour where users' convictions about the features and capabilities of the system (i.e., those related to *ease of use* and *usefulness*) influence their approach to system use, e.g., whether to use it or not (accept or reject) (Davis, 1989). The three main factors, i.e., *perceived ease of use*, *perceived usefulness*, and *attitude towards using the systems*, are classified as motivational factors. *Perceived ease of use* is defined as 'the extent to which a person believes it would become effortless to use a

particular system' (Davis, 1989). On the other hand, *perceived usefulness* is defined as 'the extent to which a person believes that using a specific system will increase their job performance' (Davis, 1989). The illustration of the conceptual framework of technology acceptance is in the figure below:

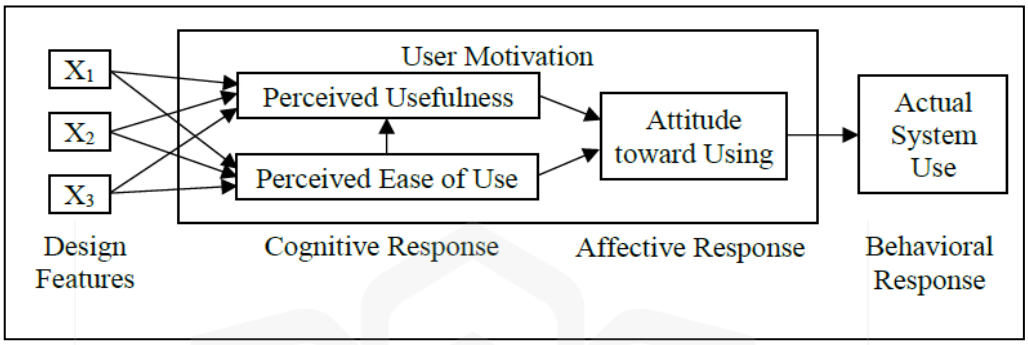


Figure 4.3 Technology Acceptance Model (TAM)

4.3 CONCEPTUAL FRAMEWORK

A conceptual framework serves as a structured guide for researchers to elucidate the natural progression of the studied phenomenon (Camp, 2001). It facilitates the clear specification and definition of concepts within the problem of the study (Mennecke & Townsend, 2012). Derived from the literature and empirical studies reviewed in this research work, the model contains several variables: Attitude, Blockchain Technology, and Trust in Zakat institutions. This study focused on attitude, while excluding supplementary variables of the Theory of Planned Behaviour (TPB), namely subjective norms, perceived behavioural control, and perceived usability. This study also adopted blockchain technology as a mediator variable between attitude and trust in Zakat institutions. This variable was chosen due to its vital influence on the relationship between attitude and trust in Zakat institutions. Blockchain's transparency, facilitated by transactions on a distributed ledger, enables all network nodes to view and authenticate every transaction, ensuring traceability and preventing fraud and cyberattacks. Therefore, blockchain presents a wonderful alternative for Zakat institutions to get beyond its limitations while still enabling individuals to know exactly where and how their money was spent (Peredaryenko, 2019).

A research study conducted in Malaysia sought to explore the factors that contribute to the propensity of individuals who pay Zakat to place trust in a specific Zakat institution. The study identified several factors, namely board capital, disclosure practices, the governmental model of Zakat institutions, and stakeholder management, as the underlying causes of trust among Zakat payers (Mustafa et al., 2011). The primary data collection involved 480 respondents, gathering their perceptions of trust in Zakat institutions. In a similar vein, a study by Ghani et al. (2018) in Malaysia, involving 184 Zakat payers, showed a positive and significant impact of perceived board management and governmental models on Zakat payers' trust in Zakat institutions. A study was also done in Nigeria with 480 respondents, exploring factors influencing trust in Zakat institutions. The results showed that perceived board capital, perceived legitimacy management, and perceived stakeholder trust have a direct and positive relationship with Zakat payers' trust in Zakat institutions (Abioyea et al., 2011).

The referred studies proposed that trust in Zakat institutions is influenced by several key factors, including disclosure practices, communication, non-opportunistic behaviour, and perceptions of distribution (Ghazali 2016; Zainal 2016). Moreover, Nawi (2021) argued that trust is a critical component of Zakat compliance. Aziz's (2020) research established a significant correlation between disclosure practices, stakeholder management, and trust. This finding suggests that Zakat institutions must maintain transparency in their management processes to establish trust. These conclusions have direct relevance to the present research inquiry, indicating that the aforementioned factors are paramount in cultivating trust towards Zakat institutions.

After analysing and reviewing some recent and relevant studies related to trust in Zakat institutions, the author formulated the proposed conceptual framework, which is an extended theory of planned behaviour. The framework shows different relationships between the variables. Reputation, satisfaction with Zakat distribution, service quality, and disclosure practices serve as indicators of attitude. This approach can be used to investigate in more depth what variables affect intention. This study has a mediator variable, which is blockchain technology, between attitude and intention to trust in Zakat institutions. The conceptual framework shown in Figure 4.4

portrays the dependency of the intention to pay Zakat through Zakat institutions on attitude, with the mediation of blockchain technology.

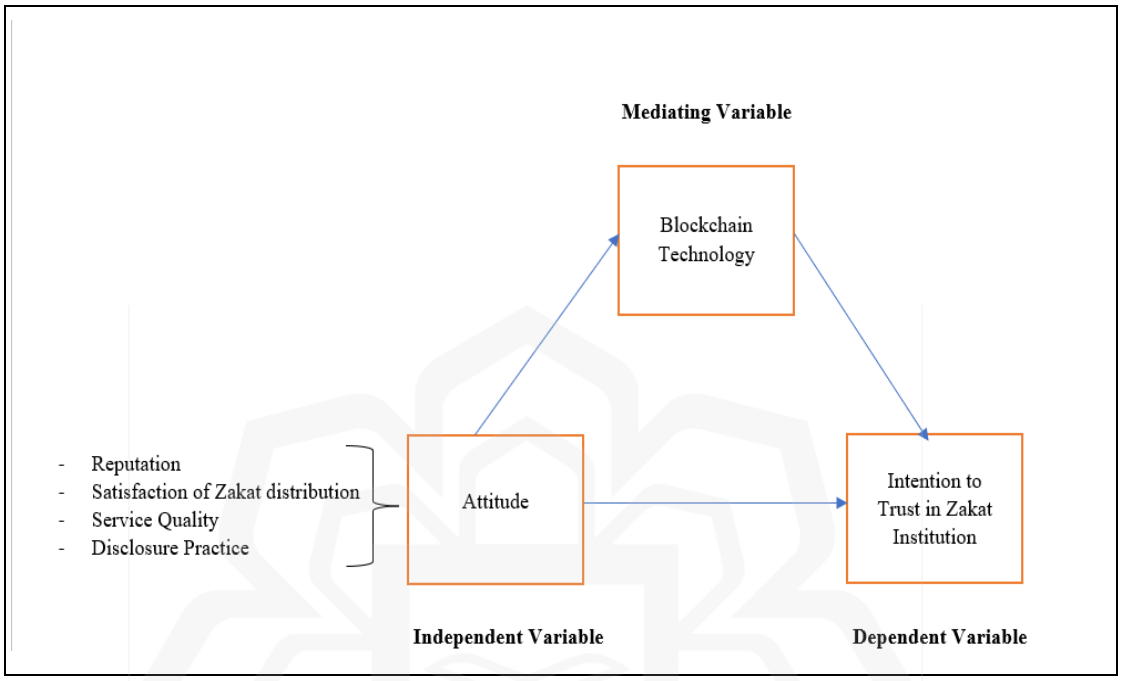


Figure 4.4 Conceptual Framework

Figure 4.4 presents the various variables scrutinised in this research work. This study employed extended TPB to explain *Muzakki*'s intentions to trust Zakat institutions. The model contains three main components: attitude, blockchain technology, and trust in the Zakat institution. Attitude is composed of reputation, satisfaction with Zakat institutions, service quality, and disclosure practices, while blockchain technology was used as a mediator between attitude and the intention to trust Zakat institutions. These variables were adopted from Zainal et al. (2016), who, in their framework research, integrated reputation, satisfaction with Zakat distribution, and service quality as exogenous variables. Meanwhile, another study by Samargandi et al. (2018) employed disclosure practice as exogenous variable. Notably, this study diverged from the earlier model by amalgamating exogenous variables from both previous studies; incorporating reputation, satisfaction with Zakat distribution, service quality, and disclosure practice as exogenous variables. Another distinctive feature

was the inclusion of blockchain technology as a mediating variable, a facet absents in previous research. This study summarised the literature to focus on blockchain technology. However, the previous studies by Zainal et al. (2016) and Samargandi et al. (2018) did not have any mediator variables. Previous models by Samargandi et al. (2018) only used regression analysis, while this study used a second-order model to follow the research questions and estimate the relationships among latent variables. In other words, the current model found the determinant of trust in Zakat institutions through the mediating effect of blockchain technology.

Furthermore, this study specifically concentrated on the attitude component from the Theory of Planned Behaviour and its correlation with the intention to trust Zakat institutions; therefore, other variables such as subjective norms, perceived behavioural control, and perceived ease of use were not measured. Indeed, the use of blockchain technology is important to increase trust in Zakat institutions. Also, the most crucial dimensions of charity, like Zakat, are transparency and trust. Therefore, this study focused on the factors influencing trust in Zakat institutions, with a dedicated exploration of the mediating role of blockchain technology.

4.4 HYPOTHESIS DEVELOPMENT

This section addresses the hypotheses that are aligned with the objectives represented in the first chapter (Chapter One). There are three hypotheses in the study, and each of them had undergone quantitative testing and received support from a number of empirical studies.

4.4.1 Attitude Determinants and Trust in Zakat Institutions

This section is developing hypotheses for attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice.

4.4.1.1 Reputation and Trust in Zakat Institutions

Reputation is defined as people's perceptions of an organisation's honesty and concern for its stakeholders (Torres-Moraga et al., 2010). Empirical studies found that reputation plays an important role in building trust in Zakat institutions. According to the findings of Azman and Bidin (2015), reputation was the element that is most influential in Zakat payment. A reputable Zakat management organisation will have greater appeal to the public compared to a less reputable organisation. The positive correlation discovered by Azman and Bidin (2015) between reputation and Zakat payment compliance underscored the impact of an organisation's reputation on stakeholders' trust, reaffirming its crucial role in the realm of Zakat institutions.

Several studies have explored the relationship between reputation and trust in Zakat institutions. A study by Zainal et al. (2016) found that reputation is one of the most important factors in developing stakeholder trust in Zakat institutions. Complementing this, Mokhtar (2020) found that service quality and reputation have significant relationships with customer satisfaction in Zakat institutions. Torres-Moraga et al. (2010) contended that reputation is created by interaction within social networks, which share and broadcast information regarding a diverse array of topics, such as what firms do. Further insights from Abd-El-Salam et al. (2013) defined brand reputation as the result of accumulated feelings, ideas, attitudes, and experiences with an organisation that are retained in memory and then used to create an image when the organisation's name is heard or disseminated by the surrounding community. The definition of a brand's reputation demonstrates that it is critical to a business or institution because it is intrinsically tied to the customer, which is a factor that ensures a business's or institution's success.

The significance of a company's credibility cannot be overstated, as it reflects confidence, and trust is a key factor in establishing long-term relationships (Anderson & Weitz, 1989). The degree to which an individual's credibility affects trust has been examined across diverse contexts. A strong reputation within the industry influences the consumer's trust in the product (Torres-Moraga et al., 2010). Azman and Bidin's (2015) research, for instance, underlined a positive relationship between reputation

and compliance with paying Zakat. Moreover, Hafizah et al. (2016) empirically demonstrated a positive correlation between reputation and trust in Zakat institutions.

Schultz (2019) found that reputation influences trust in non-profit organisations and that this relationship is moderated by a person's value attachment to the organisation. Next, Schloderer (2014) discovered that the reputation of a non-profit organisation is important for attracting resources and that this is especially true for male, older, highly educated, and affluent respondents. Padanyi (2003) claimed that an organisation's reputation among managers of similar non-profit organisations influences its success in attracting resources. According to Shahid's study (2021), both formal reputational signals, such as third-party certificates, and informal reputational signals, such as self-proclaimed social entrepreneurship, can affect stakeholder trust and donation intentions. These findings suggested that reputation is important for charity organisations like Zakat institutions.

In the domain of Zakat institutions, prior empirical studies have shown that maintaining a positive reputation is crucial for cultivating trust and upholding a favourable image. In particular, Zadjuli (2020) demonstrated that an effective corporate governance system is critical for preserving a positive reputation. Amalia (2019) highlighted that dimensions such as transparency, accountability, responsibility, independence, and fairness are crucial constituents of good governance. Moreover, Hamid and Jusoh's (2017) research accentuated the close association between a Zakat institution's reputation and the personal contacts forged with its beneficiaries. Collectively, these four studies emphasised the imperative of upholding a favourable reputation to cultivate trust and ensure the sustainability of Zakat institutions.

4.4.1.2 Satisfaction of Zakat Distribution and Trust in Zakat Institution

Customer satisfaction is essential for performance and is integral to a service-based company. According to Oliver (1980), satisfaction generally refers to how a consumer assesses their experience of a product or experience in comparison to their initial

expectations. However, in the context of Zakat institutions, the paramount aspect is the customer's contentment with the quality of services offered. Numerous studies have explored the usage of Zakat institutions and their customers' acceptance of the services received.

Studies have consistently shown that satisfaction with Zakat distribution is one of the factors considered by *Muzakki* when deciding whether or not to give Zakat. Several recent empirical studies have identified various factors that significantly determine the optimal Zakat distribution channel. Tiara et al. (2022) highlighted that accountability, transparency, and Zakat literacy are crucial considerations in this decision-making process. Similarly, Andam and Osman (2019) identified attitude, descriptive norm, and moral norm as essential factors influencing whether individuals choose to give Zakat. Moreover, Syed Yusuf et al. (2022) demonstrated that technology improvement and governance are critical determinants of the effectiveness of Zakat distribution. Finally, Rahman et al.'s (2021) research revealed a widespread lack of understanding regarding the distribution of Zakat, which could potentially impact individuals' decisions to pay Zakat. Overall, these empirical findings suggest that various factors play a significant role in determining the optimal Zakat distribution strategy, suggesting policymakers to consider these factors when formulating policies to encourage Zakat donations.

The literature provides ample evidence that the current Zakat distribution system requires improvements to augment its effectiveness and efficiency in improving the socio-economic well-being of the Zakat recipients. For instance, Lubis (2011) highlighted several pressing issues that currently plague the Zakat distribution system in Malaysia which need to be urgently addressed. Similarly, Rosman's (2020) study demonstrated that the current system's inefficiencies impede its ability to positively impact the recipients' socioeconomic conditions. Lubis's (2018) research also suggested improving communication and interaction among stakeholders involved in the Zakat distribution process to enhance efficacy. Moreover, Bakar's (2011) findings recommended that implementing a self-sustaining mechanism for Zakat distribution could be the most effective approach to ensuring a better quality of life for the beneficiaries. In summary, the literature strongly advocates that addressing

the challenges and adopting best practices could significantly enhance the Zakat distribution system's effectiveness, thereby positively impacting the socio-economic well-being of the recipients.

Empirical studies also provide valuable insights into ways of enhancing the Zakat distribution system. Shaari et al. (2020) suggested that technology could be a powerful tool for improving the distribution process. Santoso (2019) argued that strengthening the governance system and disseminating information on Zakat-based digitalisation institutions are essential for improving the system's efficacy. Additionally, Kholis and Mugiyati (2021) highlighted the BAZNAS's strategic distribution of productive Zakat as an effective strategy for reducing poverty. These empirical findings suggest that improving Zakat distribution could be achieved through a combination of technological solutions, refining the distribution model, and improving the governance system and information dissemination. Hence, policymakers should consider these factors when formulating policies to enhance the Zakat distribution system.

However, an issue arises concerning the management of the almsgiving at the Zakat institution, particularly in relation to customer satisfaction. Mohd Mokhtar et al. (2020) stated that many *Muzakki* did complain about the almsgiving management system, citing issues such as the distribution of the alms excess funds and the lack of transparency and mismanagement by the Zakat employees in Malaysia. Based on the previous research, there are several findings pertaining to Zakat distribution satisfaction. Hence, this shows that a reasonably trusted Zakat institution will gain confidence from the high level of satisfaction of its beneficiaries.

4.4.1.3 Service Quality and Trust in Zakat Institutions

Service quality is intricately linked to customer satisfaction. According to Gronroos (1984), service quality is how well a service meets the expectations of the customer. Additionally, Zeithaml (1988) stated that service quality refers to the overall assessment of the advantages and value of the product or service. The measurement of

service quality has often been gauged through a small number of evaluative dimensions aligned with previous research expectations. According to Parasuraman et al. (1985), the measurement of service quality has been measured by SERVQUAL, which has five dimensions; reliability (the ability to perform the promised service reliably and precisely), assurance (the awareness and politeness of employees and their ability to develop faith and assurance in customers), tangibles (the appearance of physical amenities, equipment, employees, and communication resources), empathy (the dimension of helpful, individualised attention to customers), and responsiveness (the eagerness to help consumers and provide quick services).

Several empirical studies have shown the importance of service quality for Zakat institutions. Haddad (2019) emphasised its crucial role in service industry differentiation and gaining a competitive edge. Meanwhile, Tamizi et al. (2021) found that good governance practice through leadership and communication has a positive effect on service quality in Zakat institutions. As for Saad et al. (2018), they examined the service quality of Zakat institutions in Malaysia and their findings revealed that a significant proportion of participants evaluated the tangibles, reliability, and courtesy aspects of service quality as "good." However, the credibility, competence, responsiveness, access, understanding, and communication aspects were predominantly rated as "bad."

Another study also suggested that poor service quality in Zakat institutions has consequences for trust and satisfaction. Wahab et al. (2016) found that service quality has an impact on Zakat stakeholders' satisfaction, and Zainal (2016) found that service quality plays a role in developing stakeholder trust in Zakat institutions. Nonetheless, Wahab et al. (2017) noted a scarcity of studies on stakeholder trust in Zakat institutions, suggesting that more research is needed on this topic.

Zakat institutions must increase the amount of Zakat payments in order to maintain the efficiency of Zakat (Zainal, 2016). Based on previous research, there are several findings regarding the satisfaction of Zakat distribution. According to Md. Idris and Ayob (2002), the performance of Zakat administration by Zakat institutions in terms of transparency and efficiency led to widespread non-compliance.

Meanwhile, higher satisfaction with Zakat institutions correlates better with higher Zakat compliance. Agreeing with the above arguments, it is expected that a high level of satisfaction among stakeholders will lead to greater trust in Zakat institutions.

According to Wahab and Rahim Abdul Rahman (2011), the efficiency with which Zakat institutions manage their funds and distribute enough to *Muzakki* is a key indicator of service quality. Scholars have done a lot of research on the quality of service; for example, Staples et al. (2002) argued that service quality is an important instrument for winning trust, patronage, customer satisfaction, and loyalty. Saad (2010) argued that people are more likely to pay Zakat if the organisation provides good service.

4.4.1.4 Disclosure Practice and Trust in Zakat Institution

A financial statement is a reliable source to assess the success of management and the organisation's financial condition (Samargandi et al., 2018). It provides valuable information for various stakeholders, making it the Zakat board of management's responsibility to ensure the financial statements' credibility (Karim, 1990). In the case of non-profit organisations, donors and investors are the primary shareholders who rely on published financial statements as a main source of information. To establish credibility, Zakat institutions should disclose comprehensive financial and related details about their expenditures, a practice essential for demonstrating organisational transparency (Zabri & Mohammed, 2018).

Research indicates that disclosure practices serve as a mechanism for companies to improve their reputation and transparency. Louie et al. (2019) observed that family firms voluntarily disclose information to signal their growth potential to the market and comply with government regulations, thereby improving their reputation. Judkowiak et al. (2021) found that the scope of disclosures about financial instruments among Polish companies is varied and their transparency is low. Ortega-Rodríguez et al. (2020) emphasised that the absence of transparency legislation in the third sector leads non-profit organisations to adopt voluntary disclosure of information

policies to improve the perceived credibility of these entities by their stakeholders. In essence, disclosure practices play a pivotal role in improving their reputation or transparency.

Several studies have explored the disclosure practices of financial information by Zakat institutions in Indonesia. Syahara and Handayati (2020) revealed that despite adhering to PSAK 109 guidelines for fund recognition and measurement, financial statements in a Zakat institution in Malang, Indonesia, have not fully complied with PSAK 109 in terms of fund disclosure. This suggests that Zakat institutions are not disclosing their finances in a fully transparent way. Additionally, Sakeenah et al. (2019) identified receipts, disbursements, and asset management as crucial areas, reflecting a 'good' level of practice by Zakat institutions. This suggests the need for improvement in managing these aspects, potentially enhancing disclosure practices. Finally, Nasri, Aeni, and Haque's (2019) findings established a positive and significant impact of professionalism and transparency in Zakat management on financial performance.

Although there is widespread acknowledgment that disclosure practices can affect the level of trust people have in an organisation, disclosure is not always effective at increasing trust. Fogel-Yaari (2018) found that financial disclosure quality plays a role in fostering trust. Axelton and Bansal (2022) determined that the perceived specificity of cybersecurity risk disclosures influences the behavioural intentions of different stakeholders. Blouin, Lee, and Erickson (2018) discovered a strong correlation between voluntary web disclosure of the IRS Form 990 and donations. Willems and Faulk (2019) found that organisations' voluntary disclosure of a scandal does not always effectively mitigate negative donation intentions following a crisis. Therefore, while disclosure practices can contribute to increased trust, their impact on trust is not uniformly effective.

A noteworthy disparity exists between the potential Zakat fund and the actual Zakat received by Zakat institutions in Indonesia. Problems surrounding the Zakat funds stemmed from a mistrust in Zakat institutions because of the quality of the financial information that Zakat institutions provided. The information will be helpful

if it helps in aiding decision-making processes, particularly in assessing whether Zakat institutions are trustworthy in obtaining, using, and distributing Zakat entrusted by Zakat payers (Mediawati, 2016).

Taha et al. (2017) emphasised the necessity for Zakat institutions to disclose relevant Zakat information, particularly within financial reports. They observed that accessing Zakat information, especially in financial reports, for public viewing is sometimes not possible. Nevertheless, they discovered that Zakat institutions do organise and prepare relevant information, especially financial statements. However, such information is confidential due to autocratic matters. As a result, the study uncovered a prevailing misconception about Zakat institutions arising from undisclosed information. Generally, a quantity of Zakat institutions permits public viewing, while others restrict it to internal access only. Henceforth, Zakat institutions should realise the importance of providing a clear picture to the public about the financial reporting of Zakat funds. It is important not only for the image of the institutions, but also to encourage payers to channel their contributions through them (Taha et al., 2017).

Meanwhile, Jayanto and Munawaroh (2019) stated that the disclosure of financial statements is expected with the aim of improving public reasoning agility and interest in paying Zakat. The transparency of Zakat institutions has a significant effect on *Muzakki*; there is also a close relationship between transparency and receipt of Zakat funds. Transparency involves the disclosure of information to stakeholders about the use of funds. Schnackenberg and Tomlinson (2016) showed that there are three main aspects of transparency: information disclosure, clarity, and accuracy.

Drawing on the wealth of existing literature, findings, and empirical evidence, a hypothesis can be formulated: the determinants of attitude, including reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, exert a significant impact on the intention to trust in Zakat institutions. Therefore, the following hypothesis was developed:

H1. Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, have a significant impact on the intention to trust in a Zakat institution.

4.4.2 Mediating Role of Blockchain Technology

Blockchain is a technology that offers the potential to substantially improve the traceability of food-related products, benefitting not only companies, but also consumers and policymakers. This innovative technology operates through a distributed network, maintaining records of digital assets in a decentralised manner. Abojeib and Habib (2019), for example, indicated that continuous efforts to apply blockchain technology in social and financial systems are driven by factors such as good governance, low transaction costs, and high transparency.

There is a very extensive literature on the topic of how blockchain technology can enhance trust in a variety of research fields, yet certain limitations persist. Conway and Garimella (2020) found that blockchain technology can be used to reduce technology risk and enhance trust in complex business ecosystems, meanwhile, Wei, Wu, and Long (2020) proposed blockchain technology as a tool to address trust management issues in the Social Internet of Things (SIoT). However, Lemieux (2016) pointed out that blockchain technology can help in establishing trustworthy digital records, but it has several limitations as a long-term solution for maintaining such records. These papers suggested that while blockchain technology enhances trust, it is not without its constraints.

Blockchain technology holds promise in curbing fraudulent activities in organisations. Cai and Zhu (2016) noted its effectiveness in preventing objective information fraud, although limitations exist in addressing subjective information fraud. Idehen and Mayor (2021) affirmed the potential of blockchain technology in reducing fraud in businesses. Ahram et al. (2017) highlighted its efficacy in facilitating exchanges of goods, services, or transactions. Beck et al. (2017) asserted that blockchain technology has the potential to revolutionise the digital world and has numerous applications in business and society. Together, these studies suggested that

blockchain technology serves as an effective tool in mitigating fraudulent activities within organisations.

The literature on blockchain's ability to create trust presents varied perspectives. Two studies suggested that blockchain does not create trust: Hawlitschek (2018) found that blockchain is not effective at creating trust, whereas, Lemieux (2016) found that while blockchain can be used to address issues associated with information integrity, it does not guarantee the reliability of information in the first place. However, Zyskind (2015) contended that a decentralised personal data management system that uses blockchain can ensure that users own and control their data. Ali (2021) found that the trusting-beliefs associated with blockchain are technical features, functionality, and valuableness. While not directly addressing trust, it remains relevant. Overall, the literature presents mixed results regarding blockchain's effectiveness in fostering trust.

As the world becomes increasingly interconnected, the application of blockchain technology has the potential to revolutionise the way Zakat institutions are approached and enhance people's trust in them. Several studies have explored how blockchain technology may enhance trust in Zakat institutions. According to a conceptual paper by Bin Nashwan, Abdul-Jabbar, and Abdul Aziz (2021), trust in Zakat institutions plays an important role in Zakat payers' compliance. Zulfikri, Hj Kassim, and Hawariyuni (2021) proposed that blockchain technology can be used to enhance trust in Zakat institutions. Exploring the relationship between blockchain technology and trust in the sharing economy, Hawlitschek et al. (2018) concluded that blockchain can, to some degree, substitute for trust in platform providers. In summary, these conceptual studies collectively highlighted the significance of blockchain technology in fortifying trust in Zakat institutions.

Since blockchain can build a strong Zakat environment, the position of Amil Zakat (Zakat officer) is critical in ensuring the adequacy of Zakat funds. According to Hafidhudin (2011), at least four factors contribute to a plentiful Zakat that can alleviate poverty and bring prosperity to the people, including Amil, who should

embody trustworthiness, professionalism, fairness, and responsibility. Blockchain enhances processes by rendering them traceable, auditable, and irreversible—an integral element in the success of philanthropic endeavours.

Limited empirical studies exist on the role of blockchain technology as a mediating variable in the context of trust in Zakat institutions. However, precedent studies have employed blockchain technology as a mediator variable in their research. For example, Pradipto et al. (2019) utilised blockchain technology as a mediating variable between knowledge management and sustainable competitive advantage. Meanwhile, Hutomo et al. (2018) explored blockchain technology as a mediating variable between the green supplier development process and sustainability performance in Indonesia. Other than that, Philsoophian et al. (2021) studied blockchain technology as a mediating variable in the improvement of knowledge sharing for supply chain management. In alignment with these approaches, this study proposed blockchain technology as a mediating variable between reputation, satisfaction of Zakat distribution, service quality, and disclosure practices to build trust in Zakat institutions.

The main purpose of testing the mediating effect of a variable is to ascertain whether a direct relationship between the dependent and independent variables is not readily apparent (James & Brett, 1984). To address the fourth research question and objective, which attempted to examine whether variable blockchain technology has a mediator role between attitude and trust in Zakat institutions, the methodology of Baron and Kenny (1986) was applied. There are three conditions to confirm whether a variable has a mediatory effect on the relationship. For instance, the dependent variable is (Y), the independent variable is (X), and the mediator variable is (M). The conditions are stipulated as below: • X has a significant effect on Y. • M has a significant effect on Y. • M has a significant mediator effect on the relationship between X and Y. To test the mediation effect of blockchain technology on the relationship between attitude and trust in Zakat institutions, the following hypotheses were formulated:

H2. Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, have a direct and significant impact on trust in Zakat institutions

H3. Blockchain technology mediates the relationship between attitude determinants and trust in Zakat institutions.

4.5 CHAPTER SUMMARY

Chapter Four discusses the theory of planned behaviour, serving as a support to the proposed conceptual framework. The conceptual framework was developed through a review of both conceptual and empirical studies. The conceptual framework contains variables used in this study, including reputation, satisfaction of Zakat distribution, service quality, and disclosure practices. Meanwhile, blockchain technology assumed the role of a mediating variable. The inclusion of these variables was informed by insights gleaned from previous studies. The research gaps were extracted from empirical and theoretical studies, complemented by geographical perspectives. Finally, the hypotheses of the study are addressed based on research objectives and research questions. Three distinct hypotheses are elaborated on in this chapter.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.1 INTRODUCTION

This chapter emphasises the chosen methodology for this study: quantitative methodology. The chapter exposes the readers to the philosophical assumptions espoused by the researcher in carrying out the present study. Not only that, extensive discussions are provided on the research design, research population, procedure for sample selection and sample size, data collection and data collection instrument, and method for data analysis. To the researcher's view, all these are instrumental for the subsequent analyses presented in ensuing chapters and for deriving subsequent recommendations.

5.2 RESEARCH PARADIGM

A research paradigm is the standpoint of every research project. This paradigm is a complete set of frameworks that describe how a researcher works: "This is the basic belief of the system or the worldview that guides the investigator" (Guba & Lincoln, 1994). Thus, every single research project should follow the prescribed rules and principles to generate knowledge (Kuhn, 1996). In the realm of social sciences, four prominent research philosophies prevail: positivism, realism, interpretivism, and pragmatism. The explanation of each philosophy is presented in Table 5.1:

Table 5.1 Summary of Research Paradigm

	Ontology (nature of reality)	**Epistemology (what constitutes acceptable knowledge)**	**Axiology (Role of Value)**
Positivism	External, objective, and independent of social actors	Focus on causality and law like generalisation, reducing phenomenon to simplest elements	Research is value-free. Researcher independent of the data and maintain objective stance
Interpretivism	Subjectivism: socially constructed reality with multiple changes	Focus on details of situation, realities behind these details, subjective meanings motivating actions	Research is value-bound. Researcher cannot be separated from the research, hence, subjective
Realism	Objectivism: reality exist independent of human thought and belief but interpreted through social conditioning	Focus on explaining within context or contexts	Research is value laden. Researcher is biased by world views, cultural experiences, and upbringing
Pragmatism	External, multiple, view chosen those best answers research question	Relativism: combining different perspectives to help interpret the data	Values play a large role in interpreting results, researcher adopting both objective and subjective points of view

Source: adapted from Ganiyu and Egbu (2018)

The positivist philosophy was adopted in this study, as its logical methodology aligns most suitably with the research objectives. As Saunders et al. (2009) put forth, the researcher can employ quantitative techniques to address the study topics according to positivism. This philosophy offers a thorough description and analysis of the connections between the variables within the conceptual model (Reputation, Satisfaction of Zakat Distribution, Service Quality, Disclosure Practice, Blockchain Technology, and Trust in Zakat Institutions). This philosophy is founded on objective epistemology, which enabled the researcher to generate useful suggestions. The positivist paradigm is also an acceptable philosophical framework for this kind of

research since it aids in understanding and analysing the root causes and potential remedies for complex social issues like trust (Kaboub, 2008).

With the use of primary data, a researcher is able to comprehend and analyse contemporary issues. Given the quantitative and empirical nature of this study, which sought to identify the determinants of trust in Zakat institutions and the mediating role of Blockchain technology on trust, the research aligned with the positivist paradigm. A structured questionnaire, a useful tool for positivist researchers, was used to obtain the data. Following the deductive approach, progressing from general to specific, formed the foundation of this research. The study's hypotheses were also modified from several theories and put to the test using empirical and reliable statistical methods. In general, positivism was the most appropriate paradigm for this research due to all of the aforementioned reasons.

5.3 RESEARCH DESIGN

Research design is the plan, structure, and strategy of investigation used to obtain empirical evidence to answer research questions or test hypotheses (Creswell, 2017; Sekaran, 2016). There are several types of research designs, including correlational design, case-study design, and survey research design. The objectives and philosophical stances that the researchers adopted were related to the differences between these designs. For example, a correlational research design is used to observe the relationships between different model variables (Babbie, 2016). Survey research design is a method of collecting data through questionnaires or interviews to measure the attitudes, opinions, and behaviours of a sample population (Fowler, 2013). Meanwhile, a case-study design is chosen when the research is limited to a specific region, country, or company to study the object of interest's characteristics (Yin, 2018).

Based on the above arguments, this study utilised a combination of correlational research design, case-study design, and survey research design due to its nature and the quantitative method used. Hence, the correlational design was chosen to investigate Zakat payers' attitude towards trust enhancement in BAZNAS North

Sumatera, explore the impact of Zakat payers' attitude determinants on trust intention, and examine the mediating role of blockchain technology. The survey research design was aptly employed to gather standardised data through questionnaires, facilitating the understanding of *Muzakki's* attitudes, opinions, and behaviours. The cross-sectional design, well-suited for surveys, was adopted for its efficiency in collecting primary data from a diverse population simultaneously. This design allowed the exploration of quantifiable differences between groups and relationships between variables, making it the most fitting choice for this research.

5.4 RESEARCH APPROACH

Research approach can be defined as "the overall strategy or plan of action that guides a researcher in answering their research question or hypothesis" (Creswell, 2014, p. 18). Research approaches can be broadly classified into several types. The quantitative research approach involves collecting numerical data and using statistical analysis to examine relationships and patterns in the data. Conversely, the qualitative approach involves collecting non-numerical data through methods such as interviews, observations, and focus groups, and analysing the data for themes and patterns. Inductive research entails generating new theories or hypotheses from observations and data analysis, while deductive research involves testing existing theories or hypotheses by collecting and analysing data. Often, researchers employ multiple approaches within a single study, and the choice of approach depends on the research questions, the available resources, and the researcher's expertise (Mertens, 2019).

In this study, both qualitative and quantitative methods were employed. The quantitative method was used to analyse the factors influencing the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera, and for hypothesis testing. Additionally, this study sought to explore the issues and challenges encountered by BAZNAS, North Sumatera; hence, to achieve this objective, this study used qualitative research and collected data through interviews. In conclusion, this study adopted a dual approach, incorporating both quantitative and qualitative methods to address its diverse objectives.

5.4.1 Qualitative Approach

5.4.1.1 Participants

The interview participants consisted of top management officials from BAZNAS, North Sumatera, namely the Deputy Director of Zakat Collection, Drs. H. Musaddad Lubis, M. Ag, and the Deputy Director of Zakat Distribution, Dr. H. Sultoni Trikusuma, MA.

5.4.1.2 Procedure

Considering the nature of the research objective, this study adopted semi-structured interviews, utilising a flexible set of open-ended questions. This approach enabled the participants to elaborate on their responses, offering insights, and recounting their experiences in their own words. Semi-structured interviews prove valuable in delving into intricate phenomena and understanding the participants' subjective experiences. Hence, for this study, the interview guide consisted of questions about the issues and challenges associated with collecting and distributing Zakat funds. Subsequently, interview sessions were held in the BAZNAS North Sumatera office.

5.4.1.3 Semi-Structured Interview Guide

Interview questions:

1. Could you tell me what the issues and challenges are in collecting and distributing Zakat in BAZNAS, North Sumatera?

2. What is the root cause of these issues? And, how do you tackle the challenges?

3. What is your opinion about blockchain based Zakat implemented in BAZNAS, North Sumatera?

5.4.2 Quantitative Approach

5.4.2.1 Population

Bryman and Bell (2015) defined the term population as the universe of individuals from which the sample is to be chosen. The total population helps the researcher choose the appropriate population to use for study in any particular setting. This study focused on all Zakat payers under BAZNAS North Sumatera Province, located in Medan city. There are three types of *Muzakki* under BAZNAS North Sumatera Province: individual persons, civil servants, and institutions. According to BAZNAS Statistics (2021), there are 1,168 *Muzakki* in BAZNAS, North Sumatera Province. Below is the total number of *Muzakki* as of 2020. For this study, individuals and institutions were excluded, and civil servant staff were selected as the population. This choice was based on their regular Zakat payments to BAZNAS, facilitated by automatic salary deductions, and their minimum bachelor's degree qualification, which is expected to provide a higher level of knowledge regarding Zakat and technology, enabling them to respond effectively to the survey questions.

Individuals may seek assurance in the transparent, efficient, and ethical management of Zakat contributions. Relevant literature includes studies by Ahmad and Rusdianto (2020), who discuss the importance of transparency in Islamic charities. Additionally, Ghafran and Yasmin, (2019), in their work on ethics in charitable contributions, underscored the ethical considerations within Islamic philanthropy. Moreover, Hidayatulloh et al. (2022), in the context of Islamic finance and Zakat administration, highlighted the significance of efficiency in ensuring the effective distribution of Zakat funds. These studies collectively affirmed the idea that even with automated Zakat payments, individuals value the transparent, efficient, and ethical management of their contributions by Zakat institutions.

Even if Zakat payments are automatically deducted, individuals may still want assurance that their contributions are managed transparently, efficiently, and ethically by the Zakat institutions. Supporting the statement that individuals may seek assurance in the transparent, efficient, and ethical management of Zakat contributions, relevant literature includes studies by Ahmad and Rusdianto, (2020), who discussed

the importance of transparency in Islamic charities. Additionally, Ghafran and Yasmin (2019), in their work on ethics in charitable contributions, underscored the ethical considerations within Islamic philanthropy. Moreover, Hidayatulloh et al. (2022), in the context of Islamic finance and Zakat administration, highlighted the significance of efficiency in ensuring the effective distribution of Zakat funds. These studies collectively affirmed the idea that even with automated Zakat payments, individuals value the transparent, efficient, and ethical management of their contributions by Zakat institutions.

Even with the convenience of automatic deductions, individuals may harbour varying attitudes based on their perceptions of how the Zakat system operates. While automated salary deduction streamlines the Zakat payment process, it does not necessarily eliminate the need for trust. Concerns may persist regarding the appropriate allocation of their Zakat funds and the overall management of the process. This is supported by research by Maleki and Hosseini (2020) who found that individuals' attitudes towards charitable giving are influenced not only by the convenience of the payment process, but also by their perceptions of the overall effectiveness and impact of the charitable organisation. Additionally, Park et al. (2022) conducted a study on automated donation systems and emphasised that individuals still evaluate the trustworthiness of the organisation handling their contributions, indicating the enduring importance of attitudes in charitable transactions. Moreover, Graça and Zwick (2020) highlighted the psychological aspect of giving, suggesting that individuals derive satisfaction not only from the act of donating, but also from understanding how their contributions positively affect the intended beneficiaries. These studies collectively affirmed the notion that attitudes play a crucial role in shaping individuals' perspectives on Zakat payments, even when automated processes are in place.

Table 5.2 Number of *Muzzaki* of BAZNAS North Sumatera Province

Type of *Muzakki*	Number
Individual Person	152
Civil Servant	1.010
Institutions	6
Total	**1.168**

Source: BAZNAS, North Sumatera (2021)

5.4.2.2 Sampling

In academic research, a sample refers to a carefully chosen segment of the population intended to draw conclusions that are generalisable to the entire targeted population (Uma Sekaran, 2005). The sampling mechanism is usually aimed at getting information about the whole population with the help of a sample (Gay and Airasian, 2000). In addition, Saunders et al. (2003) argued that sampling helps researchers obtain information from a certain subgroup that reasonably represents the whole population. In this research, simple random sampling techniques were adopted, ensuring that "every element in the population has a known and equal chance of being selected as a subject" (Sekaran, 2005). The selected samplings were considered and deemed suitable for this particular population.

Sample size is also an important component of a research study, as it could distort the reliability of factor analysis and the accuracy of a model (Field, 2005). Green (1991) pointed out that a larger sample size enhances the representativeness of the population and minimises sample errors, contributing to more robust findings. Conversely, a small sample size may yield less reliable correlation coefficients (Tabachnick & Fidell, 1996). Estimating the sample size is often facilitated by reference to tables, such as the one provided by Krejcie and Morgan (1970), especially when the total population is known (Krejcie & Morgan, 1970). According to Krejcie and Morgan (1970), the table is constructed from the formula for determining sample size; however, a table has not been available for publication. To address the existing

gap, Krecjie and Morgan came up with a table for determining sample size for a given population for easy reference.

The formula was constructed as per below:

$$s = X^2NP\,(1 - P) \div d^2\,(N - 1) + X^2P\,(1 - P)$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Table 5.3 Table for Determining Sample Size for a Finite Population

Population (*N*)	**Sample Size (*s*)**	**Population (*N*)**	**Sample Size (*s*)**	**Population (*N*)**	**Sample Size (*s*)**
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351

Population (*N*)	Sample Size (*s*)	Population (*N*)	Sample Size (*s*)	Population (*N*)	Sample Size (*s*)
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note: *N*: population size. *S*: Sample Size
Source: Krecjie & Morgan (1970)

Therefore, the determination of the sample size in this study drew upon the well-regarded table provided by Krecjie and Morgan. Thus, based on the table, the minimum sample size (n) was 285. In order to enrich the analysis, the sample size exceeded the minimum requirement. Apart from that, the respondents to this study also included the board directors of BAZNAS of North Sumatera.

5.4.2.3 Research Instrument

Since this study used both qualitative and quantitative methods, interviews were employed for qualitative research objectives, while a structured questionnaire facilitated the generation of primary data for quantitative research objectives. Using these methods of data collection, 300 questionnaires were distributed to the respondents. Moreover, ethical consideration – a code of conduct and societal norm of behaviour – in research, as suggested by Uma Sekaran (2005), was strictly being given full attention by the researcher.

The main instruments used in this study consisted of closed-ended questionnaires and interviews. The quantitative data were obtained through closed-

ended questionnaires, and the qualitative data through interviews. The items in the questionnaires were mainly developed based on the research objectives and research questions. Sekaran and Bougie (2010) recommended the questionnaire design, which this study adopted. The survey questionnaires were in Bahasa Indonesia. According to Smith and Dainty (1991), the questionnaires started off with background information and an explanatory cover letter, which can assure the confidentiality of responses. Quantitative data were collected based on structured, closed-ended questions. In total, the questionnaire consisted of four (4) parts: Section A: Demographic Background, Section B: Reputation, Section C: Satisfaction of Zakat Distribution, Section D: Disclosure Practice, Section E: Trust in Zakat Institutions, and F: Blockchain Technology. The questionnaire employed a five-point Likert-type scale, where 5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, and 1= Strongly Disagree.

Through the creation of a demographic questionnaire, the researcher gathered information on the respondents' demographic characteristics. Characteristics addressed by the questionnaire were (a) gender, (b) age, (c) education, and (d) income. The characteristics were chosen based on a review of related literature. The items are shown in the following:

Table 5.4 Demographic Characteristics

Items	**Details**
Gender	Male
	Female
Age	20 years – 30 years
	30 years – 40 years
	40 years – 50 years
	50 years and above
Education	Primary
	Secondary
	Diploma
	Bachelor
	Master/PhD Professional Certificate

Items	Details
Income	Rp.1.000.000 – Rp.5.000.000
	Rp.5.000.000 – Rp.10.000.000
	Rp.10.000.000 – Rp.15.000.000
	Rp.15.000.000 and above
Job	Public sector Private sector

5.4.2.4 Data Collection

This research used the survey method to collect primary data from the Zakat payers of BAZNAS North Sumatera, while secondary data, such as books and reports, were collected from different sources to deepen the understanding of trust in Zakat institutions. The questionnaires were self-administered, with the help of some well-trained research assistants in some cases, to expedite the process of collecting data. To bridge the knowledge gap among the respondents concerning blockchain technology, particularly in the absence of prior implementation in Zakat institutions, an educational briefing was integrated into the research methodology. This briefing aimed to provide the participants with essential information about blockchain, including its fundamental concepts, functionalities, and potential applications within the context of charitable organisations. Delivered in a clear and accessible language, the briefing aimed to ensure that participants acquire a foundational understanding of blockchain, empowering them to formulate more informed opinions and perceptions regarding its potential adoption in Zakat institutions. This educational initiative was designed to enhance the quality and relevance of the participants' responses, thereby contributing to a more comprehensive and insightful analysis of their attitudes towards the prospective use of blockchain technology in the Zakat sector.

5.5 DATA ANALYSIS

5.5.1 Qualitative Data

All interview sessions lasted for about 35 to 45 minutes. During the interview, the researcher obtained the participants' permission to record the conversation. All interviews were audio recorded, and the sessions were transcribed for the qualitative analysis. All interviews were originally collected and transcribed into Indonesian language. The researcher was primarily responsible for translating all quoted narratives into English. As the primary goal of the interviews was exploratory in nature, there was no immediate need for coding the interview data at this stage.

5.5.2 Quantitative Data

The whole process of analysis comprised data cleaning, which included the detection and elimination of missing data and outliers; then the normality test, correlation analysis, multicollinearity, and singularity test, followed by the linearity and homoscedasticity assumptions, were verified to proceed with further analysis. Next, the demographic variables of the respondents were individually discussed. The descriptive statistics were analysed through the software SPSS 26.

5.5.3 Pilot Study

According to Thabane et al. (2010), pilot studies are an excellent way to determine the viability of a large-scale study. A pilot study enables the researcher to detect and correct any questionnaire inadequacies before conducting the main study (Mohamad et al., 2012). Additionally, it is to establish the appropriateness and relevancy of the instrument's questions. As a result, completing a pilot study prior to the major study can increase the likelihood of the main study's success and potentially help avoid hopeless outcomes (Thabane et al., 2010).

According to Isaac and Michael (1995) and Hill (1998), a pilot study with 10-30 participants is sufficient to conduct survey research. However, this study used 41 respondents for the pilot study to get a more significant result. The pilot study was conducted at Dinas Lingkungan Hidup Sumatera Utara (Environmental Service of North Sumatera Province) in Medan between April 28 and 31, 2022. Therefore, 41 civil servants who pay Zakat at BAZNAS North Sumatera were approached randomly in an online survey via Google Doc. This pilot study served as a guiding force, providing guidance in analysing potential defects such as time constraints, as well as assisting in the elimination of adverse events. It was definitely a time saver when problems and weak points in the items' validity and reliability were found early on.

The pilot study was directed at evaluating the reliability of the data obtained from the items. The reliability was measured by computing the data in SPSS Version 26.0. Cronbach's Alpha was measured to identify the appropriateness of the set of items designed to establish the correlation coefficient of the variables. The statistics were utilised to determine the items' internal consistency in order to obtain an adequate Cronbach's Alpha. Hence, the reliability (Cronbach's Alpha) reading of less than .60 is considered poor; .70 is an acceptable range; and over .80 is considered having good internal consistency (Sekaran, 2003). According to Ghazali (2008 , as cited in Mohamad et al. 2015), for the social sciences, the acceptable alpha value is .60, which is also practiced by other researchers. In short, the internal consistency and reliability of the present study were good. This could be used for the real study. The result of the reliability statistics is shown in Table 5.5. Based on the results shown in Table 5.5, all Cronbach's Alpha values were between 0.79 and 0.91, which indicates that the items are reliable (Tabachnick & Fidell, 2013).

Table 5.5 Pilot Study Results

Variables	Number of Items	Valid N	Cronbach's Alpha
Reputation (Rep)	5	41	0.797
Satisfaction of Zakat Distribution (SZD)	5	41	0.854
Service Quality (SQ)	5	41	0.807
Disclosure Practice (DP)	5	41	0.899
Blockchain Technology (BT)	5	41	0.917
Trust in Zakat Institution (TZI)	5	41	0.865

5.5.4 Data Entry

The pilot study was self-administered. For the purpose of this research. the researcher approached BAZNAS, North Sumatera, to obtain the location of the respondents. The questionnaires were distributed online via Google Forms. The respondents were then given the link to the Google Forms and they were able to access the survey on their mobile phones. The research assistants were with the respondents during the survey. After obtaining a sufficient number of copies for the preliminary pilot study, the researcher used the software SPSS 26 to enter the data analysis. The data were first coded for them to be able to be entered into the software, SPSS. There were no missing data, neither by the respondents nor by errors from the researcher's side.

5.5.5 Missing Data

In the pilot study, there were no missing data. However, it can occur in the final research data. In order to examine the missing data, it is essential to determine if it is totally random (MCAR), missing at random (MAR), or missing not at random (MNAR) (Tabachnick et al., 2007). The test for missing data is known as Little MCAR. If the test is significant, data are missing at random, and the only viable solution is the multiple imputation approach (Hair, 2006). Nevertheless, if the test is not statistically significant, the data are missing and not random. In this instance, a number of approaches are available. If more than 25 percent of the data are missing, it is best to delete the respondents (Pallant, 2001). Additionally, mean or mode could be used to fill in missing data.

5.5.6 Univariate and Multivariate Outliers

Outliers are anomalous values that contribute to data bias. If the aberrant value is found in a single item, it is referred to as a univariate outlier. If it is observed in more than two items or variables, it is referred to as a multivariate outlier (Tabachnick et al., 2007). To ensure the accuracy of the data, the entire case should be removed

whenever there is an outlier. Nonetheless, there are a variety of approaches for reducing the influence of outliers and keeping them in the analysis if the instances are essential to the study. In this pilot study, neither univariate nor multivariate outliers were identified. However, there might be outliers in the full set of data. The Mahalanobis distance test should be used to identify multivariate outliers. SPSS-generated box plots make it possible to observe univariate outliers clearly.

5.5.7 Univariate and Multivariate Normality

The normality test is essential for determining whether or not the data are normally distributed. The skewness and kurtosis of a distribution can be used to determine its normality. The univariate normality can also be analysed graphically with the aid of the SPSS-generated distribution plots. When the number of data points exceeds 200, normality is not an issue (Hair, 2006).

5.5.8 Correlation Analysis

The purpose of correlation tests is to assess the relationship between two or more variables in a data set. Correlation tests help to determine if there is a significant relationship between the variables, the strength and direction of the relationship, and whether there is any structure or pattern in the relationships (Field, 2013). This information is important for understanding the underlying relationships between variables. Hence, this study used Pearson's correlation coefficient, which is a measure of the linear relationship between two continuous variables. It ranges from -1 to 1, where -1 indicates a perfect negative correlation, 1 indicates a perfect positive correlation, and 0 indicates no correlation.

5.5.9 Multicollinearity and Singularity

Multicollinearity and singularity tests in data analysis help to identify when two or more predictor variables in a regression model are highly correlated or when one or more variables can be exactly predicted from a combination of others, which can lead to inaccurate results and unreliable models. The variables should have low correlation ratios to guarantee that they are distinct from one another. The problem with singularity is that the variable is redundant, which means that it is the same as or similar to another variable. Singularity and multicollinearity issues are brought on by bivariate or multivariate correlation, respectively (Kothari, 2004). Thus, for this purpose, SPSS's correlation matrix can be used to test for multicollinearity using Pearson's test.

5.5.10 Linearity and Homoscedasticity

Linearity and homoscedasticity are assumptions that need to be satisfied when using regression models. Linearity means that the relationship between the independent and dependent variables is linear. Meanwhile, homoscedasticity means that the variance of the errors is constant across all levels of the independent variable. In simpler terms, the linearity test checks if the relationship between the variables is straight or curved, while the homoscedasticity test checks if the errors are equally spread across the range of values of the independent variable. These tests are important to ensure the validity and reliability of the regression model and the accuracy of the predictions it produces. (Tabachnick et al., 2007).

This study used SPSS to test linearity and homoscedasticity. For linearity, SPSS can produce scatter plots of the dependent variable against each independent variable to visually assess the linearity assumption. In addition, the software includes statistical tests such as the Pearson correlation coefficient and the scatterplot matrix for assessing linearity. For homoscedasticity, SPSS can produce residual plots to visually examine the distribution of the errors across the range of independent variable values.

The assumption for linearity in SPSS is that the relationship between the dependent variable and each independent variable should be approximately linear. This means that as the value of the independent variable changes, the expected value of the dependent variable changes at a constant rate. The assumption for homoscedasticity in SPSS is that the variance of the errors should be constant across all levels of the independent variable. This means that the distribution of the errors should be similar across the entire range of independent variable values (Hair et al., 2019).

5.5.11 Reliability

The purpose of a reliability test in data analysis is to determine if a measurement instrument or survey consistently produces accurate results (Vogt, 2007). In other words, it means a way to identify or measure a variable. According to Mugenda (2003), reliability measures to what extent the research instrument yields consistent results or data after repeated trials. Reliability and replicability are related because reliable research is usually replicable. The reliability has different types; the common one is the reliability coefficients, which are the correlation coefficients. These coefficients are between 0.0 (which is inconsistent) and 1.0, which is entirely consistent (Vogt, 2006). Therefore, this study used Cronbach's alpha to measure the reliability of the items. All items were tested through a pilot study, and all items included were 0.7 and above. Hence, no reliability problem was found in this study.

5.5.12 Validity

The purpose of a validity test in data analysis is to ensure that a measurement instrument or survey accurately measures the construct or concept it is intended to measure (Hair et al., 2010). In other words, the validity test aims to evaluate whether the items are actually measuring the construct or concept of interest that the questionnaire is designed to assess. Typically, a survey questionnaire in research often measures different types of items, which include content validity and construct validity (Litwin, 1995). There are four ways to assess the validity of an instrument:

content, construct, convergent, and discriminant validity. These are used to look at how well the instrument works in real life, as explained in Chapter Six (data analysis and findings).

To assess the validity of the content, the instrument must be given to an academician in the field to check whether the questionnaire is actually measuring the variable it is intended to measure. It is a systematic way of assessing the questionnaire against the content of the study (Hair et al., 2007). However, all questions in this study were adapted and modified from existing literature to suit the context of this study. Four of the lecturers were from the IIBF (International Institute of Islamic Banking and Finance), who had checked the validity of the items and made them clearer and more comprehensible for the respondents.

Construct validity refers to the degree to which a measurement instrument accurately measures the intended construct. To achieve construct validity, there is a need to check for the convergent and divergent validity of the instrument. Convergent validity entails assessing the agreement between different measures that should measure the same construct, while discriminant validity investigates the differentiation between measures of different constructs.

5.5.13 Exploratory Factor Analysis

The purpose of Exploratory Factor Analysis (EFA) is to identify underlying factors that explain the correlations among a set of observed variables. EFA can identify a smaller set of latent factors that account for the majority of the variance in the observed variables. EFA is used to ensure that each item is included in the appropriate factor. In addition, it enables the researcher to minimise the number of items by eliminating irrelevant items or variables from a factor. Nevertheless, the EFA method consisted of numerous steps, starting with the correlation matrix of the variables, followed by the extraction and estimation of the number of factors in the present study. Bartlett's test of sphericity (KMO) and the communalities and anti-image table were required for this analysis.

5.5.14 Confirmatory Factor Analysis

The purpose of Confirmatory Factor Analysis (CFA) is to test and validate a pre-defined theoretical model of how observed variables relate to underlying latent factors. Unlike Exploratory Factor Analysis (EFA), which aims to uncover and explore the underlying factor structure, CFA evaluates the extent to which the observed data align with the hypothesised factor structure. The primary goal of CFA is to assess the goodness-of-fit between the observed data and the proposed model, thereby confirming or refuting the theoretical assumptions. CFA allows researchers to test specific hypotheses about the relationships between observed variables and latent factors, providing a means to evaluate the adequacy and validity of the theoretical framework. By examining model fit indices, CFA helps to determine the extent to which the proposed model accurately represents the observed data. The CFA consists of numerous steps, including assessing the measurement model, assessing the model fit, modifying the model (if necessary), and interpreting the estimated parameters and factor loadings.

5.5.15 Structural Equation Modeling

Structural Equation Modelling (SEM) is a statistical method that allows researchers to test complex relationships between multiple variables by incorporating measurement models and structural models to estimate the strength and direction of causal relationships among latent (unobserved) and observed variables (Tabachnick et al., 2007). An SEM model, for instance, can have multiple independent and dependent variables. The SEM can measure the relationships between factors that are made up of different variables or between variables that have already been measured. While the latter is a first-order factor, the former are known as second-order factors. Compared to other multivariate techniques, such as multiple regression, which have numerous shortcomings, this method performs far better. Confirmatory Factor Analysis (CFA) is the first stage of the full-fledged SEM method. In this study, the CFA model was made for each construct separately. Then, all of the constructs were put together to make the SEM model that was used to test the study's hypotheses. In this study, the

software, AMOS 24 (Analysis of Moment Structures), was used because it is good at analysing data, fits the study's sample size, possesses a strong theoretical framework, and makes assumptions of normality and multicollinearity. It is also the most appropriate programme for SEM models, surpassing Smart-PLS software, which is typically employed for small sample sizes and weak theoretical foundations (Matthews, Hair, & Matthews, 2018).

Weston and Gore (2006) stated that Structural Equation Modelling (SEM) has several advantages over other multivariate techniques, including the ability to estimate both direct and indirect effects, handle latent variables, test mediation and moderation effects, and handle complex models with multiple dependent and independent variables. Additionally, SEM provides measures of model fit that can help researchers evaluate how well their models fit the data, making it a valuable tool for testing complex theoretical models. These features make SEM a powerful statistical technique for researchers looking to gain insights into the relationships between multiple variables. Table 5.6 depicts the summary of the research objectives based on the data analysis technique.

Table 5.6 Summary of the Research Objectives based on Data Analysis Technique

No.	Research Objectives	Data Analysis Technique
1	To explore issues and challenges facing BAZNAS North Sumatera, especially in collecting and distributing Zakat funds	Interview
2.	To identify the Zakat payer's attitude determinants towards trust enhancement in BAZNAS North Sumatera	SEM AMOS
3.	To investigate the impact of Zakat payers' attitude determinants on trust in BAZNAS North Sumatera	SEM AMOS
4.	To examine the mediating effect of blockchain technology between Zakat payers' attitude determinants and trust intention in the Zakat institution of BAZNAS North Sumatera	SEM AMOS

5.6 CHAPTER SUMMARY

This chapter provides detailed information on the methodological issues used in this research. The issues concerning research philosophy, design, approach, the population, the sample of this study, the data collection procedure, and the measurement of the variables have been addressed. The positivism paradigm was adopted due to its suitability for quantitative data collection and analysis. The sampling technique used in this study was simple random sampling. The information was collected through a structured survey. The data were then analysed using the SEM method. The questionnaire items were adopted from various studies and tested in a pilot study carried out in Medan. The model had neither a validity issue nor a reliability issue.

CHAPTER SIX

DATA ANALYSIS

6.1 INTRODUCTION

This chapter explains the analyses for the collected data related to quantitative and qualitative objectives. The qualitative data analysis included transcription of the audio recording of the interview into text format. The transcripts were read through, and the data were reviewed from the participants' perspectives. The quantitative data analyses included data screening relating to missing data, outliers, normality, correlation, multicollinearity, and linearity for the quantitative study. The descriptive data and demographic variables of the respondents are presented in tables and figures. The confirmatory factor analysis (CFA), exploratory factor analysis (EFA), reliability, and validity are also discussed in this chapter. Besides that, the results, findings, and hypothesis testing are demonstrated.

6.2 QUALITATIVE DATA ANALYSIS

The first research objective was to explore issues and challenges regarding collecting and distributing Zakat in BAZNAS, North Sumatera. An interview was carried out with the Deputy Director of the Zakat Collection at BAZNAS, North Sumatera, Drs. H. Musaddad Lubis, M. Ag., and the Deputy Director of the Zakat Distribution at BAZNAS, North Sumatera, Dr.H. Sultoni Trikusuma, MA. The steps in performing the data analysis involved transcribing the interview audio recording into text format and carefully reviewing and analysing the data from the participants' perspectives.

6.2.1 Issues and Challenges in Collecting Zakat Funds

Based on the data from the interview, it was found that the inadequate maximisation of Zakat collection funds can be attributed to the prevailing lack of literacy and socialisation regarding the concept of Zakat. Misconceptions persist with respect to

the proper classification of items subject to Zakat. For instance, some individuals hold the view that the yield from oil palm harvests is not subject to Zakat, and consequently, they do not allocate a portion of their palm oil harvest for Zakat purposes. The conflicting pronouncements made by religious leaders, some of whom acknowledge the Zakatability of palm oil harvests while others do not, further exacerbate such misunderstanding. As a result, these misconceptions adversely impact the amount of Zakat collected in North Sumatera.

Another instance of a prevalent misconception surrounding Zakat is the limited knowledge of certain individuals with respect to paying Zakat only on Eid al-Fitr without a proper understanding of the concept of Zakat Maal. The limited level of Zakat literacy can be traced back to the inadequate level of socialisation regarding Zakat among the religious leaders (ustadz) in North Sumatera. Despite the efforts of BAZNAS to disseminate knowledge on Zakat, the initiative remains suboptimal due to insufficient human resources.

Individuals expressed full agreement with the proposition of leveraging blockchain technology to enhance the efficacy and efficiency of Zakat collection. Hence, the BAZNAS of North Sumatera is currently in the process of adopting digital methods. One such example of digitisation is the acceptance of Zakat payments through QRIS (Quick Response Code Indonesian Standard) from multiple banks. However, preparation for digitalisation is challenging, as it requires the establishment of a competent infrastructure and a trained workforce. Several banks are presently undergoing evaluations to establish an MOU and engage in this digital initiative. Thus, this table summarises the issues and challenges in the Zakat collection.

Table 6.1 Summary of Challenges in Zakat Collection

Challenges in Zakat Collection	Details
Inadequate Maximisation of Zakat Collection Funds	- Lack of literacy and socialization about Zakat - Misconceptions on the classification of Zakatable items, such as oil palm harvests - Conflicting pronouncements by religious leaders contributing to misunderstandings
Limited Knowledge on Zakat Payment	- Some individuals incorrectly believe Zakat is only paid on Eid Al Fitr - Limited understanding of Zakat Maal concept - Insufficient Zakat literacy among religious leaders in North Sumatera - BAZNAS's knowledge dissemination efforts face challenges due to insufficient human resources
Challenges in Digitalisation of Zakat Collection	- Positive response to leveraging blockchain technology for efficient Zakat collection - BAZNAS North Sumatera's ongoing adoption of digital methods - Acceptance of Zakat payments through QRIS from multiple banks - Challenges in digitalisation preparation, requiring competent infrastructure and trained workforce - Banks undergoing evaluations for MOU and participation in the digital initiative

6.2.2 Issues and Challenges in Zakat Distribution

According to the interview data, the primary challenge North Sumatera BAZNAS was facing is the absence of comprehensive information regarding Zakat recipients. Thus far, BAZNAS has relied on data collected from their offices in various cities and

provinces. In order to address this issue, a programme is being developed by BAZNAS North Sumatera to ensure that every BAZNAS office within the region is well-informed and involved. Additionally, BAZNAS encounters difficulties in validating the eligibility of those to receive Zakat. A further challenge lies in the task of enhancing the religious devotion of *Mustahik*; presently, BAZNAS North Sumatera aims to elevate the piety of *Mustahik*, thereby enabling them to become devout Muslims, alongside the distribution of Zakat. Moreover, *Mustahik* who have received financial assistance from companies are provided with ongoing support to facilitate their transition from *Mustahik* to *Muzakki* (those who give Zakat).

Currently, *Muzakki* can access the BAZNAS website to acquire a comprehensive understanding of the Zakat distribution process. The website provides valuable information regarding the distribution of Zakat, and the individuals expressed keen interest in the potential of blockchain technology to enhance the transparency and real-time reporting of Zakat distribution reports. By tracking the location of funds through a blockchain-based system, the distribution of Zakat will be rendered with more transparency, which will undoubtedly prove advantageous for *Muzakki* who have previously faced challenges in obtaining such information.

This table outlines the key issues and challenges identified in the collection and distribution of Zakat funds, as gleaned from an interview conducted in North Sumatera. The challenges in Zakat collection encompass misconceptions, limited literacy, and digitalisation hurdles, while distribution challenges involve the lack of comprehensive recipient information, validation difficulties, and the need to enhance the religious devotion of recipients. This table provides a summary of the challenges of Zakat distribution.

Table 6.2 Summary of Challenges in Zakat Distribution

Challenges in Zakat Distribution	Details
Lack of Comprehensive Information on Zakat Recipients	- BAZNAS North Sumatera faces challenges due to the absence of comprehensive information about Zakat recipients - Reliance on data collected from various offices in cities and provinces
Difficulty in Validating Eligibility of Recipients	- BAZNAS encounters challenges in validating the eligibility of Zakat recipients
Enhancing the Religious Devotion of *Mustahik*	- BAZNAS North Sumatera aims to elevate the piety of *Mustahik* (Zakat recipients) to enable them to become devout Muslims - Ongoing support for *Mustahik* who received financial assistance, facilitating their transition from *Mustahik* to *Muzakki* (those who give Zakat)
Access to Information on Zakat Distribution	- *Muzakki* can access the BAZNAS website for comprehensive understanding of the Zakat distribution process - Keen interest in using blockchain technology for enhanced transparency and real-time reporting - Blockchain system to track funds for increased transparency, benefiting *Muzakki* who previously faced challenges in obtaining such information

6.3 QUANTITATIVE DATA ANALYSIS

6.3.1 Data Description

The intended respondents in this study were civil personnel who regularly pay Zakat payments to BAZNAS North Sumatera Utara. According to BAZNAS North Sumatera, there were 62 civilised organisations in Medan city that pay Zakat on a

regular basis. During the survey, however, the researcher only visited seven institutions because these institutions have many Zakat payers compared to others. The institutions are: the Department of Environmental Services of North Sumatera; the Department of Culture and Tourism of North Sumatera; the Department of Communication and Information Service of North Sumatera; the Department of Library Service of North Sumatera; the Development Planning Agency at Sub-National Level Service of North Sumatera; the Women's Empowerment and Women's Protection Service of North Sumatera; and the Department of Library Service of North Sumatera. Table 6.3 summarises the overall number of respondents by institution:

Table 6.3 Summary of the Number of Respondents based on Institutions

No.	Institutions	No. Respondents
1	Department of Environmental Services of North Sumatera	38
2	Department of culture and Tourism of North Sumatera	60
3	Department of communication and information service	23
4	Department of Library Service of North Sumatera	44
5	Development Planning Agency at Sub-National Level service of North Sumatera	61
6	Women's Empowerment and Women's Protection Service of North Sumatera	14
7	Department of Industry and Commerce of North Sumatera	61
Total		301

The researcher, together with his assistants and five students from Universitas North Sumatera, went to the offices of civilised organisations to distribute the questionnaires online via Google Forms. Prior to distributing the questionnaires, the

researcher obtained permission from the office's head and explained the purpose of the survey. After obtaining authorisation, the researcher and his assistants approached the civil servant personnel at their desks and shared the link to the Google Forms, and they filled out the survey on their phones, occasionally using the research assistants' mobile phones.

Nonetheless, the researcher and the assistants faced several obstacles in convincing the personnel officers to respond. They were not familiar with the studies and the questionnaires, so they behaved indifferently and refused to respond. Some respondents did not give enough time to cooperate, so they responded only to a few questions and left the rest of the questionnaires unanswered. Meanwhile, some of the customers refused to answer certain demographic questions, such as age, income, and gender. However, the researcher and the assistants were able to overcome all of these challenges. The questionnaires were collected from March 29th to June 24th, 2022. The number of copies distributed was 400. Only 301 copies were returned after the distribution. The response rate was approximately 75 percent, which is an acceptable response rate. The sample size of n=301 was considered enough for this research. The sample size was determined based on the table by Krecjie and Morgan. Thus, based on the table, the minimum sample size (n) was 285. In order to enrich the analysis, 400 questionnaires were distributed. Nonetheless, this study did not have any missing data. This test was also performed using SPSS. The description of the data collection and response rate is shown in Table 6.4.

Table 6.4 Summary of Data Collection and Response Rate

Responses	**Total**
Distributed Questionnaires	400
Returned Questionnaires	301
Response Rate	75%
Outliers	-

6.3.2 Data Screening and Statistical Assumption

The data should be filtered to fulfil all SEM model analysis assumptions to be used properly. The process of data cleaning consists of several steps to get the data ready for statistical analysis. For this purpose, the present study began the data cleaning process with the analysis of the missing data. Then, the outliers were detected and eliminated. The final steps consisted of the analysis of data normality, homoscedasticity, and multicollinearity.

6.3.2.1 Missing Data

The problem of missing data is expected with the survey method. The data can be missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR) (Pallant, 2001). Upon initial inspection, using Little MCAR in SPSS, it is evident that there were no missing values in the data set, which is a positive sign as it indicates the thoroughness and accuracy of the data collection process. The following table shows this.

The absence of missing values in the data set provides a strong foundation for conducting reliable statistical analyses, as well as developing models and predictions based on the data. Furthermore, the absence of missing values also increases the generalisability of the findings and conclusions drawn from the data set. This is because the absence of missing values ensures that the sample is representative of the population of interest, thus reducing the chances of sampling bias. Overall, the fact that this data set contained no missing values is a positive attribute and greatly facilitated the data analysis process. The description of the missing data is presented in Table 6.5.

Table 6.5 Missing Data

Univariate Statistics							
			Std.	Missing		No. of Extremes[a]	
	N	Mean	Deviation	Count	Percent	Low	High
Age	301	2.78	0.791	0	0.0	0	0
Education	301	3.83	0.515	0	0.0		
Income	301	1.90	0.566	0	0.0		
Rep1	301	4.17	0.635	0	0.0	5	0
Rep2	301	4.00	0.751	0	0.0		
Rep3	301	4.04	0.675	0	0.0		
Rep4	301	4.09	0.567	0	0.0		
Rep5	301	4.08	0.611	0	0.0		
SZD1	301	4.18	0.563	0	0.0	3	0
SZD2	301	4.18	0.547	0	0.0	0	0
SZD3	301	4.18	0.567	0	0.0	3	0
SZD4	301	3.89	0.759	0	0.0		
SZD5	301	4.37	0.548	0	0.0	1	0
SQ1	301	4.19	0.542	0	0.0	2	0
SQ2	301	3.94	0.606	0	0.0		
SQ3	301	3.93	0.727	0	0.0	0	0
SQ4	301	4.07	0.706	0	0.0		
SQ5	301	3.73	0.672	0	0.0	0	0
DP1	301	3.89	0.771	0	0.0		
DP2	301	3.93	0.713	0	0.0		
DP3	301	3.93	0.722	0	0.0		
DP4	301	4.01	0.619	0	0.0		
DP5	301	3.86	0.763	0	0.0		
BT1	301	4.77	0.533	0	0.0		
BT2	301	4.75	0.517	0	0.0		
BT3	301	4.76	0.499	0	0.0		
BT4	301	4.58	0.719	0	0.0	5	0
BT5	301	4.71	0.547	0	0.0		
TZ1	301	4.22	0.558	0	0.0	3	0
TZI2	301	4.16	0.588	0	0.0		
TZI3	301	4.09	0.609	0	0.0		
TZI4	301	4.15	0.599	0	0.0		
TZI5	301	4.19	0.685	0	0.0	7	0
Gender	301			0	0.0		
a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).							

6.3.2.2 Outliers

Incorrect data entry may lead to outliers. There is a widely accepted rule-of-thumb that specifies how outliers can be treated. In general, there are two types of outliers: an outlier univariate represents an extreme value for a single variable, and an outlier multivariate refers to an unusual combination of values for several variables (Hair et al., 2006; Kline, 2005). Outliers have a major influence on statistical inference. They increase error variance, reduce the power of statistical tests, and cause biassed estimates that may be of substantive interest (Majewska, 2015).

This study used the Mahalanobis Test for multivariate analysis. Mahalanobis distance measures the number of standard deviations that an observation is from the mean of a distribution. Since outliers do not behave as normally as usual observations, at least in one dimension, this measure can be used to detect outliers (Ghorbani, 2019). In this study, the data were assessed for multivariate outliers using a Mahalanobis Distance Test (Tabachnick & Fidell, 2013). To clean the data, this study used the rule P value = 0.001, which means all probability values that are less than 0.001 need to be deleted. Nevertheless, in this study, no multivariate outliers were identified. The summary of P-values is presented in Table 6.6.

Table 6.6 Summary of P-value of Each Item Using Mahalanobis Test

Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value
1	1.96421	0.146	101	3.06200	0.310	201	0.98519	0.036
2	3.91474	0.438	102	4.37089	0.503	202	0.98519	0.036
3	15.39282	0.991	103	1.08052	0.044	203	3.06200	0.310
4	7.46353	0.812	104	7.53932	0.816	204	10.10963	0.928
5	8.37492	0.863	105	2.10655	0.166	205	35.60806	1.000
6	17.19312	0.996	106	4.36083	0.501	206	15.29136	0.991
7	21.02829	0.999	107	11.94491	0.964	207	11.60388	0.959
8	15.98402	0.993	108	15.39282	0.991	208	2.63687	0.244
9	1.09848	0.046	109	5.76550	0.670	209	12.32564	0.969

Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value
10	4.43728	0.512	110	2.24423	0.186	210	4.36083	0.501
11	3.06200	0.310	111	17.12304	0.996	211	16.16856	0.994
12	32.00777	1.000	112	5.74950	0.669	212	4.11682	0.467
13	0.98519	0.036	113	1.53787	0.091	213	3.89877	0.436
14	1.95766	0.145	114	5.22751	0.611	214	4.05002	0.458
15	3.06200	0.310	115	5.42391	0.634	215	8.13061	0.851
16	2.97561	0.296	116	7.51610	0.815	216	0.98519	0.036
17	6.60013	0.748	117	1.50552	0.088	217	2.11571	0.167
18	6.89408	0.771	118	13.71098	0.982	218	4.31075	0.494
19	2.13464	0.170	119	2.97561	0.296	219	7.84430	0.835
20	4.87243	0.568	120	5.52144	0.644	220	0.98519	0.036
21	17.52879	0.996	121	0.87053	0.028	221	0.87053	0.028
22	4.90568	0.573	122	3.43622	0.367	222	4.44657	0.513
23	13.19629	0.978	123	3.75911	0.415	223	4.22104	0.482
24	6.24748	0.717	124	3.43622	0.367	224	0.87053	0.028
25	4.41659	0.509	125	2.71196	0.256	225	6.87347	0.770
26	12.44776	0.971	126	4.35090	0.500	226	2.87690	0.281
27	2.66894	0.249	127	9.14385	0.897	227	0.87053	0.028
28	10.25605	0.932	128	14.80610	0.989	228	6.89408	0.771
29	2.85861	0.278	129	5.82223	0.676	229	6.87347	0.770
30	16.40431	0.994	130	0.88784	0.029	230	10.50621	0.938
31	11.83245	0.963	131	5.42391	0.634	231	2.87690	0.281
32	5.92018	0.686	132	0.87053	0.028	232	2.13464	0.170
33	22.15914	1.000	133	4.25905	0.487	233	7.17404	0.792
34	5.82223	0.676	134	2.11571	0.167	234	2.87690	0.281
35	9.01356	0.891	135	0.98519	0.036	235	7.17404	0.792
36	1.50552	0.088	136	5.47284	0.639	236	2.06279	0.160
37	5.82223	0.676	137	0.98519	0.036	237	3.57739	0.388
38	3.93188	0.441	138	6.78558	0.763	238	15.51355	0.992
39	5.82223	0.676	139	0.98519	0.036	239	2.13464	0.170
40	5.42391	0.634	140	0.98519	0.036	240	3.59030	0.390

Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value
41	5.47284	0.639	141	0.98519	0.036	241	0.98519	0.036
42	8.71242	0.879	142	0.98519	0.036	242	1.53787	0.091
43	13.08722	0.977	143	0.98519	0.036	243	18.21909	0.997
44	25.99030	1.000	144	0.98519	0.036	244	22.43659	1.000
45	3.36061	0.355	145	0.98519	0.036	245	17.72878	0.997
46	3.19987	0.331	146	0.98519	0.036	246	5.76487	0.670
47	5.47284	0.639	147	0.98519	0.036	247	2.13464	0.170
48	0.98519	0.036	148	0.87053	0.028	248	0.98519	0.036
49	1.50552	0.088	149	0.85369	0.027	249	2.13464	0.170
50	2.40252	0.209	150	5.42391	0.634	250	0.98519	0.036
51	5.42391	0.634	151	0.98519	0.036	251	2.87690	0.281
52	5.47284	0.639	152	0.98519	0.036	252	5.33011	0.623
53	2.11571	0.167	153	0.98519	0.036	253	2.13464	0.170
54	5.47284	0.639	154	0.98519	0.036	254	2.13464	0.170
55	2.11571	0.167	155	0.98519	0.036	255	0.98519	0.036
56	6.60013	0.748	156	0.98519	0.036	256	5.41761	0.633
57	5.47284	0.639	157	0.98519	0.036	257	4.38278	0.504
58	4.25905	0.487	158	0.98519	0.036	258	2.13464	0.170
59	7.76471	0.830	159	3.62226	0.395	259	5.18913	0.607
60	0.87053	0.028	160	0.85369	0.027	260	4.38278	0.504
61	17.47316	0.996	161	0.98519	0.036	261	4.31075	0.494
62	1.95766	0.145	162	0.98519	0.036	262	2.13464	0.170
63	9.56965	0.912	163	2.11571	0.167	263	4.38278	0.504
64	15.41344	0.991	164	3.59030	0.390	264	2.87690	0.281
65	4.11599	0.467	165	0.98519	0.036	265	6.89408	0.771
66	3.06200	0.310	166	2.11571	0.167	266	2.13464	0.170
67	6.78558	0.763	167	6.78558	0.763	267	2.13464	0.170
68	5.42391	0.634	168	2.11571	0.167	268	2.13464	0.170
69	3.58111	0.389	169	0.98519	0.036	269	2.13464	0.170
70	0.85369	0.027	170	2.11571	0.167	270	2.13464	0.170
71	3.06200	0.310	171	0.98519	0.036	271	4.31075	0.494

Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value	Case No.	Mahalanobis	P-Value
72	6.89778	0.772	172	0.98519	0.036	272	2.13464	0.170
73	13.24166	0.979	173	0.98519	0.036	273	3.57739	0.388
74	19.60396	0.999	174	0.87053	0.028	274	2.13464	0.170
75	9.42457	0.907	175	2.11571	0.167	275	4.01183	0.452
76	4.36083	0.501	176	0.98519	0.036	276	2.13464	0.170
77	8.13017	0.851	177	5.42391	0.634	277	0.88784	0.029
78	6.78558	0.763	178	0.98519	0.036	278	6.87347	0.770
79	0.98519	0.036	179	5.42391	0.634	279	0.98519	0.036
80	0.87053	0.028	180	5.19650	0.608	280	6.02053	0.696
81	1.96421	0.146	181	0.98519	0.036	281	4.31075	0.494
82	3.34334	0.353	182	0.98519	0.036	282	3.85183	0.429
83	5.42391	0.634	183	0.98519	0.036	283	3.85183	0.429
84	4.11599	0.467	184	0.98519	0.036	284	4.51326	0.522
85	4.36683	0.502	185	2.11571	0.167	285	9.42457	0.907
86	12.77173	0.974	186	0.87053	0.028	286	4.31075	0.494
87	3.06200	0.310	187	2.97561	0.296	287	17.71693	0.997
88	5.74950	0.669	188	2.40252	0.209	288	5.18913	0.607
89	3.66624	0.402	189	0.98519	0.036	289	2.60582	0.240
90	2.82355	0.273	190	0.98519	0.036	290	0.87053	0.028
91	3.30560	0.347	191	5.19669	0.608	291	2.13464	0.170
92	2.59426	0.238	192	2.11571	0.167	292	2.13464	0.170
93	3.06200	0.310	193	0.98519	0.036	293	2.13464	0.170
94	3.49984	0.377	194	0.98519	0.036	294	2.13464	0.170
95	10.14063	0.929	195	0.98519	0.036	295	2.87690	0.281
96	10.27703	0.932	196	0.98519	0.036	296	0.98519	0.036
97	8.72670	0.880	197	0.98519	0.036	297	0.98519	0.036
98	10.07065	0.927	198	0.98519	0.036	298	0.87053	0.028
99	7.97053	0.842	199	1.09848	0.046	299	0.87053	0.028
100	7.40677	0.808	200	0.98519	0.036	300	2.87690	0.281
						301	2.87690	0.281

6.3.2.3 Normality

A normality test is a statistical test used to determine if a given data set is normally distributed, and its importance lies in ensuring that statistical analyses are valid and the results are meaningful. In Structural Equation Modelling (SEM), normality is an important requirement for a multivariate analysis. The distribution of data is expected to be normal (Hair et al., 2006). If the variables are not normally distributed, the model results may be biassed, and the validity of the model may be called into question. Brown (2006) suggested that a skewness value between -2 and +2 and a kurtosis value between -7 and +7 can be considered acceptable for most statistical analyses.

In this study, the researcher followed the guidelines suggested by Brown (2006), that is, to accept values of skewness that fall between -2 and +2, and kurtosis that is appropriate from a range of -7 and + 7. The results of the normality test are presented in Table 6.7.

Table 6.7 Multivariate Normality Test

	N	**Skewness**		**Kurtosis**	
	Statistic	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Rep	301	-0.616	0.140	1.550	0.280
SZD	301	0.084	0.140	-0.128	0.280
SQ	301	0.021	0.140	1.025	0.280
DP	301	-1.057	0.140	1.932	0.280
BT	301	-2.201	0.140	4.915	0.280
TZI	301	-0.736	0.140	2.516	0.280

Table 6.7 presents the outcome of the kurtosis and skewness tests. The variables presented are Reputation (Rep), Satisfaction of Zakat Distribution (SZD), Service Quality (SQ), Disclosure Practice (DP), Blockchain Technology (BT), and Trust in Zakat Institutions (TZI). The skewness values ranged from -2.201 to .084, within the recommended range of -3 to + 3 (Brown, 2006). Kurtosis ranged from -.128

to 4.915 was within the recommended range of -7 to + 7 (Brown, 2006). Thus, the normal distribution of the data showed consistency, with statistical values of skewness and kurtosis within acceptable ranges.

6.3.2.4 Correlation Analysis

Correlation is a statistical technique that measures the strength and direction of the linear relationship between two variables. To perform the correlation analysis, this study applied the Pearson correlation coefficient test. This is the test statistic that measures the statistical relationship, or association, between two continuous variables. It is known as the best method of measuring the association between variables of interest because it is based on the method of covariance. It gives information about the magnitude of the association, or correlation, as well as the direction of the relationship. The correlation is expressed in the form of a coefficient. Symbolised as *r*, a correlation is normally reported as a decimal number somewhere between +1.00 and -1.00.

Table 6.8 Correlation Matrix

	REP	SZD	SQ	DP	BT	TZI
REP	1					
SZD	.518**	1				
SQ	.593**	.479**	1			
DP	.525**	.291**	.511**	1		
BT	.319**	.295**	.354**	.370**	1	.
TZI	.548**	.385**	.448**	.464**	.379**	1

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 6.8, each cell in the matrix represents the correlation coefficient between the two variables in that row and column. A correlation coefficient measures the strength and direction of the linear relationship between two variables. The correlation coefficient ranges from -1 to 1, where -1 indicates a perfect negative correlation, 0 indicates no correlation, and 1 indicates a perfect positive correlation. The variables presented were reputation (REP), Satisfaction of Zakat Distribution

(SZD), Service Quality (SQ), Disclosure Practice (DP), Blockchain Technology (BT), and Trust in Zakat institutions (TZI). The correlation matrix in Table 6.8 shows the strength and direction of the linear relationship between the six variables: REP, SZD, SQ, DP, BT, and TZI. REP illustrated moderate to strong positive correlations with SZD, SQ, DP, and TZI and a weak positive correlation with BT. Meanwhile, SZD recorded moderately positive correlations with SQ and TZI. SQ possessed a strong positive correlation with DP and a moderate positive correlation with TZI. As for DP, it had a moderately positive correlation with TZI. Evidently, BT had weak positive correlations with all other variables, and TZI had strong positive correlations with all other variables except for BT. Overall, the correlation matrix in Table 6.6 shows small values, which indicates that the correlation between variables is weak. Therefore, variables are independent of each other.

6.3.2.5 Multicollinearity and Singularity

Hair (2006) claimed that multicollinearity and singularity are issues that can arise in multiple regression analysis when predictor variables are highly correlated with each other or when all of the predictor variables can be perfectly predicted by putting them together in a straight line. These issues can cause problems in the estimation of regression coefficients and lead to unreliable and unstable predictions. It is important to detect and address multicollinearity and singularity in order to obtain valid and reliable results from multiple regression analyses.

The tolerance indicator measures multicollinearity in a multiple regression model by indicating the unexplained variance in a predictor variable by other predictor variables. The Variance Inflation Factor (VIF) measures how much multicollinearity in a multiple regression model increases the variance of the estimated regression coefficient, with a range of values starting at 1 indicating no multicollinearity and increasing with higher values.

According to Hair et al. (2006), multicollinearity can be detected if all the variables' tolerance effects are less than 0.1 and the VIF is greater than 10. The

multicollinearity test result is presented in Table 6.9. The result showed that the values of VIF were less than 10, and all the tolerance effects were greater than 0.1. Therefore, the assumption of multicollinearity absence was confirmed, as shown in Table 6.9.

Table 6.9 Multicollinearity Test Result

Dependent Variables	Independent Variables	Collinearity	
		Tolerance	VIF
Trust in Zakat Institutions	Reputation	.519	1.927
	Satisfaction of Zakat Distribution	.674	1.484
	Service Quality	.547	1.827
	Disclosure Practice	.633	1.581

6.3.2.6 Linearity and Homoscedasticity

Homoscedasticity refers to the assumption that the variance of errors is constant across all levels of predictor variables, while linearity refers to the assumption that the relationship between the predictor and response variables is a straight line (Hair et al., 2006). A scatter plot is used to visually inspect whether the variance of the residuals is constant across all levels of the predictor variables, with a random pattern indicating homoscedasticity and a non-random pattern indicating heteroscedasticity. The normal P-P plot of regression standardised residuals under the linearity assumption is a graph used to assess whether the residuals are normally distributed by comparing the observed standardised residuals to their expected values under the assumption of a normal distribution.

Figure 6.1 is the normal probability plot graph, which shows the scatter plot of the independent variables' linearity with the dependent variable. The findings of this study indicate that the independent variables were linearly related to the dependent variable. Based on the scatter plot shown in Figure 6.1, there is a straight-line

association with trust in Zakat institutions (the dependent variable) across the independent variables. Thus, the assumption of linearity was confirmed in this study.

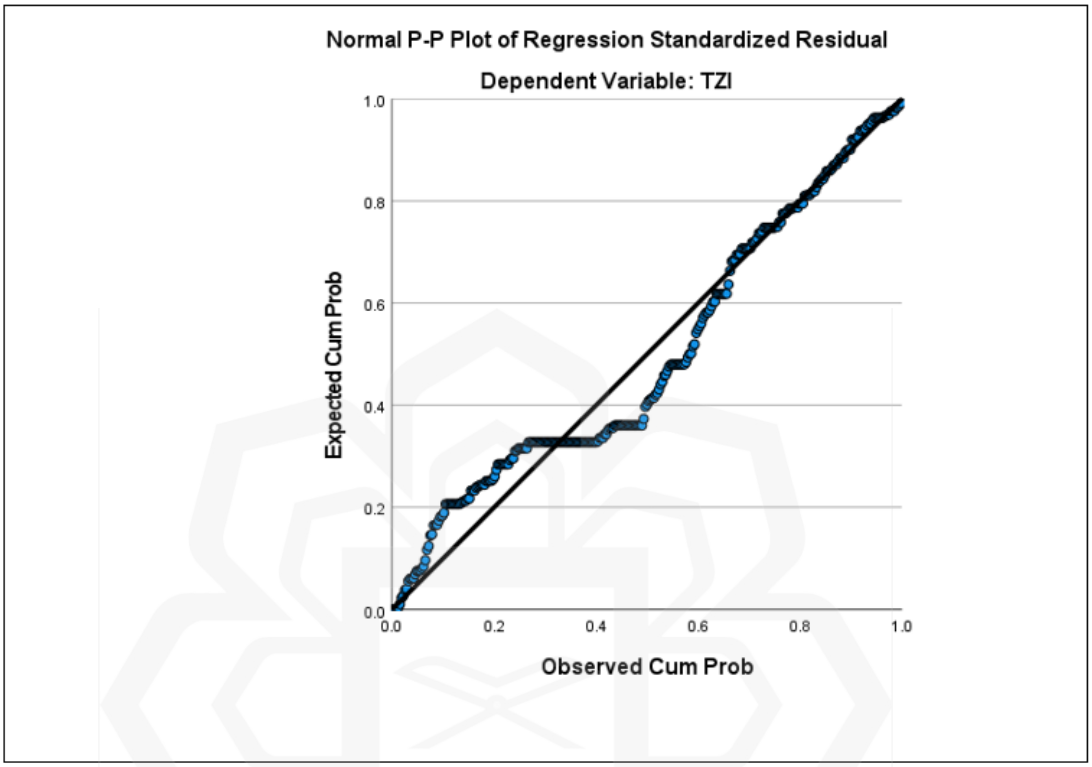


Figure 6.1 Linearity Assumption

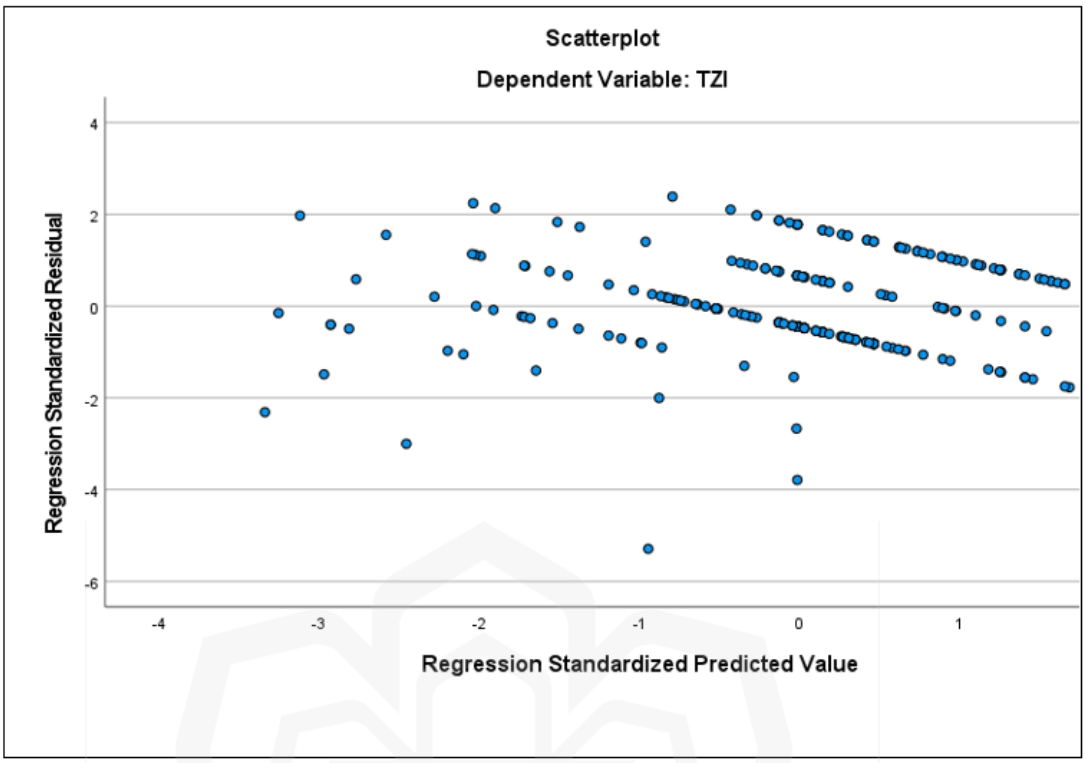


Figure 6.2 Homoscedasticity Assumption

Figure 6.2 shows the results of the homoscedasticity test using scattered plot diagrams of the standardised residual. It indicates that homoscedasticity existed in the set of exogenous variables, attitude, and the variance of the endogenous variable, trust in Zakat institutions. Figure 6.2 provides a visual inspection of the residual distribution indicated for the presence of homoscedasticity.

6.3.3 Descriptive of the Variables

The descriptive statistics is presented in this section. Firstly, the Zakat payers' profile, which includes age, gender, education, income level, and education level, is shown, followed by the descriptive construct variables.

6.3.3.1 Descriptive of the Demographic Variables

The demographic characteristics of the respondents are displayed in Table 6.10 according to their categories specified in the questionnaire. These categories are gender, age, education, and income. Following this is a detailed explanation with a graphical representation of the results in these categories.

Table 6.10 Demographic Profile of Respondents

Category	Item	Frequency (N=301)	Percentage (%)
Gender	Male	160	53.2
	Female	141	46.8
Age	20 – 30 years	15	5.0
	30 – 40 years	89	29.6
	40 – 50 years	144	47.8
	> 50 years	53	17.6
Education	Secondary School	19	6.3
	Diploma	12	4.0
	Graduate/Postgraduate	270	89.7
Income	Rp. 1.000.000 – Rp.5.000.000	57	18.9
	Rp. 5.000.000 – Rp.10.000.000	226	75.1
	Rp. 10.000.000 – Rp.15.000.000	10	3.3
	> Rp. 15.000.000	8	2.7

6.3.3.2 Gender

As seen in Table 6.11, females represented 142 (46.8%) respondents. The male respondents, however, were 159 (53.2%).

Table 6.11 Respondents' Gender

	Frequency	Percent
Male	160	53.2
Female	141	46.8
Total	301	100.0

6.3.3.3 Age

There were 144 respondents who were between the ages of 40 and 50 (47.8%), then those aged between the ages of 30 and 40 (29.6%). Meanwhile, there were 15 respondents aged between 20 and 30 years (5.0%), and those over 50 years old made up 53 respondents (17.6%). The distribution of the respondents by age is shown in Table 6.12.

Table 6.12 Respondents' Age

	Frequency	Percent
20 - 30 years	15	5.0
30 - 40 years	89	29.6
40 - 50 years	144	47.8
> 50 years	53	17.6
Total	301	100.0

6.3.3.4 Education

Regarding educational level, most of the respondents have a bachelor's degree. This was represented by 270 (89.7%), and the respondents who were in secondary school were 19 (6.3%) altogether, and the rest of the respondents were diploma holders, i.e., 12 (4.0%). Table 6.13 presents the distribution of the respondents by level of education.

Table 6.13 Respondents' Education

	Frequency	Percent
Secondary School	19	6.3
Diploma	12	4.0
Graduate / Postgraduate	270	89.7
Total	301	100.0

6.3.3.5 Income

In terms of income, most of the respondents have income ranging between Rp.5.000.000–Rp.10.000.000. This represents 226 (75.1%), followed by 57 (18.9%) respondents who have income between Rp.1.000.000- Rp.5.000.000. Meanwhile, 10 (3.3%) respondents have income between Rp.10.000.000–Rp. 15.000.000, and only 8 (2.7%) respondents have income over Rp.15.000.000. The distribution of the respondents by income is shown in Table 6.14.

Table 6.14 Respondents' Income

	Frequency	Percent
Rp. 1.000.000 - Rp.5.000.000	56	18.6
Rp. 5.000.000 - Rp. 10.000.000	226	75.1
Rp. 10.000.000 - Rp.15.000.000	11	3.7
> Rp. 15.000.000	8	2.7
Total	301	100.0

6.3.4 Descriptive Statistics of the Constructs

This study used a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) for all constructs. Table 6.15 indicates that the variable "Disclosure Practice" had the lowest mean of 3.8721, while satisfaction of the Zakat distribution had the lowest standard deviation of 0.45685. In contrast, the variable "Blockchain Technology" had the highest mean of 4.7409, followed by "Satisfaction with Zakat Distribution" and "Trust in Zakat Institutions" of 4.2757 and 4.2060, respectively. Additionally, the standard deviation of the variables was between 0.45685 and 0.71839.

Table 6.15 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
REP	301	2.00	5.00	4.1262	.53604
SZD	301	3.00	5.00	4.2757	.45685
SQ	301	2.00	5.00	3.9585	.49407
DP	301	1.00	5.00	3.8721	.71839
BT	301	2.00	5.00	4.7409	.51409
TZI	301	1.50	5.00	4.2060	.56636

6.3.5 Reliability of Construct

The reliability test was done through SPSS 27 via Cronbach's Alpha to test the items' consistency (Cronbach, 1951). The reliability test should be greater than 0.7 (Considine, Botti, & Thomas, 2005). Table 6.16 shows that all variables possessed a high value, i.e., greater than 0.7, which indicates that each variable was consistent with each other. Hence, the items were adequate and properly presented the variables.

Table 6.16 Reliability of Items

Variables	Number of Items	Valid N	Reliability
Rep	5	301	.863
SZD	5	301	.817
SQ	5	301	.800
DP	5	301	.944
BT	5	301	.932
TZI	5	301	.926

6.4 EXPLORATORY FACTOR ANALYSIS

According to Costello and Osborne (2005), exploratory factor analysis (EFA) is a statistical technique used to identify underlying factors that explain the observed relationships between variables. There are two steps in the EFA method, which are the extraction tool and the rotation method. The basic objectives of exploratory factor analysis (EFA) are to identify the underlying structure or factors that explain the relationships among a set of observed variables, reduce the number of variables by identifying a smaller number of underlying factors, simplify the interpretation of the relationships among the variables, and develop reliable and valid measures or scales for a construct by identifying the items that best represent the underlying factors. As was seen in the previous chapter, the majority of the items in this study were incorporated and modified from several studies (Chapter Five).

This study used the principal component analysis (PCA) reduction and the varimax rotation to simplify and interpret the factor structure. This study contained six factors: reputation, satisfaction of Zakat distribution, service quality, disclosure practice, blockchain technology, and trust in Zakat institutions. This analysis used the first-order factor, which means that each variable of a factor was examined individually.

There are several tests that can be performed in EFA to assess the underlying factor structure of a set of variables. Firstly, the tests of Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity are presented in Table 6.19. Next, the communality is presented in Table 6.20. The following test is the total variance of the factors, which is shown in Table 6.21. Then, the total component matrix is presented in Table 6.22. The anti-image table is presented in Table 6.18.

6.4.1 Correlation Matrix

A correlation matrix is a fundamental component of EFA, providing insights into the underlying structure of the data and guiding the extraction and interpretation of factors. The correlation matrix is used to identify patterns of correlation among the variables and to extract factors that account for the shared variance among the variables (Henson & Roberts 2006). Tabachnick and Fidell (2001) recommended inspecting the correlation matrix for correlation coefficients over 0.30. In other words, a loading of 0.3 indicates that the factors account for approximately 30% of the relationships within the data, or in a practical sense, it would indicate that a third of the variables share too much variance, making it impractical to determine if the variables are correlated with each other or the dependent variable (multicollinearity) (Williams, Brown et al. 2010). Hair, Anderson et al. (1995) categorised the correlation loadings as 0.30 = minimal, 0.40 = important, and 0.50 = practically. The cutoff for the correlation test is 0.90. As per Table 6.15, the correlation matrix of each item shows that all items were correlated and below 0.90, which means there was no multicollinearity.

Table 6.17 Correlation Matrix

Correlation Matrix[a]

		Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	SZD 1	SZD 2	SZD 3	SZD 4	SZD 5	SQ 1	SQ 2	SQ 3	SQ 4	SQ 5	DP 1	DP 2	DP 3	DP 4	DP 5
Correlation	Rep 1	1.000	.554	.553	.549	.480	.378	.392	.377	.391	.228	.389	.389	.251	.382	.360	.428	.359	.377	.428	.381
	Rep 2	.554	1.000	.632	.603	.516	.412	.432	.354	.433	.116	.346	.432	.317	.485	.368	.668	.579	.559	.466	.604
	Rep 3	.553	.632	1.000	.653	.542	.448	.452	.419	.437	.207	.437	.470	.305	.554	.397	.553	.512	.519	.534	.521
	Rep 4	.549	.603	.653	1.000	.546	.471	.561	.479	.410	.344	.378	.374	.339	.475	.405	.519	.486	.512	.491	.484
	Rep 5	.480	.516	.542	.546	1.000	.597	.606	.555	.478	.260	.568	.471	.388	.451	.369	.465	.465	.466	.474	.417
	SZD 1	.378	.412	.448	.471	.597	1.000	.686	.660	.491	.354	.542	.383	.277	.354	.291	.317	.358	.361	.349	.325
	SZD 2	.392	.432	.452	.561	.606	.686	1.000	.672	.471	.417	.551	.332	.326	.417	.267	.332	.367	.354	.408	.324
	SZD 3	.377	.354	.419	.479	.555	.660	.672	1.000	.525	.420	.594	.476	.348	.394	.347	.360	.354	.423	.394	.298
	SZD 4	.391	.433	.437	.410	.478	.491	.471	.525	1.000	.207	.373	.466	.204	.350	.348	.424	.430	.442	.457	.423
	SZD 5	.228	.116	.207	.344	.260	.354	.417	.420	.207	1.000	.370	.224	.219	.218	.129	.146	.155	.127	.215	.102
	SQ 1	.389	.346	.437	.378	.568	.542	.551	.594	.373	.370	1.000	.560	.399	.514	.316	.386	.441	.453	.481	.420
	SQ 2	.389	.432	.470	.374	.471	.383	.332	.476	.466	.224	.560	1.000	.491	.438	.551	.429	.477	.494	.437	.466
	SQ 3	.251	.317	.305	.339	.388	.277	.326	.348	.204	.219	.399	.491	1.000	.484	.437	.414	.434	.460	.402	.402
	SQ 4	.382	.485	.554	.475	.451	.354	.417	.394	.350	.218	.514	.438	.484	1.000	.335	.609	.567	.592	.555	.575
	SQ 5	.360	.368	.397	.405	.369	.291	.267	.347	.348	.129	.316	.551	.437	.335	1.000	.371	.369	.405	.351	.385
	DP 1	.428	.668	.553	.519	.465	.317	.332	.360	.424	.146	.386	.429	.414	.609	.371	1.000	.841	.824	.757	.754
	DP 2	.359	.579	.512	.486	.465	.358	.367	.354	.430	.155	.441	.477	.434	.567	.369	.841	1.000	.871	.802	.753
	DP 3	.377	.559	.519	.512	.466	.361	.354	.423	.442	.127	.453	.494	.460	.592	.405	.824	.871	1.000	.785	.719
	DP 4	.428	.466	.534	.491	.474	.349	.408	.394	.457	.215	.481	.437	.402	.555	.351	.757	.802	.785	1.000	.673
	DP 5	.381	.604	.521	.484	.417	.325	.324	.298	.423	.102	.420	.466	.402	.575	.385	.754	.753	.719	.673	1.000
Sig. (1-tailed)	Rep 1		<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001	<,001
	Rep 2	.000		.000	.000	.000	.000	.000	.000	.000	.022	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Rep 3	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Rep 4	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Rep 5	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	SZD 1	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	SZD 2	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	SZD 3	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	SZD 4	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	SZD 5	.000	.022	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.013	.006	.004	.014	.000	.038
	SQ 1	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	SQ 2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	SQ 3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	SQ 4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	SQ 5	.000	.000	.000	.000	.000	.000	.000	.000	.000	.013	.000	.000	.000	.000		.000	.000	.000	.000	.000
	DP 1	.000	.000	.000	.000	.000	.000	.000	.000	.000	.006	.000	.000	.000	.000	.000		.000	.000	.000	.000
	DP 2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.004	.000	.000	.000	.000	.000	.000		.000	.000	.000
	DP 3	.000	.000	.000	.000	.000	.000	.000	.000	.000	.014	.000	.000	.000	.000	.000	.000	.000		.000	.000
	DP 4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	DP 5	.000	.000	.000	.000	.000	.000	.000	.000	.000	.038	.000	.000	.000	.000	.000	.000	.000	.000	.000	

a. Determinant = 6,51E-007

6.4.2 Anti-Image Matrix

The anti-image correlation (AIC) matrix provides a measure of how well each variable is represented by the remaining variables in the correlation matrix, and helps to identify variables that are too highly correlated or redundant for factor analysis. High AIC values indicate low redundancy and suggest that the variable is suitable for inclusion in a factor analysis. The anti-image correlation matrix contains the negatives of the partial correlation coefficients. Table 6.18 assesses the adequacy of the correlation matrix for factor analysis. Most of the diagonal elements of the anti-image correlation matrix had a cut-off far above 0.67, which also indicates the usefulness of the data factor analysis (Tabachnick & Linda, 2007). However, Brown and Onsman (2010) proposed that the suitability of the data for factor analysis requires a cutoff of diagonal elements of the anti-image correlation matrix to be above 0.5. The inspection of the anti-image correlation matrix in this study revealed that all measures of the anti-image correlation matrix were above the acceptable level of 0.50, therefore indicating lower redundancy between variables.

Table 6.18 Anti Image Matrix

Anti-image Correlation	Rep 1	.958[a]																												
	Rep 2	-0.231	.926[a]																											
	Rep 3	-0.100	-0.185	.953[a]																										
	Rep 4	-0.154	-0.166	-0.309	.939[a]																									
	SZD 1	-0.025	-0.071	-0.075	0.004	.892[a]																								
	SZD 2	0.013	-0.129	0.010	-0.186	-0.352	.909[a]																							
	SZD 3	0.005	0.068	-0.011	-0.017	-0.336	-0.326	.883[a]																						
	SZD 5	-0.035	0.117	0.038	-0.172	-0.062	-0.090	-0.124	.895[a]																					
	SQ 2	-0.070	-0.084	-0.138	0.130	-3.482E-05	0.130	-0.240	-0.043	.913[a]																					
	SQ 3	0.023	0.020	0.074	-0.021	0.046	-0.095	-0.014	-0.096	-0.224	.952[a]																			
	SQ 5	-0.070	0.000	-0.018	-0.113	-0.047	0.047	-0.002	0.081	-0.312	-0.177	.934[a]																		
	DP 1	-0.054	-0.314	-0.043	0.046	0.081	0.128	-0.130	-0.046	0.148	-0.048	-0.015	.939[a]																	
	DP 2	0.146	-0.049	0.050	0.039	-0.107	-0.088	0.191	-0.077	-0.150	0.008	0.059	-0.302	.900[a]																
	DP 3	0.029	0.023	0.020	-0.118	0.048	0.132	-0.206	0.158	-0.008	-0.053	-0.050	-0.194	-0.467	.933[a]															
	DP 4	-0.143	0.252	-0.137	0.036	0.071	-0.168	0.016	-0.041	0.018	-0.035	0.024	-0.159	-0.256	-0.205	.947[a]														
	DP 5	0.031	-0.132	0.011	-0.096	-0.014	0.004	0.064	0.053	-0.087	-0.021	-0.052	-0.188	-0.191	-0.002	-0.109	.959[a]													
	BT 1	0.015	0.072	0.044	-0.116	0.250	-0.015	-0.225	-0.036	0.112	-0.042	-0.166	0.036	-0.182	0.131	0.029	0.116	.879[a]												
	BT 2	-0.062	-0.071	-0.059	0.106	-0.075	-0.049	0.103	0.091	-0.027	-0.090	0.100	0.089	-0.111	-0.019	0.154	-0.037	-0.386	.898[a]											
	BT 3	0.007	0.069	0.159	-0.113	-0.165	0.069	-0.013	-0.045	-0.028	0.060	0.055	-0.041	0.103	-0.115	-0.086	0.108	-0.234	-0.281	.925[a]										
	BT 4	0.015	-0.071	-0.055	-0.095	0.057	-0.031	0.102	0.085	0.106	-0.028	-0.001	-0.104	-0.121	0.093	0.040	0.045	0.051	0.026	-0.198	.927[a]									
	BT 5	0.072	-0.015	-0.086	0.115	-0.012	-0.049	0.059	-0.074	-0.100	0.013	-0.008	-0.053	0.272	-0.156	-0.035	-0.187	-0.188	-0.371	-0.299	-0.310	.894[a]								
	TZI 1	-0.011	0.118	-0.037	-0.045	0.053	-0.083	0.048	-0.087	-0.079	0.059	-0.019	-0.088	0.076	0.062	0.000	-0.009	0.061	-0.131	-0.006	0.187	-0.015	.931[a]							
	TZI 2	-0.084	-0.061	-0.019	0.078	0.072	0.016	-0.225	-0.013	0.087	0.026	0.003	0.065	-0.047	-0.022	-0.016	-0.062	0.089	-0.148	-0.084	-0.044	0.183	-0.395	.924[a]						
	TZI 3	-0.076	0.004	-0.093	0.026	-0.205	0.070	0.106	0.065	-0.001	-0.017	-0.018	0.088	-0.120	-0.022	-0.053	-0.008	-0.275	0.199	0.077	0.024	-0.120	-0.136	-0.364	.936[a]					
	TZI 4	0.027	-0.121	0.085	-0.104	0.135	-0.067	-0.009	-0.056	-0.112	0.070	-0.010	-0.044	0.024	0.039	-0.041	0.154	0.134	0.026	-0.040	-0.117	-0.037	-0.150	-0.193	-0.215	.928[a]				
	TZI 5	-0.025	0.083	-0.041	-0.005	-0.070	0.055	0.092	0.025	0.045	-0.118	0.002	-0.037	0.040	-0.042	-0.037	-0.082	-0.015	-0.046	-0.033	0.000	0.047	-0.158	-0.013	-0.086	-0.402	.951[a]			

6.4.3 Kaiser-Meyer-Olkin Index and Bartlett's Test of Sphericity

The Kaiser-Meyer-Olkin (KMO) and Bartlett tests are used in factor analysis to determine whether the data are appropriate by assessing the sampling adequacy of each variable, the correlation between variables, and whether the variables are uncorrelated in the population. Table 6.19 shows the results of these two tests. It can be seen from the table that the adequacy of sampling presented by KMO was 0.935, which is above the cut-score of 0.7 (Gie Yong & Pearce, 2013; Malhotra, Kim, & Agarwal, 2004). Bartlett's test was also significant ($p<0.001$). The loadings were set to be higher than 0.5.

Table 6.19 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.935
Bartlett's Test of Sphericity	Approx. Chi-Square	7.233.992
	Df	378
	Sig.	.000

6.4.4 Communalities

The basic objective of the communality test in exploratory factor analysis is to estimate the extent to which each observed variable in a dataset shares variance with the other variables and the underlying factors extracted by the EFA, which helps to assess the reliability and validity of the factor solution. MacCallum et al. (2001) suggested that a reasonable cut-off value for communalities in exploratory factor analysis (EFA) is 0.40, meaning that observed variables with communalities below this value may not be well-suited for factor analysis or may need to be redefined or combined with other variables to improve the overall factor solution. Table 6.20 presents the communality on the scale, which indicates the amount of variance in each dimension. It was also assessed to ensure acceptable levels of explanation in this study. The results showed that all communalities were over 0.40.

Table 6.20 Communalities

Items	Extraction	Items	Extraction
Rep1	0.624	DP1	0.858
Rep2	0.758	DP2	0.877
Rep3	0.682	DP3	0.853
Rep4	0.670	DP4	0.798
Rep5	0.624	DP5	0.743
SZD1	0.706	BT1	0.831
SZD2	0.755	BT2	0.880
SZD3	0.734	BT3	0.887
SZD4	0.464	BT4	0.721
SZD5	0.469	BT5	0.898
SQ1	0.672	TZI1	0.805
SQ2	0.725	TZI2	0.822
SQ3	0.620	TZI3	0.784
SQ4	0.563	TZI4	0.800
SQ5	0.723	TZI5	0.735

6.4.5 Total Variance Explained

The total variance explained aims to evaluate the adequacy of the factor solution and determine the number of factors to retain by assessing the proportion of variance in the observed variables that is accounted for by the underlying factors identified in exploratory factor analysis. After extracting the factors and obtaining the factor loadings, the total variance explained by the factors can be computed by summing the squared factor loadings for each factor and dividing by the total variance in the observed variables. There are many methods for extracting factors; the most commonly used ones are Principal Component Analysis (PCA) and Principal Axis Factoring (PAF). Several issues should be taken into consideration in order to choose the best extraction method. If the researcher is interested in an empirical summary rather than a theoretical solution (Tabachnick and Fidell, 2007), the minimum factors

required for the maximum portion of variance illustrated in the original set of variables (Hair et al., 2010) or wishes to establish preliminary solutions in EFA (Pett et al., 2003) are required, and the PCA method is recommended. Therefore, this research used the PCA method for factor extraction and the varimax rotation to make sure that all of the items were structured and belonged to the appropriate factors.

Table 6.21 presents the number of common variables extracted, the eigenvalues associated with these variables, the percentage of total variance accounted for by each variable, and the cumulative percentage of total variance accounted for by the variables. On the basis of Varimax Rotation, four factors were extracted from the initial solution. Each factor comprising all those variables had a factor loading greater than 1. Factor 1 accounted for 47.82 percent of the total variance explained in the original set of data; Factor 2 accounted for 10.26 percent of the total variance explained; Factor 3 accounted for 5.71 percent of the total variance explained; and Factor 4 accounted for 5.15 percent of the total variance explained. On the contrary, the rest of the other factors had eigen values less than 1, and they therefore explained less variance than a single variable. The cumulative percentage of variance explained the first four factors was 68.967 percent. In other words, 68.967 percent of the common variance that the 20 variables were justified by the four factors.

Table 6.21 Total Eigenvalues and Variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.566	47.829	47.829	9.566	47.829	47.829	4.819	24.097	24.097
2	2.052	10.262	58.090	2.052	10.262	58.090	3.612	18.060	42.157
3	1.143	5.717	63.808	1.143	5.717	63.808	3.209	16.047	58.204
4	1.032	5.159	68.967	1.032	5.159	68.967	2.153	10.763	68.967
5	.849	4.245	73.212						
6	.693	3.467	76.679						
7	.614	3.070	79.749						
8	.502	2.512	82.262						
9	.466	2.331	84.593						
10	.453	2.265	86.858						
11	.403	2.013	88.871						
12	.372	1.861	90.731						
13	.331	1.657	92.389						
14	.324	1.621	94.010						
15	.279	1.393	95.403						
16	.260	1.302	96.704						
17	.239	1.196	97.900						
18	.170	.848	98.748						
19	.139	.697	99.444						
20	.111	.556	100.000						

Extraction Method: Principal Component Analysis.

6.4.6 Factor Loading

Factor loading represents the correlation coefficient between an observed variable and a factor in factor analysis. It indicates the strength and direction of the relationship between the variable and the factor. This study used principal component analysis (PCA) and varimax rotation. The minimum factor loading criteria was set to 0.50. In this initial EFA, one item, "SZD4: I have no doubt about the quality distribution in my region" failed to load significantly on any dimension. Two items (i.e., "REP5: BAZNAS can be trusted on not allocating Zakat funds for non-relevant purposes" and "SQ4: BAZNAS North Sumatera understands customers' needs") loaded onto a factor other than its underlying factor. Hence, the three items were removed from further analysis. The researcher repeated the EFA without including these items. The results of this new analysis confirmed the four-dimensional structure theoretically defined in the research, as per the explanation below:

6.4.6.1 Factor Loading of Reputation

This factor comprised four items, Rep 1–Rep 4, with loads ranging from 0.609 to 0.706. They had a good image, Zakat collection transparency, reputable board members, and professionalism. This factor was labelled Reputation.

6.4.6.2 Factor Loading of Satisfaction with Zakat Distribution

This factor comprised four items with factor loadings ranging from 0.693 to 0.759. They were Islamic principal compliance, Government and Shariah Law Compliance, Distribution Trustworthy, and Better Distribution Facilities. This factor was labelled as Satisfaction of Zakat Distribution.

6.4.6.3 Factor Loading of Service Quality

This factor comprised three variables: Knowledgeable Staff, Convenience, as well as Fast and Efficient. Their factor loading ranged from 0.640 to 0.771. This factor was labelled Service Quality.

6.4.6.4 Factor Loading of Disclosure Practice

This factor consisted of five items: transparent information, information access ease, Zakat fund collection publishing, media communication, and information about *Mustahik*'s well-being development. The factor loading ranged from 0.753 to 0.870. It was labelled Disclosure Practice.

Table 6.22 Rotated Component Matrix

	Reputation	**Satisfaction of Zakat Distribution**	**Service Quality**	**Disclosure Practice**
Rep 1	0.657			
Rep 2	0.706			
Rep 3	0.656			
Rep 4	0.609			
SZD 1		0.726		
SZD 2		0.759		
SZD 3		0.758		
SZD 5		0.693		
SQ 2			0.708	
SQ 3			0.640	
SQ 5			0.771	
DP 1				0.825
DP 2				0.870
DP 3				0.816
DP 4				0.791
DP 5				0.753

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

The result of the exploratory factor analysis showed that the solution was based on four factors. As expected, all items were loading based on their own factors. The four-factor solution explained 68.967 percent of the total variance. The result of the factor analysis showed that all factors in this study possessed a good level of validity. Hence, this test also answered the second research objective, which was to determine the factors influencing the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera. Table 6.23 presents the summary of the EFA results.

Table 6.23 Summary of EFA Results

Indices	Rule of Thumb	Results	Decision
KMO Bartlett's test	KMO > 0.7	0.935	Fit
	P <0.05	0.000	Fit
Communalities	Extraction >0.5	>0.5	Fit
Total Variance Explained	Cumulative > 0.6	0.68	Fit
Rotated component Matrix	Loading > 0.5	>0.5	Fit

6.5 CONFIRMATORY FACTOR ANALYSIS

According to Hair et al. (2006), the purpose of the Confirmatory Factor Analysis (CFA) is to assess the validity and reliability of a measurement instrument, evaluate the factor structure of a set of variables, and confirm whether the variables are measuring the constructs they were intended to measure before going to structural equation modelling. Hair et al. (2006) suggested that the commonly used rule-of-thumb for assessing the strength of factor loadings is 0.40 or higher, and it is considered acceptable for the variable to be a reliable indicator of the latent factor.

The CFA checks that the items are included in the appropriate factors and ensures that the factor loadings are within a desirable range of values, much like the EFA. EFA and CFA are two statistical approaches that can examine the reliability and validity of items. However, CFA can illustrate the validity of a relationship between two variables, which EFA cannot do. The validity and reliability of each factor, or at

the very least a group of factors, should be ensured before deploying the CFA model. The CFA for each factor for this study is discussed separately in the paragraphs that follow, and then the whole measurement model is presented.

6.5.1 Assessing Measurement Model

A measurement model assessment in Confirmatory Factor Analysis (CFA) is to examine the associations or connections between the underlying latent variables and the observable manifest variables in a study. It assesses how well the observed indicators (measured variables) represent and measure the underlying latent constructs (factors).

6.5.2 Assessing Measurement Model for Attitude

This assessment includes the attitude variable and its factors. It is to confirm all the factors of attitude generated from the EFA. From the EFA, it was found that reputation, satisfaction of Zakat distribution, service quality, and disclosure practice were the factors influencing attitude. The researcher aimed to validate these factors using a measurement model within the CFA. The model is presented in Figure 6.3. Based on the indices in Figure 6.3, it can be observed that the normed chi-square value was 2.657, which is less than 5. This indicates that the model exhibited a relatively small chi-square value considering the sample size used. Furthermore, the Comparative Fit Index (CFI) value was 0.949, exceeding the threshold of 0.9. This suggests that the model demonstrated a good fit with the data. Additionally, the Root Mean Square Error of Approximation (RMSEA) value was 0.074, which is less than 0.08, indicating a low level of approximation error. Based on these findings, it can be concluded that the measurement model for attitude determinants utilised in this research demonstrated a good fit. It means that the dimension of attitude variables was valid.

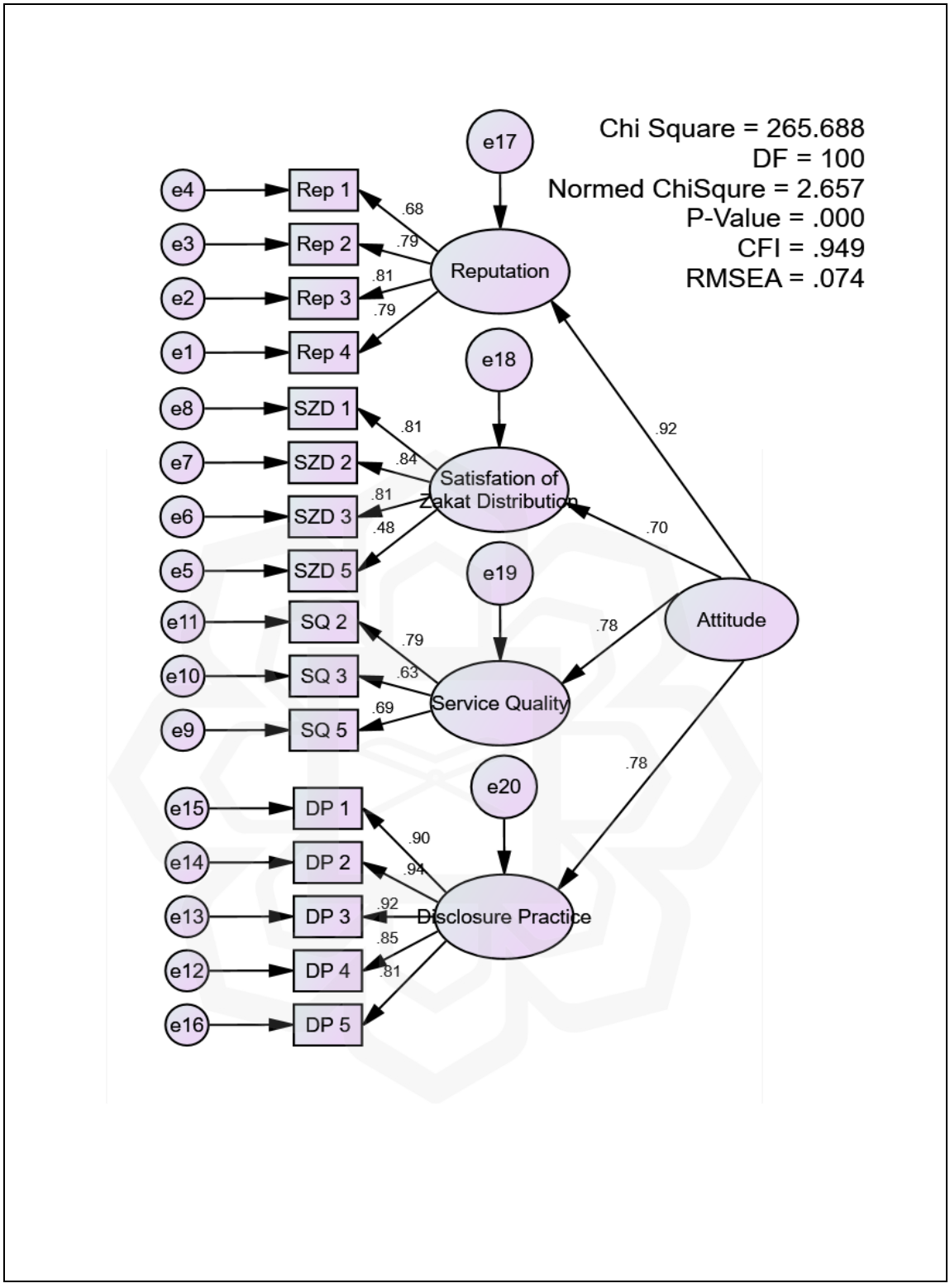


Figure 6.3 Measurement Model of Attitude Variable

6.5.3 Assessing Overall Measurement Model

This assessment included three variables and their dimensions, which are attitude, blockchain technology, and trust in Zakat institutions. Figure 6.4 illustrates the overall measurement model, which clearly required certain modifications. Upon careful evaluation of the revised confirmatory factor analysis (CFA) models for each variable, it became evident that adjustments were necessary. Figure 6.5 demonstrates the fit of the measurement model. According to the indices in Figure 6.5, the normed chi-square was 2.847 < 5, the CFI is 0.900, which hits the cut score of 0.9, and the RMSEA was 0.078 < 0.08. The recommended values are based on the guidelines of Hu and Bentler (1999) and Browne and Cudeck (1992). As a result, all indices adhered to the rule of thumb, and all items were maintained.

The factors influencing attitudes were reputation, satisfaction of Zakat distribution, service quality, and disclosure practice. Figure 6.4 illustrates the correlations between variables in the attitude factors. The variables were represented by latent variables, which are: reputation (Rep), satisfaction of Zakat distribution (SZD), service quality (SQ), and disclosure practice (DP). Relationships in the model did not fit; hence, some modifications were required. Thus, the items with low loading needed to be eliminated. Items that had a low factor loading of <0.5 were deleted. One item of the Satisfaction of Zakat Distribution (SZD 5) was deleted. The researcher found that certain covariance values between certain error terms were high. Additional error correlation based on the MI was created to improve the model fit for the measurement model. A correlation was made between two items of variable service quality, which are SQ4 and SQ2. The mediating variable was blockchain technology, which was represented by the latent variable blockchain technology (BT). During the modification, two items in blockchain technology were correlated, which were BT4 and BT5. The exogenous variable was trust in Zakat institutions, which was represented by the latent variable trust in Zakat institutions (TZI). Two items of variable trust in Zakat institutions, TZI4 and TZI5, were also correlated according to MI.

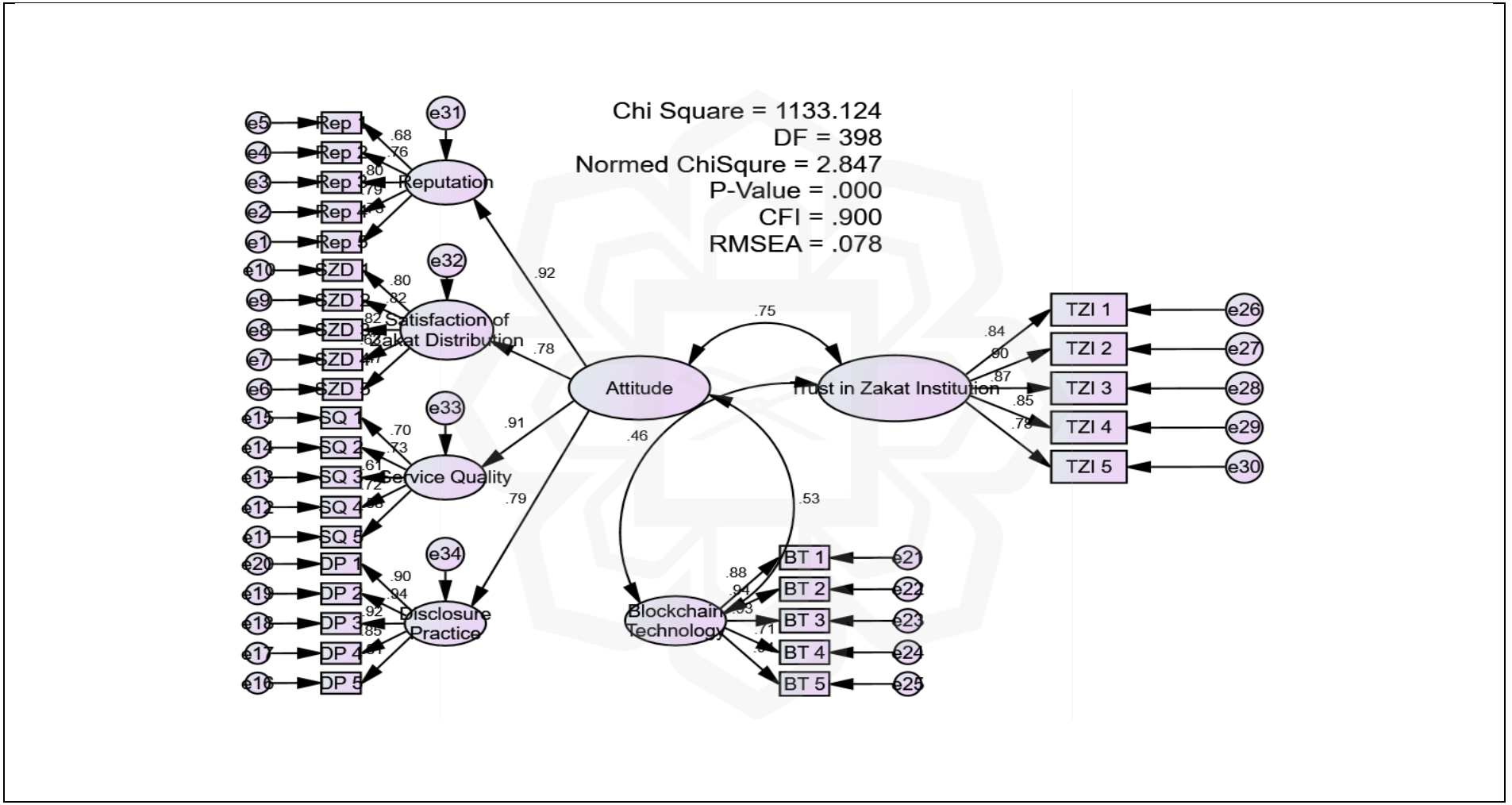


Figure 6.4 Measurement Model

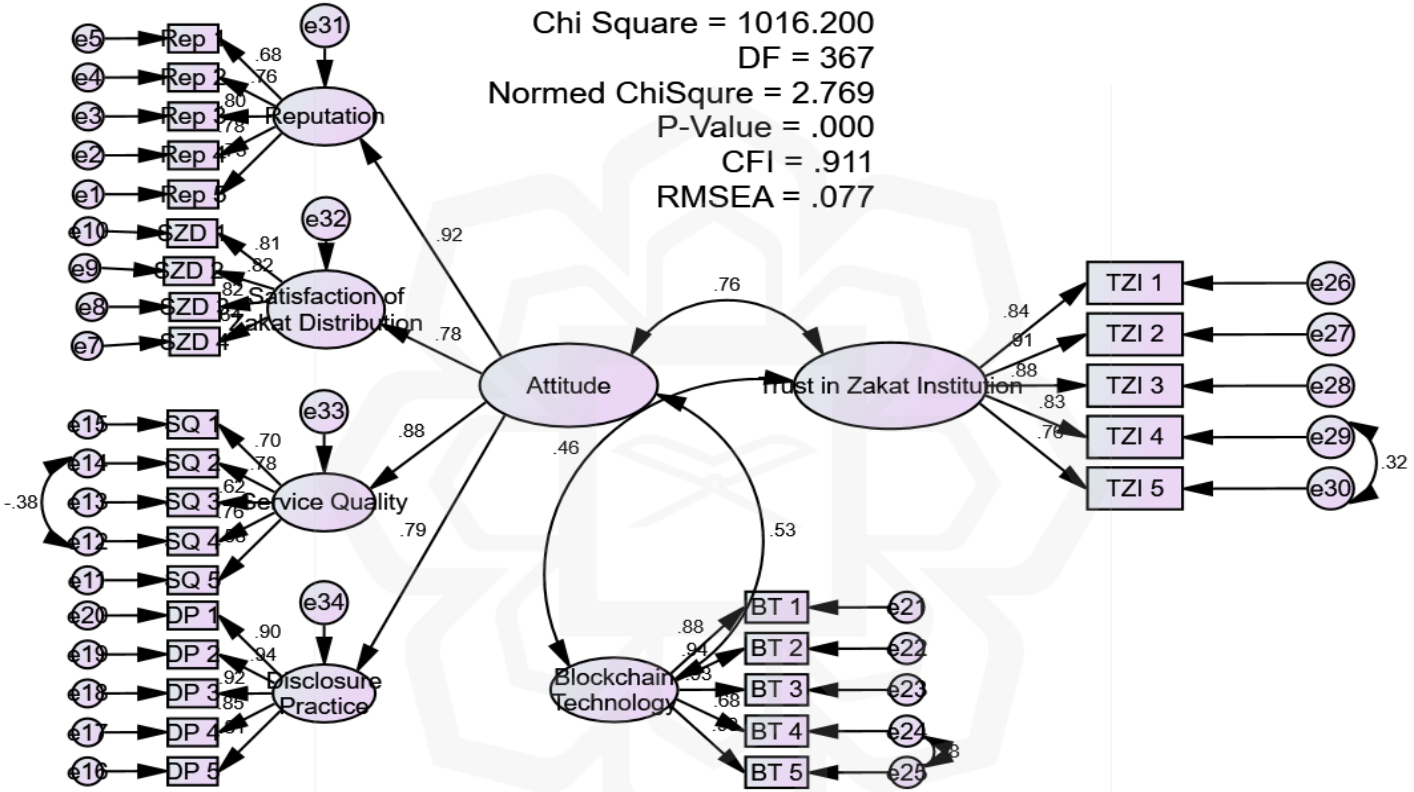


Figure 6.5 Modified Measurement Model

Figure 6.5 shows that all factor loadings were above .50, which is a good indicator of goodness of fit. For reputation, all the items have a factor loading greater than 0.5, which indicates that the items were very meaningful and adequate to measure the variable. The satisfaction of Zakat distribution had four items; the highest factor loading was .82 for SZD2 and SZD3. Service quality had five items, and the highest item factor loading was 0.78 for the fourth item, SQ2, while item SQ5 had the lowest factor loading of 0.60. The disclosure practice had five items, and the highest factor loading was 0.94 for the third item, DP2. Hence, this item explained 94 percent of the variable, and the lowest factor loading was 0.81 for fifth item DP5. The blockchain technology had five items, and three of them had high factor loading, which was above 0.90. The highest factor loading was 0.94 for the second item, BT2, while the lowest factor loading was 0.89 for the first item, BT1. The trust in Zakat institutions had five items; the highest factor loading was 0.91 for the third item, TZI2, and the lowest value of factor loading was 0.75 for the fifth item, TZI5.

6.5.4 Notes for the Model

The model's minimum chi-square was 1016.200, and it had 367 degrees of freedom. The probability value was 0.000. The p-value was less than the cut-score of 0.05, which means that the null hypothesis can be rejected and the alternative hypothesis can be accepted. The importance of chi-square is that it shows how well the model fits the data. The size of the sample is important for the chi-square test. Large sample sizes tend to have significant chi-square tests, while small sample sizes tend to have insignificant chi-square tests, which can mean that the model is not fit (Chou & Bentler, 1995). Nevertheless, the chi-square by itself is not enough to say whether or not the model is fit. Other indices should be looked at to make sure the model is accurate and can be used to test hypotheses.

6.5.5 Model Fit Indices

In order to assess the validity of the model, certain obligatory procedures must be followed. The indices of model fit, including Minimum Chi-Square (CMIN), The Root Mean Square Residual (RMR, Goodness Fit Index (GFI), Comparative Fit Index

(CFI), Tucker-Lewis Index (TLI), Root Mean Squared Residual (RMR), Root Mean Squared Error of Approximation (RMSEA), etc., should be evaluated and interpreted separately to confirm that the SEM model's assumptions are not violated.

6.5.5.1 Minimum Chi-Square (CMIN)

This value is the chi-square index divided by the degrees of freedom. This index might be less sensitive to the sample size. The criterion for acceptance varies across researchers, ranging from less than 2 (Ullman, 2001) to less than 5 (Schumacker & Lomax, 2004). The threshold for each parameter is CMIN/DF, which needs to be less than 5 to be acceptable and less than 3 to be considered good. In this study, the value of the normed chi-square was 2.769, which is an acceptable value.

Table 6.24 The CMIN Output

Model	**NPAR**	**CMIN**	**DF**	**P**	**CMIN/DF**
Default model	68	1016.200	367	.000	2.769
Saturated model	435	.000	0		
Independence model	29	7684.011	406	.000	18.926

6.5.5.2 The Root Mean Square Residual (RMR) and Goodness Fit Index (GFI)

The goodness-of-fit index (GFI) and the adjusted goodness-of-fit index (AGFI) are used to evaluate how well a given model fits a set of observed data. The GFI ranges from 0 to 1, with values closer to 1 indicating a better fit, and the range of values for the Adjusted Goodness-of-Fit Index (AGFI) is from 0 to 1. The GFI and AGFI in this study were 0.803 and 0.767, respectively, which are acceptable levels per the general rule-of-thumb (Tanaka & Huba, 1989). The parsimony goodness fit indices (PGFI) should also be between 0 and 1, and the higher they are, the better the fit. It is consistently lower than other indices (Mulaik et al., 1989). The PGFI in this study was 0.678, which is an acceptable value. Indicators for evaluating the goodness of fit in

relation to residual variances and covariances include the root mean square residual (RMSR), among others. RMR values should range from 0 to 1, with lower values indicating greater model fit (L. Hu & Bentler, 1999). In this study, the RMR was 0.025, which is within the normal range of the rule-of-thumb. The values of the modified measurement model are shown in Table 6.25.

Table 6.25 The RMR and GFI output

Model	RMR	GFI	AGFI	PGFI
Default model	.025	.803	.767	.678
Saturated model	.000	1.000		
Independence model	.177	.153	.093	.143

6.5.5.3 Comparative Fit

The normed fit index (NFI) calculates the difference between the chi-squares for the independent model and the current model. Its value must range from 0 to 1. The better the model fits, the higher the value. The NFI index for this study was 0.868, indicating a well-fitting model. By comparing the chi-square of the current model with the chi-square of the independent model minus the degree of freedom, the Incremental Fit Index (IFI) determines the goodness of fit of the model. The high value of IFI demonstrates a great model fit. The IFI in this study was 0.901, which is an acceptable value. The comparative fit index (CFI) also compares the current model of the study with other models by using different mathematical equations. The normal range for CFI is between 0 and 1, and the closer it is to 1, the better. This study's CFI was 0.911, which is considered a high and acceptable value. The Tucker-Lewis index (TLI), in contrast to the CFI, is a non-normed index, meaning that its value may fall beyond the range of 0 to 1. In this study, the TLI, which is essential for evaluating model fit, had a value of 0.901, close to the CFI. The values of the study's modified measurement model are shown in Table 6.26.

Table 6.26 The Baseline Comparison Indices

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.868	.854	.911	.901	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

6.5.5.4 Parsimony-Adjusted Measures

The parsimonious fit indices, also known as Parsimony-Adjusted Measures, are used to combine the model fit values into a single ratio, or PRATIO. The coefficients of NFI and CFI, respectively, are used to calculate the other two ratios, PNFI and PCFI. The model fits the data better with higher PRATIO values (near to 1). In this case, all parsimony values were high and very close to 1. PRATIO, PNFI, and PCFI values of 0.904, 0.784, and 0.823, respectively, were all above the cut score of 0.5 and this showed that the model was fit. The indices of the updated measurement model are displayed in Table 6.27.

Table 6.27 Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.904	.784	.823
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

6.5.5.5 The Root Means Squared Error of Approximation (RMSEA)

The difference in goodness-of-fit between the current and saturated models is compared using the root mean square error of approximation (RMSEA). The general rule of thumb accepts values lower than 0.10 (Hu & Bentler, 1999). The greater the

model's goodness of fit, the lower the RMSEA must be (less than 0.06). Typically, when the sample size is small, the RMSEA value is high, and vice versa. The RMSEA in this study was 0.077, which is still acceptable at 0.077<0.8, indicating a very good model fit. The usefulness of the updated measurement model is seen in Table 6.28.

Table 6.28 The RMSEA Result

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.077	.071	.082	.000
Independence model	.244	.240	.249	.000

The summary of the rule-of-thumb is presented in Table 6.29. It can be concluded that the model was overall fit and valid.

Table 6.29 Summary of Model Fit Indices

Index	Value	Rule of thumb	Decision
Absolute Fit Indices			
Normed chi-square	2.769	<5	Accepted /fit
Goodness Fit indices			
RMR	0.025	<.1	Accepted /fit
GFI	0.803	0-1	Accepted /fit
AGFI	0.767	0-1	Accepted /fit
Baseline comparisons			
CFI	0.911	>.90	Accepted /fit
IFI	0.911	>.90	Accepted /fit
TLI	0.901	>.90	Accepted /fit
NFI	0.868	0-1	Accepted /fit
Parsimony Adjusted Measures			
PRATIO	0.904	>.50	Accepted /fit
PNFI	0.784	>.50	Accepted /fit

Index	Value	Rule of thumb	Decision
PCFI	0.823	>.50	Accepted /fit
RMSEA	0.071	<.08	Accepted /fit
P-valued	0.000	<.05	Accepted /fit

6.5.6 Interpretation of Regression Weight, Covariance, and Correlation

6.5.6.1 Regression Weights

The standardised regression weights show the correlations between the observed and unobserved variables in the model. It shows which item has great significance for the corresponding variable. The low estimate indicates a less reliable item in the variable. For instance, the fifth item (BT2) had a significant impact on blockchain technology because of its high estimated value of 0.940. However, item (SQ3) was a moderately reliable item of the variable service quality because it had a moderate value of 0.619. Table 6.30 shows that all values of the standardised regression weights were moderate or high, which indicates that the items were reliable and well presented with their proper variables.

Table 6.30 Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Rep5	<---	Reputation	.726
Rep4	<---	Reputation	.783
Rep3	<---	Reputation	.802
Rep2	<---	Reputation	.764
Rep1	<---	Reputation	.682
SZD4	<---	Satisfaction_of__Zakat_Distribution	.635
SZD3	<---	Satisfaction_of__Zakat_Distribution	.819
SZD2	<---	Satisfaction_of__Zakat_Distribution	.819
SZD1	<---	Satisfaction_of__Zakat_Distribution	.806
SQ5	<---	Service_Quality	.580

			Estimate
SQ4	<---	Service_Quality	.761
SQ3	<---	Service_Quality	.619
SQ2	<---	Service_Quality	.779
SQ1	<---	Service_Quality	.696
DP5	<---	Disclosure_Practice	.806
DP4	<---	Disclosure_Practice	.852
DP3	<---	Disclosure_Practice	.920
DP2	<---	Disclosure_Practice	.936
DP1	<---	Disclosure_Practice	.900
BT1	<---	Blockchain_Technology	.885
BT2	<---	Blockchain_Technology	.940
BT3	<---	Blockchain_Technology	.928
BT4	<---	Blockchain_Technology	.683
BT5	<---	Blockchain_Technology	.930
TZ1	<---	Trust_in_Zakat_Institution	.837
TZI2	<---	Trust_in_Zakat_Institution	.910
TZI3	<---	Trust_in_Zakat_Institution	.878
TZI4	<---	Trust_in_Zakat_Institution	.831
TZI5	<---	Trust_in_Zakat_Institution	.756

6.5.6.2 Covariance

Covariance calculates the correlation between two variables. The possibility of a positive relationship between the two variables indicates that they are heading in the same direction. If the covariance is negative, it means that the two variables are moving in opposite directions. The estimate, standard errors, critical ratios, and p-values are depicted in Table 6.31. A p-value of less than 0.05 indicates that there is a strong relationship between the variables. However, a p-value greater than 0.05 shows that there is no relationship between the variables. Insignificant covariance shows that variables do not affect each other. In other words, changing one variable has no

impact on changing the other. Hence, the p-value of <0.05 in this study indicated that all variables had strong relationships with one another.

Table 6.31 Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
Blockchain_Technology	<-->	Attitude	.101	.015	6.738	***
Attitude	<-->	Trust_in_Zakat_Institution	.144	.018	8.022	***
Blockchain_Technology	<-->	Trust_in_Zakat_Institution	.101	.015	6.585	***

6.5.6.3 Correlation

Unlike covariance, correlation measures the strength of the relationship between two variables. The correlation coefficient ranges from -1 to +1, with values closer to 1 indicating a stronger relationship and values closer to 0 indicating a weaker relationship. A positive correlation means that as one variable increases, the other variable tends to increase as well.

Table 6.32 Correlations: (Group number 1 - Default model)

			Estimate
Blockchain_Technology	<-->	Attitude	.530
Attitude	<-->	Trust_in_Zakat_Institution	.757
Blockchain_Technology	<-->	Trust_in_Zakat_Institution	.461

Table 6.32 indicates low to moderate correlations between the variables. Therefore, the variables were either weakly or moderately correlated. This demonstrates that the variables were different and explains a specific part of the study.

6.5.6.4 Squared Multiple Correlations

The squared multiple correlations (R^2) measure the percentage that a variable explains for each item. For instance, item BT2 explained 88 percent of the variable accessibility's total variance. Table 6.33 shows that most items had a high squared multiple correlation, which indicates that they presented a large percentage of the variances in their proper variables.

Table 6.33 Squared Multiple Correlations: (Group number 1 - Default model)

Item	Estimate
TZI5	.572
TZI4	.690
TZI3	.771
TZI2	.829
TZ1	.701
BT5	.865
BT4	.466
BT3	.861
BT2	.884
BT1	.783
DP1	.810
DP2	.876
DP3	.847
DP4	.727
DP5	.650
SQ1	.484
SQ2	.606
SQ3	.383
SQ4	.579
SQ5	.337
SZD1	.649

Item	Estimate
SZD2	.670
SZD3	.670
SZD4	.404
Rep1	.466
Rep2	.584
Rep3	.643
Rep4	.613
Rep5	.527

A low squared multiple correlation shows that the item has a moderate percentage explanation of its variable's total variance. For example, item SQ3 had the lowest squared multiple correlation of 0.383. Therefore, item SQ3 explained 38 percent of the total variance of the variable service quality.

6.5.7 Internal Consistency and Reliability

The internal consistency and reliability of the measurement model are evaluated using Cronbach's Alpha and Composite Reliability (CR). The CR measures the internal adequacy of a construct. Henseler et al. (2009) and Kim and Cha (2002) suggested using CR rather than Cronbach's Alpha to measure internal consistency reliability because it is more effective and reliable. For the measurement model to have satisfactory internal consistency reliability, the composite reliability of each construct should exceed the recommended value of 0.70 (Hair et al., 2010, 2013). Table 6.34 shows the standard factor loadings and CR values of each construct. The CR values ranged from 0.907 to 0.943. All values were above the recommended threshold of 0.70. Based on the results, this research revealed a satisfactory internal consistency reliability.

Table 6.34 Standardised Factor Loadings and Composite Reliability

Name of the construct	Number of Items	Items	Factor Loading	CR
Attitude	19	Rep 1	0.68	0.907
		Rep 2	0.76	
		Rep 3	0.80	
		Rep 4	0.78	
		Rep 5	0.75	
		SZD 1	0.81	
		SZD 2	0.82	
		SZD 3	0.82	
		SZD 4	0.64	
		SQ 1	0.70	
		SQ 2	0.78	
		SQ 3	0.62	
		SQ 4	0.76	
		SQ 5	0.58	
		DP 1	0.90	
		DP 2	0.94	
		DP 3	0.92	
		DP 4	0.85	
		DP 5	0.81	
		BT 1	0.88	
		BT 2	0.94	
		BT 3	0.93	
		BT 4	0.68	
		BT 5	0.93	
Trust in Zakat Institutions	5	TZ 1	0.83	0.925
		TZ 2	0.91	
		TZ 3	0.87	
		TZ 4	0.83	
		TZ 5	0.75	
Blockchain Technology	5	BT 1	0.88	0.943
		BT 2	0.94	
		BT 3	0.92	
		BT 4	0.68	
		BT 5	0.93	

6.5.8 Validity

Validity evaluates whether the instruments employed in a study are appropriate for measuring the study objectives. It allows researchers to ensure that the instruments accurately measure the intended variables and not extraneous factors. The primary method of testing validity involves ensuring that the instruments used are reliable, which requires obtaining an acceptable reliability score. Christensen, Johnson, and Turner (2015) noted that this score can be measured using CR scores, which, in this case, were all within an acceptable range, as shown in Table 6.35.

6.5.8.1 Convergent Validity

Convergent validity looks at how likely it is that all of the items in a set measure the same construct. This validity can be inferred from the factor loadings in the measurement model. In this case, all the factor loadings were above 0.5, which indicates good convergent validity. The average of variance extracted (AVE) values should be above 0.5 to show convergent validity (Kline, 2015). Table 6.35 shows that the AVE values exceeded the threshold value of 0.5. As a result, there was no problem of convergent validity encountered in this research.

6.5.8.2 Discriminant Validity

Discriminant validity makes sure that the constructs are not the same and that each one measures a different part of the study (Hair et al., 2006). The discriminant validity test looks at how different two variables are from each other to make sure they are not the same and that there is a difference between them (Fornell & Larcker, 1981). So, the constructs should not be linked to each other. The discriminant validity is measured by comparing the (AVE) values with the (MSV) values of the most common shared variance. The MSV measures how well the variables fit together. All of the AVE values in this study were higher than the squared correlation between a group of constructs (MSV). As all of the AVEs were above 0.5, this means that they were all very good. Table 6.35 shows that all the MSV values were less than the AVE

values for all constructs, indicating that there was no problem of discriminant validity found. The values on the diagonal of Table 6.35 present the square root of the AVE values; all of them were above 0.7, emphasising the validity and credibility of the model.

Table 6.35 Convergent and Discriminant Validity

	AVE	**MSV**	**MaxR(H)**	**Attitude**	**Trust in Zakat Institution**	**Blockchain Technology**
Attitude	0.711	0.572	0.923	**0.843**		
Trust in Zakat Institution	0.713	0.572	0.934	0.757***	**0.844**	
Blockchain Technology	0.772	0.280	0.961	0.530***	0.461***	**0.878**

6.6 STRUCTURAL EQUATION MODEL

The study was conducted to test the hypothesis presented in a previous chapter (Chapter Four). Figure 6.6 presents the hypothesised model's results in the study. Based on the indices of the model, there was no issue of validity. All indices were in the acceptable normal value range: the CFI=.911>.90; the RMSEA=.077<.08; and the normed chi-square=2.769<5. Therefore, the hypotheses could be tested, and the results are presented in Table 6.36.

6.6.1 Hypothesis Testing and Results

AMOS 24 was utilised to conduct empirical testing of the hypotheses. The structural hypothesis model was made based on the study's goals and research questions. The following hypotheses were interpreted by analysing the SEM model:

6.6.1.1 Attitude Determinants and Trust in Zakat Institutions

The objective of the study was to investigate the impact of Zakat payers' attitude determinants on trust intentions in BAZNAS, North Sumatera. The determinants of attitude were reputation, satisfaction of Zakat distribution, service quality, and disclosure practice. The result of the hypothesis is presented in Table 6.36.

Table 6.36 Regression Weights

			Estimate (Path coefficients)	**S.E.**	**C.R.**	**P**	**Decision**
BT	<---	Attitude	.530	.076	8.009	***	
TZI	<---	Attitude	.712	.088	9.278	***	Supported
TZI	<---	BT	.084	.054	1.536	.124	

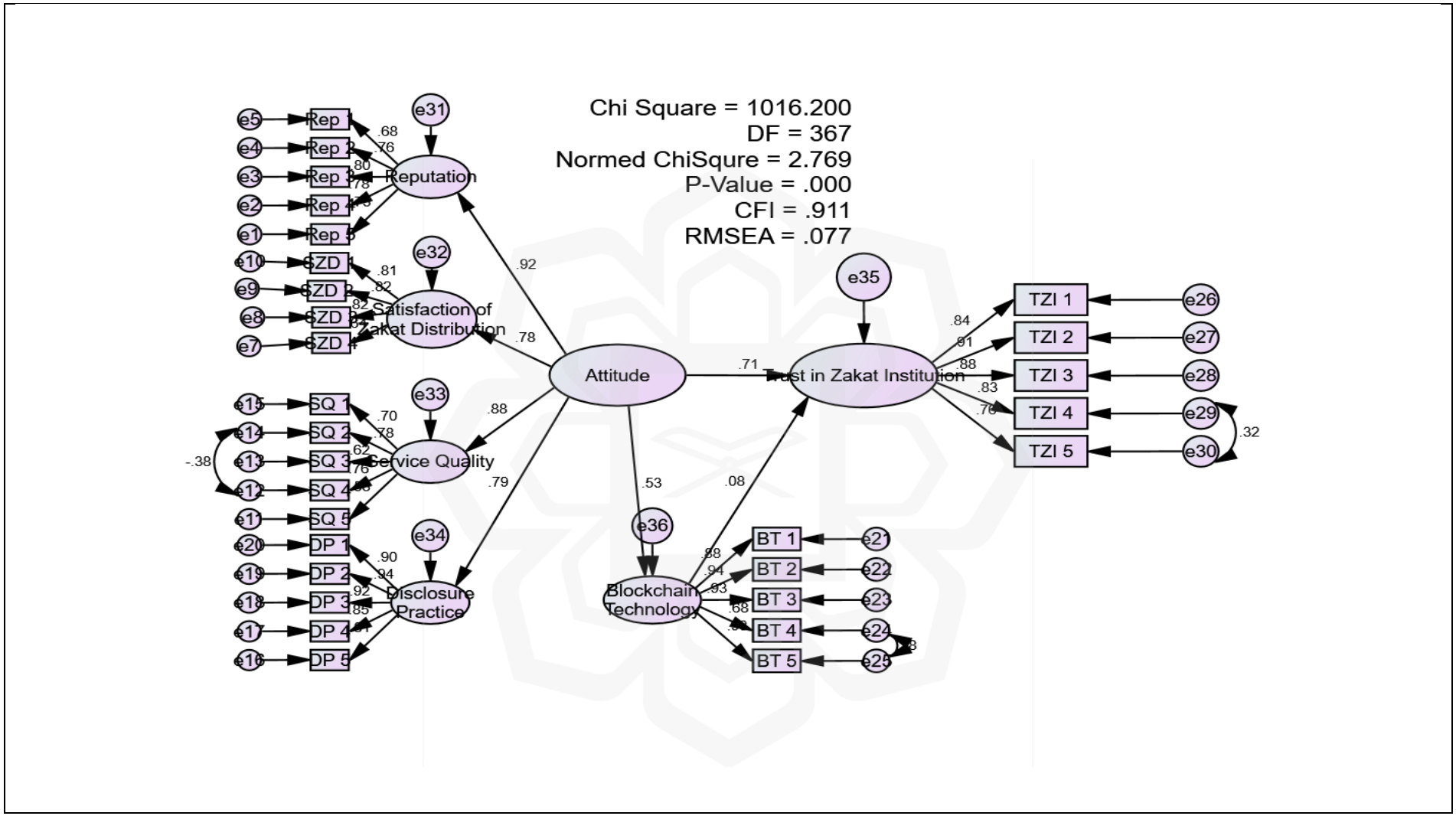


Figure 6.6 Structural Model (Hypothesized Model)

(H1): **Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, have a significant impact on the intention to trust in Zakat institutions.**

The hypothesis testing conducted on H1 was supported; thus, it was accepted. Referring to Table 6.36, the *p* value resulted in a significant value of less than 0.05, and the value of the C.R. was 9.278 >1.96, which means the attitude determinant relationship was significant and positive. Hence, there was a significant effect of attitude determinants on trust in Zakat institutions. This finding is in line with the result found in Sahban (2021), which states that attitude and subjective norms have positive effects on the intention of Zakat payers to patronise Zakat institutions in Kwara State, Nigeria. Meanwhile, Azura Mohd Noor and Jaffri (2016) proposed a research model that examines the influence of attitude and perceived service quality on Zakat compliance behaviour, taking into consideration trust as a mediator for those relationships. Also, this finding is supported by the Theory of Planned Behaviour.

6.6.1.2 The Mediation of Blockchain Technology

To test the mediation effect of blockchain technology on the relationship between attitude and trust in Zakat institutions, the bootstrapping method was used through AMOS 24. Table 6.37 presents the mediation effects of blockchain technology. Following the methodology of Baron & Kenny (1986) in analysing the mediation effect, two hypotheses should be tested to ensure that a variable has a mediation effect. These two hypotheses are presented as follows:

H2. Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, have a direct and significant impact on trust in Zakat institutions.

H3. Blockchain technology mediates the relationship between attitude determinants and trust in Zakat institutions.

Table 6.37 Bootstrapping Mediation Result

Hypothesis	Direct effect Coefficient	P-value	Indirect effect Coefficient	P-value	Bootstrapping Mediation Result
Attitude → Trust in Zakat Institution through Blockchain Technology	0.712	0.001	0.044	0.092	Partial Mediation

The hypothesis (H2) was supported; hence, it was accepted. Table 6.36 shows that the p-value was significant (P-value <0.05) and the value of C.R. was 9.278 >1.96, which indicates that the values were above the cut score rule of thumb and thus the relationship was significant. This hypothesis indicates that attitude determinants have a direct impact on trust in Zakat institutions. Meanwhile, based on the results in Table 6.37, the direct and indirect effects of the relationship between attitude and trust in Zakat institutions, demonstrated that there was a mediation effect of blockchain technology. The hypothesis (H3) between attitude determinants and trust in Zakat institutions had a significant indirect effect at 10% (p-value=0.092). Therefore, blockchain had a partial mediating effect on the relationship between attitude and trust in Zakat institutions.

To sum up the result, the second objective of this study was to determine the factors influencing the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera. From the independent variables tested using SEM, this study found that reputation, satisfaction of Zakat distribution, service quality, and disclosure practices had a significant influence on trust in BAZNAS, North Sumatera. The third objective was to investigate the impact of Zakat payers' attitude determinants on trust in BAZNAS North Sumatera. The study found that the attitude determinants significantly impacted Zakat payers' trust in BAZNAS North Sumatera. The fourth objective of the study was achieved when blockchain technology, in this study, revealed a partial mediation effect on the relationship between attitude determinants

and trust in Zakat institutions. As a result, blockchain technology has the potential to improve trust in institutions by providing a more transparent and secure system for managing Zakat.

6.7 CHAPTER SUMMARY

This chapter presents the data used in this study and the statistical methods employed to analyse them. In the first stage, the data were cleaned from all outliers and missing values, and fitted to fulfil all SEM analysis assumptions. Before the exploratory factor analysis was done, it was made sure that none of the SEM assumptions, like normality, homoscedasticity, or the collinearity test, were broken. The EFA was analysed to ensure that the items and constructs were ready to be examined in the SEM model and that all factor loadings were in the acceptable range. A few items were deleted to fit them into their proper factors.

After performing the EFA, the CFA needed to be conducted. The measurement model was established, and no issue was found in it. The indices fit perfectly, and no concern for convergent or divergent validity was found. Moreover, all the factors, including composite reliability, were above the cut score, proving that all constructs were reliable and valid. The SEM model (hypothesised model) was presented after the measurement model. The model was fit, and all indices were greater than the cut-score values. Then, the whole hypothesis of the model was interpreted. The first hypothesis (H1) results showed that attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, had significant impacts on trust in Zakat institutions. Meanwhile, according to the second hypothesis (H2), attitude determinants significantly influenced the use of blockchain technology. The third hypothesis (H3) showed that blockchain technology had no direct impact on trust in Zakat institutions. Therefore, H3 was not supported and rejected.

The bootstrap method was used to measure the mediation effect of blockchain technology on the relationship between attitude and intention to trust in Zakat institutions. There were two types of hypotheses that should be tested. Firstly, the direct impact of the independent variable (reputation, satisfaction of Zakat

distribution, service quality, and disclosure practice) on the dependent variable (trust in Zakat institutions). Secondly, the direct mediation and indirect mediation effects of the hypothesis should be tested. To test the fourth hypothesis, we found that reputation, satisfaction of Zakat distribution, service quality, and disclosure practice all had a direct effect on trust in Zakat institutions. To achieve the fourth objective, which was to examine the mediating effect of blockchain technology on Zakat payers' attitudes and trust in BAZNAS North Sumatera, this was tested. The result revealed that blockchain technology had a full mediation effect on the relationship between satisfaction of Zakat distribution, service quality, and disclosure practice. However, a partial mediation effect on the relationship between reputation and trust in Zakat institutions was found. Consequently, the fourth and last objectives of this study were attained.

The first objective was also accomplished when interviews with BAZNAS officials were carried out to determine where the challenges with Zakat distribution and collection are. Conclusion: Lack of Zakat literacy and Zakat socialisation are to blame for the difficulty in raising finances for Zakat so that it does not reach optimal levels, while challenges in acquiring *Mustahik* data are to blame for issues with Zakat distribution. Additionally, it may be inferred that BAZNAS strongly promotes the use of blockchain technology to boost their user confidence in BAZNAS, where all transactions can be displayed in a transparent and understandable way.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

This chapter includes an overview of all the study's findings, as well as the author's opinions about them. The study's findings are reported together with the primary objectives. In this chapter, the study's theoretical contributions and empirical implications are given. The conclusions of the hypotheses are substantiated with supporting arguments and comparisons to other research findings. The central bodies are given expanded recommendations. The study's limitations and possible areas for further research are covered in this chapter.

7.1 DISCUSSION OF HYPOTHESIS RESULTS

This study's main objectives were to first explore issues and challenges faced by BAZNAS in North Sumatera. Then, the study aimed to determine the factors of Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera and investigate the impact of Zakat payers' attitude determinant on trust intention in BAZNAS North Sumatera. Finally, the study delved into the mediation results of the blockchain technology on the relationship between attitude and intention on trust in Zakat institutions.

7.1.1 The First Objective

The first objective of the study was to explore issues and challenges faced by BAZNAS, North Sumatera, regarding collection and distribution. As per interview results, the Zakat monies that are collected at BAZNAS North Sumatera are not ideal, which is the main issue. The first is the *Mustahik* in North Sumatera's degree of Zakat literacy, influencing their understanding and adherence to Zakat practices. The diversity in comprehension gives rise to variations in the conception of Zakat payment, with some *Mustahik Mustahik* not contributing Zakat for the harvests of

palm oil, while others do. Another illustration would be that some *Mustahik* do not perform Zakat Maal since they only pay Zakat during Eid al-Fitr. The challenge with Zakat distribution thus far has been obtaining data on Zakat recipients. To solve these issues and challenges, using blockchain technology is the right answer. With this technology, the *Mustahik* can be reached directly, and the *Muzakki* can be found directly, i.e., where BAZNAS distributes Zakat.

Blockchain can provide transparency and accountability in the Zakat collection process, which can help build trust and increase Zakat funds. With blockchain, every transaction is recorded on a decentralised ledger that is accessible to everyone. This can reduce the possibility of fraud or mismanagement of funds. Additionally, smart contracts can be used to automate the collection, distribution, and auditing of Zakat funds, ensuring that the process is efficient and transparent. This can help increase the efficiency of Zakat collection and distribution, ultimately leading to a more effective use of the funds for its purposes.

7.1.2 The Second Objective

The second objective was to determine the factors influencing the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera. The presentation of exploratory factor analysis (EFA) was used to identify the component variable through principal component analysis via Varimax rotation. This was followed by the confirmatory factor analysis (CFA), based on the extracted and constructed reliability index, came next to validate the instrument. Through the empirical investigation, it was confirmed that there were four factors that influence Zakat payers towards trust enhancement in BAZNAS North Sumatera: reputation, satisfaction of Zakat distribution, service quality, and disclosure practice. Therefore, the second objective was achieved.

7.1.3 The Third Objective

The third objective was to investigate the impact of Zakat payers' attitude determinants on trust intentions in BAZNAS, North Sumatera. The tests showed that attitude determinants like reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, all had a positive effect on people's intentions to trust Zakat institutions. Therefore, the third objective of this study was achieved. The reputation, satisfaction of Zakat distribution, service quality, and disclosure practices of Zakat institutions play a significant role in building trust among Zakat payers.

A positive reputation can attract more *Muzakki* and increase the amount of Zakat collected. Satisfaction of Zakat distribution and service quality can enhance *Muzakkis*' perceptions of the effectiveness of the institution in fulfilling its charitable mission. Effective disclosure practices can increase transparency and accountability, which can help build trust by demonstrating that the institution is responsible and trustworthy. When Zakat payers perceive these factors positively, they are more likely to trust the institution and intend to donate their Zakat to it. Therefore, Zakat institutions must prioritise these factors to build and maintain trust with their Zakat payers, ensuring the success of their vision and mission.

The higher the reputation of the Zakat management organisation, the higher the intention of *Muzakki* to trust the Zakat institution. This is because BAZNAS, North Sumatera, has a good reputation and is goal-oriented, which is in accordance with their vision and mission. That is one of the proofs that BAZNAS, North Sumatera, has had good and responsible performance. Reputation cannot be achieved overnight. This is due to the fact that a reputation takes time and allows for public evaluation. A new reputation can survive and be sustainable if there is a consistency between words and deeds. This result confirmed the findings that reputation can influence *Muzakki* to pay Zakat (Jayanto et al., 2019). Another factor, i.e., satisfaction of Zakat distribution, also plays a crucial role in building trust in Zakat institutions. Zainal et al. (2016) proposed a research model that identifies satisfaction of Zakat distribution as a factor that influences stakeholder trust in Zakat institutions.

Service quality has a significant impact on the trust that Zakat payers have in Zakat institutions. Wahab et al. (2016) found that responsiveness and compliance were the strongest indicators influencing the satisfaction of Zakat payers, while reliability was the strongest indicator influencing the satisfaction of Zakat recipients. Mohd et al. (2020) also found that reliability and assurance had a significant relationship with customer satisfaction. Hafizah Zainal et al. (2016) proposed a research model that included service quality as a determinant of stakeholder trust in Zakat institutions. Additionally, Wahab et al. (2016) developed a Service Quality Index (SQI) for Zakat institutions, which found that both Zakat payers and recipients had high levels of satisfaction with service quality. These studies suggest that service quality is an important factor in building trust between Zakat donors and Zakat institutions.

The disclosure practices in Zakat institutions are of considerable significance in influencing the intention to trust. The investigations of Samargandi et al. (2018) and Aziz and Anim (2020) revealed that the disclosure practices exerted an influential effect on the trust of Zakat payers and Muslim business owners in Malaysia, respectively. Furthermore, Bin-Nashwan et al. (2021) demonstrated that trust in Zakat institutions strengthened the Zakat compliance of entrepreneurs in Yemen. Nonetheless, Htay and Salman (2014) contended that the financial reporting of Zakat institutions lacks appropriate guidelines, which warrants the need for the formulation of such guidelines. In conclusion, this study showed that disclosure practices had a positive impact on the trust that stakeholders in Zakat institutions in various countries placed in them.

7.1.4 The Fourth Objective

This study adopted the bootstrap method to test the blockchain technology's mediation effect on the relationship between attitude and trust in Zakat institutions. Two types of hypotheses were scrutinised in this study. Firstly, the hypothesis (H2) linking the direct impact of the independent variable (attitude) on the dependent variable (trust in Zakat institutions) was tested. Secondly, the indirect and mediation

effect hypothesis (H3) was tested. The results of the second hypothesis (H2) revealed that attitude determinants exert a direct and significant impact on trust in Zakat institutions. Furthermore, attitude determinants demonstrated indirect significance in influencing trust in Zakat institutions.

To achieve the fourth objective of the study, the third hypothesis (H3), which investigated the mediation effect of blockchain technology on the relationship between attitude determinants and intention to trust in Zakat institutions, was tested. The results revealed that blockchain technology had a partial mediation effect on the relationship between attitude determinants and trust in Zakat institutions. The direct relationship between attitude and trust in Zakat institutions was significant; hence, attitude determinants can influence trust in Zakat institutions without the use of blockchain technology. Therefore, a partial mediation effect was found between attitude determinants and trust in Zakat institutions, which can enhance trust in Zakat institutions by *Muzakki* as blockchain technology can provide better transparency and real-time transactions.

This result demonstrated that blockchain technology had a mediatory effect between the attitude dimension and trust in Zakat institutions. These results confirmed the findings of previous studies, which demonstrated that blockchain technology can enhance trust in Zakat institutions. This study stipulated that blockchain technology can partially influence trust in Zakat institutions. Consequently, the fourth objective of this study was attained.

7.2 SUMMARY OF FINDINGS

This study explored the issues and challenges faced by BAZNAS in the collection and distribution of Zakat in North Sumatera and determined factors affecting the Zakat payers' attitude towards trust enhancement in BAZNAS, North Sumatera. The study also investigated the impact of Zakat payers' attitudes on trust intentions in BAZNAS North Sumatera. Next, the direct and indirect effects of using blockchain technology on trust in Zakat institutions were determined. For the qualitative findings, the issue of collecting Zakat funds that causes the funds collected not to reach their potential

amount is because of a lack of knowledge about Zakat, so there is a misconception about what items can be Zakat or not. Meanwhile, the issues and challenges for distributing Zakat are the difficulty of getting data on *Mustahik* and monitoring the development of *Mustahik* after getting Zakat funds.

For the quantitative report, the hypotheses were tested through structural equation modelling techniques, and findings were extracted. Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practices, had a significant impact on trust in Zakat institutions. There were also significant direct and indirect effects of attitude determinants on the intention to trust Zakat institutions. Finally, blockchain technology showed a partially positive impact on the intention to trust Zakat institutions. Besides that, it played a mediation role in the relationship between attitude determinants and the intention to trust in Zakat institutions. Table 7.1 presents the main findings of the study and some references supporting them. Meanwhile, the qualitative analysis explored the issues and challenges faced by BAZNAS in collecting and distributing Zakat.

Table 7.1 Summary of Findings

No.	Research Objective	Research Question	Hypothesis	Results of Hypothesis	Decision
1	To explore issues and challenges facing BAZNAS SUMUT, especially in collecting and distributing Zakat	What are the issues and challenges faced by Zakat Institutions of BAZNAS North Sumatera in Zakat collection and distribution?		-	
2	To determine the factors influencing Zakat payer's attitude towards trust enhancement in BAZNAS North Sumatera.	What are the determines of Zakat payer's attitude toward trust enhancement in BAZNAS North Sumatera?		Factor 1: Reputation Factor 2: Satisfaction of Zakat distribution Factor 3: Service Quality Factor 4: Disclosure Practice	
3	To investigate the impact of Zakat payers' attitude determinants on trust in BAZNAS North Sumatera.	What is the impact of Zakat payers' attitude determinants on trust in BAZNAS North Sumatera?	(H1) Attitude determinants, namely reputation, satisfaction of Zakat distribution, service quality, and disclosure practice, have a significant impact on	Significant and positive	Supported in (Jayanto et al., 2019) (Mukhibad et al., 2019) (Mastura & Bidin, 2015) (Yenti et al., 2022)

No.	Research Objective	Research Question	Hypothesis	Results of Hypothesis	Decision
			the intention to trust a Zakat institution.		
4	To examine the mediating effect of blockchain technology between Zakat payers' attitude determinants and trust in Zakat institution BAZNAS North Sumatera.	Does blockchain technology play significant role in mediating the relationship between Zakat payer's attitudes' determinants and trust intention in Zakat institution of BAZNAS North Sumatera?	(H2). Attitude determinants have a direct and significant impact on trust in Zakat institutions. (H3). Blockchain Technology mediates the relationship between attitude determinants and trust in Zakat institutions.	Significant and Positive Partial Mediation	Supported

7.3 CONTRIBUTIONS AND RECOMMENDATIONS

Based on the findings of the study, the theoretical contributions are discussed in this section. In addition, practical implications and policy recommendations for the operators and managers of BAZNAS North Sumatera are addressed. Policymakers and the government of the North Sumatera province have a higher role in enhancing trust in Zakat institutions; thus, suggestions to do so are provided in the following paragraphs. The study's implications are discussed, along with some recommendations for the policymakers, operators, and managers of BAZNAS North Sumatera.

7.3.1 Practical Implications

7.3.1.1 Policy Implications of Reputation to Enhance Trust in Zakat Institutions

The study's findings revealed that the intention to trust Zakat institutions is affected by factors such as reputation, satisfaction of Zakat distribution, service quality, and disclosure practice. Therefore, the BAZNAS managers are recommended to enhance the quality of those factors. This proves that the four factors significantly influence trust in the Zakat institution. Below is the practical implication of the four factors.

Reputation plays a crucial role in enhancing trust in Zakat institutions. A positive reputation can increase confidence in the integrity of the institution and the effectiveness of its operations. This can lead to increased Zakat funds and support from Zakat payers. To build a strong reputation, Zakat institutions should focus on transparency, accountability, and communication. They should provide clear and concise information about their activities, finances, and impact. Utilising blockchain technology can greatly enhance their ability to do so by ensuring secure and transparent record-keeping of all transactions. They should also be accountable to their stakeholders and be willing to address any concerns or criticisms. By maintaining a positive reputation, Zakat institutions can build trust with their stakeholders and continue to fulfil their important role in supporting those in need.

When the reputation of a Zakat institution is highly regarded, they will be more trusted, and the *Muzakki* will like to use the services offered. On the contrary, when the reputation is underestimated, the *Muzakki* will not use the service. Good corporate governance can also help to maintain reputation; for instance, the board of directors and Sharia executive board can implement transparency and accountability principles during regular meetings. Besides that, the BAZNAS North Sumatera must have a professional election when having a new board of directors.

There are several ways in which BAZNAS North Sumatera can increase its reputation:

- Transparency: BAZNAS North Sumatera should be transparent in their operations and make sure that their finances are being used in a proper way. They should provide regular reports and audits to their donors and the public, and they should be open about their decision-making processes.

- Efficiency: BAZNAS North Sumatera should strive to be efficient in their operations, ensuring that the funds are being distributed to the right people in a timely manner. They should also ensure that their administrative costs are kept low so that the maximum amount of funds can be directed to the intended beneficiaries.

- Outreach: BAZNAS North Sumatera should actively engage with the community and raise awareness about their work. They can do this through various channels, such as social media, public events, and partnerships with other organisations.

- Collaboration: BAZNAS North Sumatera should collaborate with other reputable organisations in the community to strengthen their work and build trust with the public. This could include partnering with local mosques, community centres, or other charitable organisations.

- Impact: BAZNAS North Sumatera should measure and communicate the impact of their work. They should show how their funds have helped to

alleviate poverty and improve the lives of the beneficiaries. This can help build trust and credibility with the public.

By implementing these strategies, Zakat institutions can increase their reputation and build trust with the public, which can lead to increased support and Zakat funds.

This study also finds that blockchain technology can enhance trust in Zakat institutions. especially BAZNAS, North Sumatera. Blockchain provides transparency and accountability in BAZNAS North Sumatera operations. By using a decentralised and tamper-proof ledger, blockchain technology can ensure that all transactions are recorded and can be audited at any time, providing an unalterable record of all Zakat activities. This transparency not only ensures that Zakat funds are being distributed fairly and in accordance with Islamic principles, but also allows Zakat payers to see exactly how their contributions are being used. Additionally, blockchain technology can help prevent fraud and corruption by allowing for real-time monitoring of all transactions, making it much more difficult for any dishonest activities to go unnoticed. By utilising blockchain technology, Zakat institutions can provide a higher level of transparency and accountability, which in turn can help build trust with *Muzakki* and the wider community, ultimately strengthening BAZNAS North Sumatera's reputation as a trustworthy and effective organisation.

If the user has an Internet connection, simplify the Zakat payment process with a digital platform. Due to the system's integration with a payment gateway, payments can be made in cashless mode. The benefit that blockchain gives in this regard is that it prevents unauthorised users from accessing the network or altering data. Because of this, once the data are saved on the blockchain, they can practically never be removed or viewed by anybody other than the trusted entity. The usage of collected funds will be precisely tracked, thanks to blockchain technology, so that everyone can see where and why they are put to use.

7.3.1.2 Policy Implications of Satisfaction of Zakat Distribution to Enhance Trust in Zakat Institutions

One key policy implication of ensuring satisfaction with the distribution of Zakat is that it can greatly enhance trust in Zakat institutions. Muhammad and Jaffri (2016) investigated the dimensions of trust in Zakat institutions and their relationship with the intention to pay Zakat, finding that the quality of Zakat distribution is a reliable and valid dimension of trust. Bin-Nashwan et al. (2021) also suggested that trust in Zakat institutions plays a role in Zakat compliance decisions, with satisfaction with Zakat distribution being one of the factors that can enhance trust.

To achieve this, Zakat institutions need to prioritise the effective and efficient distribution of Zakat funds, ensuring that they are distributed in a fair and equitable manner to those who are eligible to receive them. This can be done by implementing robust systems and processes for identifying and verifying beneficiaries, as well as for distributing and monitoring Zakat funds. In addition, Zakat institutions need to prioritise communication and transparency with their donors and beneficiaries. This includes providing clear and concise information on their activities, finances, and impact, as well as ensuring that beneficiaries are kept informed about the status of their Zakat applications and payments. Additionally, Zakat institutions can also leverage technology, such as blockchain, to improve the transparency and accountability of their operations, which can further enhance trust in their work.

Blockchain technology can play a key role in enhancing the satisfaction of Zakat distribution by ensuring that Zakat funds are distributed in a transparent and accountable manner. By utilising blockchain technology, Zakat institutions can establish a tamper-proof and decentralised ledger that records all Zakat transactions. This can help prevent fraud and corruption by providing an unalterable record of all transactions that can be audited at any time. This level of transparency and accountability can enhance the satisfaction of both donors and beneficiaries, as they can be assured that Zakat funds are being distributed fairly and in accordance with Islamic principles.

Moreover, blockchain technology can streamline the distribution process, making it faster and more efficient. Smart contracts, which are self-executing contracts that automate the negotiation and execution of agreements, can be used to distribute Zakat funds automatically to eligible beneficiaries. This can help reduce the administrative burden of Zakat institutions and minimise the potential for human error, which can further enhance the satisfaction of donors and beneficiaries.

Overall, by prioritising the satisfaction of Zakat distribution and investing in systems, processes, and technology to enhance transparency and accountability, Zakat institutions can build trust with their donors, beneficiaries, and the wider community. This can ultimately lead to increased support for Zakat initiatives and a greater impact on addressing poverty and inequality.

7.3.1.3 Policy Implications of Service Quality to Enhance Trust in Zakat Institutions

Service quality is a crucial factor that can enhance trust in Zakat institutions. When Zakat institutions provide high-quality services to the Zakat payers and *Mustahiq*, it can help to build a positive reputation and increase trust in their operations. Sanuri et al. (2020) found that service quality, including reliability and assurance, had a significant relationship with customer satisfaction in a Malaysian Zakat institution. The service quality at BAZNAS North Sumatra reflects positive perceptions regarding its alignment with Islamic principles and knowledgeable staff (69% and 65% agreement, respectively), while indicating areas for improvement in office cleanliness and convenience (48% agreement) and the efficiency of staff counter service (52% agreement). Overall, the data suggests a generally positive attitude with room for enhancement in specific operational aspects.

Efficiency is important because *Muzzaki* and *Mustahiq* expect Zakat institutions to distribute Zakat funds in a timely and accurate manner. Reliability is also important because Zakat payers and beneficiaries need to have confidence that Zakat institutions will honour their commitments and deliver on their promises. Responsiveness is essential because Zakat payers and beneficiaries expect to receive

timely and accurate information about their Zakat applications and payments. Finally, empathy is important because Zakat payers and beneficiaries expect Zakat institutions to treat them with respect, compassion, and understanding.

Blockchain technology can streamline the distribution process, making it faster and more efficient. Smart contracts, which are self-executing contracts that automate the negotiation and execution of agreements, can be used to distribute Zakat funds automatically to eligible beneficiaries. This can help reduce the administrative burden of BAZNAS North Sumatera and minimise the potential for human error, which can further enhance service quality.

By providing high-quality services that meet these expectations, BAZNAS North Sumatera can enhance trust in their operations and build strong relationships with the Zakat payers and *Mustahiq*. This can lead to increased support for Zakat initiatives and a greater impact on addressing poverty and inequality in the community. To achieve this, BAZNAS North Sumatera needs to invest in the development of robust service quality frameworks, staff training, and technology infrastructure that support efficient, reliable, responsive, and empathetic service delivery.

7.3.1.4 Policy Implications of Disclosure Practice to Enhance Trust in Zakat Institutions

The disclosure practices of Zakat institutions can have significant policy implications for enhancing trust in their operations. To begin with, BAZNAS North Sumatera must prioritise transparency and accountability by disclosing clear and comprehensive information on their activities, finances, and impact. This information should be readily accessible and communicated in a manner that is understandable to all stakeholders. This can help build trust and credibility with *Mustahiq* and beneficiaries and can demonstrate a commitment to ethical and responsible Zakat management.

In addition, BAZNAS North Sumatera should establish disclosure policies that ensure consistency and accuracy in reporting. This includes implementing monitoring

and evaluation mechanisms to assess the quality and reliability of the disclosed information. Policies should also be put in place to ensure that disclosures are made in a timely manner, providing stakeholders with up-to-date and relevant information.

Blockchain technology can optimise the disclosure process, making it more efficient and cost-effective. By utilising smart contracts, BAZNAS North Sumatera can automate the disclosure process and ensure that information is shared with stakeholders in a timely and accurate manner. This automation reduces the likelihood of errors or fraudulent activities. Furthermore, blockchain technology can enhance the privacy and security of disclosed information. With cryptography, blockchain technology can ensure that only authorised parties have access to sensitive information, protecting the privacy of donors and beneficiaries. Blockchain technology has the potential to significantly improve the disclosure practices of BAZNAS North Sumatera by providing greater transparency, efficiency, and security. This improvement can help build trust with stakeholders, bolster the credibility of Zakat institutions, and garner increased support for Zakat initiatives.

Overall, BAZNAS North Sumatera should prioritise communication and engagement with *Muzakki* to ensure their awareness and comprehension of the disclosed information. This includes engaging in regular communication with donors and beneficiaries, as well as providing opportunities for feedback and input. Such initiatives can help to build trust and foster a sense of shared ownership in the Zakat institution.

7.3.1.5 Policy Implications of Blockchain Technology to Enhance Trust in Zakat Institutions

The policy implications of blockchain technology for enhancing trust in Zakat institutions are significant.

Firstly, it is imperative to formulate policies and guidelines governing the use of blockchain technology in the Zakat management of BAZNAS North Sumatera. These policies should delineate best practices for the implementation and use of

blockchain technology, as well as guidelines for ensuring compliance with legal and regulatory requirements, especially sharia law.

Secondly, it is essential to foster awareness and education regarding blockchain technology and its potential benefits for Zakat management. This can include training programmes for Zakat institution staff, as well as public awareness campaigns to inform *Muzakki* and *Mustahiq* about the advantages of blockchain technology in Zakat management.

Thirdly, it is important to forge partnerships and collaborations with technology providers and experts in the field of blockchain. Such alliances can facilitate Zakat institutions access the latest technology and expertise, as well as develop customised solutions that meet their specific needs and requirements.

Fourthly, it is essential to ensure that the incorporation of blockchain technology in Zakat management aligns with ethical and responsible practices. This entails implementing measures to safeguard the privacy and security of donor and beneficiary information, alongside establishing guidelines for the responsible use of blockchain technology in Zakat management.

Finally, it is important to evaluate the effectiveness of blockchain technology in enhancing trust in Zakat institutions. This can involve the monitoring and evaluation of blockchain-based Zakat management systems, as well as the measurement of the impact of blockchain technology on the transparency, efficiency, and effectiveness of Zakat management.

Careful considerations are imperative when selecting a digital currency or payment method for Zakat transactions. Factors such as accessibility, acceptance, security, and ease of use for both *Muzakki* and *Asnaf* play a crucial role in this decision. Among the options available:

1. Crypto gateways:

Cryptocurrencies, like Bitcoin or Ethereum, fall under this category. While they offer decentralised and secure transactions, the acceptance and understanding of cryptocurrencies may vary among *Muzakki* and *Asnaf*. Cryptocurrencies might not be universally accepted or understood by everyone, potentially limiting their widespread adoption.

2. Payment Gateways:

Payment gateways, essential for electronic transactions, are commonly used for online payments. Examples include PayPal, Stripe, or other digital wallets. These gateways provide a familiar and user-friendly experience, but their acceptance might vary based on the specific platforms and regions involved.

3. Digital Onboarding:

Digital onboarding refers to the process of bringing individuals onto a digital platform. While not a currency per se, it can involve the use of digital payment methods or systems. This approach focuses on making the transition to digital transactions smoother for users. It's important to note that digital onboarding may involve various payment gateways or methods.

Ultimately, the choice depends on the preferences, technological literacy, and infrastructure of the target population. Finding the most appropriate digital currency or payment method that both parties involved in Zakat transactions can accept and trust will require a thorough analysis of the *Muzakki* and *Asnaf's* preferences, as well as the local technological landscape.

However, in the context of proposing a digital currency for Zakat transactions accepted by both *Muzakki* and *Asnaf*, "Payment gateways" (Option 2) appears to be the more practical choice. This option encompasses a variety of digital payment methods, including fiat money, which enhances its inclusivity and user-friendliness. Cryptocurrencies (Option 1) may not be universally accepted or understood,

potentially limiting their adoption. Digital onboarding (Option 3) is more of a process than a currency itself. Therefore, to make sure that more people can accept and use it, particularly since *Muzakki* and *Asnaf* come from different financial backgrounds, using payment gateways that accept fiat money is probably the best and most practical solution.

7.3.2 Theoretical Contributions

This study has made a valuable contribution to the existing literature by examining the issue of trust in Zakat institutions through the lens of blockchain technology, with a particular focus on the case of BAZNAS North Sumatera. This is an important contribution, as there is a scarcity of studies that have specifically explored this topic in this particular context. The study has gone beyond simply identifying the determinants of trust in Zakat institutions and has delved deeper into the causes and reasons behind it, highlighting the potential of blockchain technology as a tool for enhancing trust in these institutions.

Moreover, this research has also enriched the theoretical discussion around the effectiveness of blockchain technology in the management of Zakat. While previous studies have broached this subject, the current study has provided more robust and nuanced findings that shed light on the ways in which blockchain technology can be used to improve the transparency and accountability of Zakat institutions. By doing so, it has contributed to the body of knowledge on Zakat and blockchain technology, as well as opened up new avenues for future research in this area.

Overall, this study represents a noteworthy addition to the literature on trust in Zakat institutions and the potential of blockchain technology in this context. Its findings have important implications for policymakers, practitioners, and scholars, as they highlight the need for greater investment in and adoption of blockchain technology in Zakat management in order to enhance transparency, accountability, and ultimately trust in these institutions.

7.3.3 Limitations of the Study

Every research project encounters some limitations, which are, in some cases, unavoidable. Even though this research has significant contributions to theoretical and operational perspectives, it has a few limitations. This study used both quantitative and qualitative methods. The quantitative method enabled the researcher to achieve the objectives and analyse the researcher's hypothesis, while the qualitative method enabled the researcher to explore the issues and challenges faced by BAZNAS North Sumatera by interviewing the managers. Apart from that, this study's population was only the civil servants who work in North Sumatera province.

In the geographical context, this study was limited to North Sumatera, Indonesia, particularly the capital city of Medan. This limitation was due to its population density, as most people there have a sustainable economic background and are more educated. Another limitation is that this study focused on BAZNAS only. The reason for choosing BAZNAS was due to the number of *Muzakki*, as BAZNAS holds more *Muzakki* compared to other Zakat institutions. Hence, it accommodated a larger number of respondents for this research.

7.4 SUGGESTIONS FOR FUTURE STUDIES

This study determined the impact of attitude determinants on intention to trust in Zakat institutions through the mediation of blockchain technology in BAZNAS, North Sumatera. To further enrich the understanding of the topic, future research can explore additional dimensions, such as evaluating the effectiveness of BAZNAS North Sumatera. Additionally, the impact of the use of digitalisation needs to be assessed from the Zakat institution's operators and managers' perspectives in North Sumatera.

Besides that, this study used quantitative and qualitative methods; hence, several studies can be done on the same topic using qualitative methods, which might bring different results based on the type of respondents who will be questioned. It is recommended to focus more on digital technology and its role in enhancing trust in

Zakat institutions. The collection and distribution of Zakat in BAZNAS, North Sumatera, are crucial topics to be raised in the future due to the scarcity of research in this field, despite its high advantage for the province.

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APPENDIX A

THE SURVEY QUESTIONS

LEVEL OF TRUST IN BAZNAS THROUGH BLOCKCHAIN TECHNOLOGY CASE STUDY: NORTH SUMATERA PROVINCE BAZNAS

Researcher:
Zulfikri

Respondent Number: ……

Name of Respondent: …….

Assalamu'alaikum Warrahmatullahi Wabarakatuh

Dear Respondents.
My name is Zulfikri, I am a doctoral student at the International Islamic University Malaysia (IIUM). I intend to conduct research on the role of blockchain technology in enhancing trust in Zakat institutions, especially BAZNAS of North Sumatera Province.

Blockchain is likened to a digital ledger that can be accessed by anyone, anytime, anywhere easily without having to get approval from parties or financial institutions in general, such as banks, so this technology makes all transactions in it more transparent and secure. So as to minimize data misappropriation such as bribery and corruption. This study proposes a blockchain-based Zakat model to increase transparency for *Muzakki* (Zakat payers) and this questionnaire aims to see *Muzakki*'s responses in adopting blockchain-based Zakat when it is implemented.

To learn how blockchain technology works, please watch the following video:
https://www.youtube.com/watch?v=o1ugNnMyeZc .

This survey also wants to explore what factors influence Zakat payers at BAZNAS of North Sumatera Province.

Thank you for your attention and help.

Best regards,

Zulfikri
email: zulfikri@live.com

All information provided will be kept confidential

Personal Details

Sex : ☐ Man ☐ Women

Age :

Marital Status :

Last formal Education :

Informal Education :

Income :

Variable: Reputation

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	BAZNAS has a good image					
2	Information in Zakat collection is transparent					
3	BAZNAS has reputable board member					
4	BAZNAS is Professionally managed					
5	BAZNAS can be trusted on not allocating Zakat funds for non-relevant purpose					

Variable: Satisfaction of Zakat Distribution

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6	Zakat has been distributed in compliance to Islamic principle					
7	I believe that BAZNAS has distributed my Zakat by following government law and Shariah Law					
8	I believe that my paid Zakat fund will be distributed to the poor and the needy					
9	I have no doubt for the quality distribution in my region					
10	There must be some more distribution system for the better facilities to the poor					

Variable: Service Quality

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11	BAZNAS is comply to Islamic principles					
12	BAZNAS has knowledgeable staff					
13	BAZNAS office is convenience, clean and neat					
14	BAZNAS understand customers' needs					
15	BAZNAS' staff counter service is fast and efficient					

Variable: Disclosure Practice

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16	BAZNAS has provided transparent information to Muzakki					
17	BAZNAS giving easy access information regarding Zakat distribution					
18	BAZNAS Publish all the Zakat funds collection					
19	Media of BAZNAS for communication and socialization of Zakat according to Islamic law					
20	BAZNAS giving information about the development regarding well-being the *Mustahik* that Zakat Payers have given Zakat funds					

Variable: Blockchain Technology

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
21	Zakat using blockchain would be transparent					
22	Transparency of information in blockchain is one of the main features of blockchain.					
23	Blockchain can improve the tracing of Zakat fund distribution.					
24	The digital signature process improves the blockchain security					
25	Blockchain can improve the authentication process of Zakat distribution.					

Variable: Trust in Zakat Institution

No	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
26	BAZNAS always act in the best interest of the cause					
27	BAZNAS conduct their operation ethically					
28	BAZNAS donated funds appropriately					
29	BAZNAS not to exploit their donors					
30	BAZNAS use fundraising techniques that are appropriate and sensitive					

APPENDIX B

ANTI IMAGE MATRICES

		Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	SZD 1	SZD 2	SZD 3	SZD 4	SZD 5	SQ 1	SQ 2	SQ 3	SQ 4	SQ 5	DP 1	DP 2	DP 3	DP 4	DP 5
Anti-image Correlation	Rep 1	.950[a]																			
	Rep 2	-0.237	.921[a]																		
	Rep 3	-0.118	-0.198	.950[a]																	
	Rep 4	-0.166	-0.152	-0.285	.937[a]																
	Rep 5	-0.078	-0.068	-0.078	-0.093	.967[a]															
	SZD 1	-0.003	-0.053	-0.074	0.020	-0.174	.941[a]														
	SZD 2	0.049	-0.134	0.041	-0.201	-0.152	-0.279	.916[a]													
	SZD 3	0.003	0.085	0.021	-0.052	-0.016	-0.243	-0.276	.922[a]												
	SZD 4	-0.055	-0.044	-0.010	0.054	-0.079	-0.115	-0.091	-0.194	.944[a]											
	SZD 5	-0.041	0.120	0.048	-0.215	0.095	-0.055	-0.101	-0.134	0.015	.876[a]										
	SQ 1	-0.085	0.065	-0.011	0.154	-0.184	-0.108	-0.118	-0.184	0.149	-0.133	.924[a]									
	SQ 2	-0.031	-0.090	-0.117	0.090	-0.041	0.048	0.169	-0.123	-0.200	-0.045	-0.280	.912[a]								
	SQ 3	0.034	0.016	0.116	-0.007	-0.098	0.028	-0.076	-0.022	0.182	-0.073	0.018	-0.216	.925[a]							
	SQ 4	0.007	0.028	-0.212	-0.015	0.028	0.050	-0.084	0.026	0.000	-0.009	-0.200	0.020	-0.222	.955[a]						
	SQ 5	-0.080	0.026	-0.036	-0.125	-0.014	-0.011	0.039	-0.040	-0.052	0.060	0.071	-0.303	-0.201	0.040	.935[a]					
	DP 1	-0.031	-0.323	-0.001	0.033	-0.059	0.083	0.123	-0.105	0.005	-0.071	0.104	0.110	-0.005	-0.163	-0.007	.934[a]				
	DP 2	0.115	-0.061	0.031	0.030	-0.018	-0.071	-0.072	0.148	0.012	-0.044	-0.015	-0.090	-0.012	0.058	0.032	-0.280	.926[a]			
	DP 3	0.049	0.023	0.038	-0.124	0.028	-0.018	0.122	-0.181	-0.015	0.158	-0.024	-0.035	-0.075	-0.079	-0.034	-0.216	-0.443	.935[a]		
	DP 4	-0.160	0.268	-0.133	0.002	-0.024	0.093	-0.114	0.048	-0.118	-0.055	-0.106	0.057	-0.009	0.013	0.014	-0.181	-0.273	-0.196	.941[a]	
	DP 5	0.042	-0.144	-0.004	-0.066	0.075	-0.040	0.021	0.126	-0.090	0.077	-0.104	-0.056	-0.026	-0.113	-0.049	-0.183	-0.169	-0.027	-0.082	.967[a]

a. Measures of Sampling Adequacy(MSA)

APPENDIX C

STRUCTURAL ANALYSIS OF THE HYPOTHESIZED MODEL

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	435
Number of distinct parameters to be estimated:	68
Degrees of freedom (435 - 68):	367

Result (Default model)
Minimum was achieved
Chi-square = 1016.200
Degrees of freedom = 367
Probability level = .000

Regression Weights: (Group number 1 - Default model

			Estimate	S.E.	C.R.	P	Label
Blockchain Technology	<---	Attitude	.613	.076	8.009	***	
Reputation	<---	Attitude	1.000				
Satisfaction_of Zakat Distribution	<---	Attitude	.865	.084	10.259	***	
Service_Quality	<---	Attitude	.843	.098	8.623	***	
Disclosure Practice	<---	Attitude	1.193	.112	10.669	***	
Trust_in Zakat_ Institution	<---	Attitude	.817	.088	9.278	***	
Trust_in_ Zakat_ Institution	<---	Blockchain_Technology	.083	.054	1.536	.124	
Rep5	<---	Reputation	1.000				
Rep4	<---	Reputation	1.001	.077	13.064	***	
Rep3	<---	Reputation	1.220	.091	13.386	***	
Rep2	<---	Reputation	1.294	.101	12.757	***	
Rep1	<---	Reputation	.977	.086	11.366	***	
SZD4	<---	Satisfaction_of__Zakat_ Distribution	1.063	.095	11.232	***	

			Estimate	S.E.	C.R.	P	Label
SZD3	<---	Satisfaction_of__Zakat_ Distribution	1.023	.067	15.194	***	
SZD2	<---	Satisfaction_of__Zakat_ Distribution	.987	.065	15.198	***	
SZD1	<---	Satisfaction_of__Zakat_ Distribution	1.000				
SQ5	<---	Service_Quality	1.000				
SQ4	<---	Service_Quality	1.377	.143	9.621	***	
SQ3	<---	Service_Quality	1.153	.134	8.615	***	
SQ2	<---	Service_Quality	1.209	.124	9.765	***	
SQ1	<---	Service_Quality	.967	.104	9.338	***	
DP5	<---	Disclosure_Practice	1.000				
DP4	<---	Disclosure_Practice	.857	.049	17.637	***	
DP3	<---	Disclosure_Practice	1.080	.054	19.837	***	
DP2	<---	Disclosure_Practice	1.084	.053	20.371	***	
DP1	<---	Disclosure_Practice	1.127	.059	19.157	***	
BT1	<---	Blockchain_Technology	1.000				
BT2	<---	Blockchain_Technology	1.032	.039	26.146	***	
BT3	<---	Blockchain_Technology	.983	.039	25.289	***	
BT4	<---	Blockchain_Technology	1.041	.074	14.102	***	
BT5	<---	Blockchain_Technology	1.080	.042	25.436	***	
TZ1	<---	Trust_in_Zakat_Institution	1.000				
TZI2	<---	Trust_in_Zakat_Institution	1.145	.056	20.445	***	
TZI3	<---	Trust_in_Zakat_Institution	1.145	.059	19.291	***	
TZI4	<---	Trust_in_Zakat_Institution	1.064	.060	17.597	***	
TZI5	<---	Trust_in_Zakat_Institution	1.109	.073	15.236	***	

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Blockchain_Technology	<---	Attitude	.530
Reputation	<---	Attitude	.919
Satisfaction_of Zakat_Distribution	<---	Attitude	.777
Service_Quality	<---	Attitude	.880
Disclosure_Practice	<---	Attitude	.790
Trust_in_Zakat_Institution	<---	Attitude	.712
Trust_in_Zakat_Institution	<---	Blockchain_Technology	.084

			Estimate
Rep5	<---	Reputation	.726
Rep4	<---	Reputation	.783
Rep3	<---	Reputation	.802
Rep2	<---	Reputation	.764
Rep1	<---	Reputation	.682
SZD4	<---	Satisfaction_of__Zakat_Distribution	.635
SZD3	<---	Satisfaction_of__Zakat_Distribution	.819
SZD2	<---	Satisfaction_of__Zakat_Distribution	.819
SZD1	<---	Satisfaction_of__Zakat_Distribution	.806
SQ5	<---	Service_Quality	.580
SQ4	<---	Service_Quality	.761
SQ3	<---	Service_Quality	.619
SQ2	<---	Service_Quality	.779
SQ1	<---	Service_Quality	.696
DP5	<---	Disclosure_Practice	.806
DP4	<---	Disclosure_Practice	.852
DP3	<---	Disclosure_Practice	.920
DP2	<---	Disclosure_Practice	.936
DP1	<---	Disclosure_Practice	.900
BT1	<---	Blockchain_Technology	.885
BT2	<---	Blockchain_Technology	.940
BT3	<---	Blockchain_Technology	.928
BT4	<---	Blockchain_Technology	.683
BT5	<---	Blockchain_Technology	.930
TZ1	<---	Trust_in_Zakat_Institution	.837
TZI2	<---	Trust_in_Zakat_Institution	.910
TZI3	<---	Trust_in_Zakat_Institution	.878
TZI4	<---	Trust_in_Zakat_Institution	.831
TZI5	<---	Trust_in_Zakat_Institution	.756

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e29 <--> e30	.047	.011	4.382	***	
e24 <--> e25	.030	.008	3.829	***	
e12 <--> e14	-.066	.014	-4.680	***	

Correlations: (Group number 1 - Default model)

	Estimate
e29 <--> e30	.317
e24 <--> e25	.281
e12 <--> e14	-.380

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
Attitude	.165	.026	6.461	***	
e36	.159	.017	9.298	***	
e31	.031	.008	3.818	***	
e32	.081	.012	6.511	***	
e33	.034	.009	4.001	***	
e34	.142	.020	7.217	***	
e35	.092	.012	7.609	***	
e1	.176	.016	10.775	***	
e2	.124	.012	10.138	***	
e3	.162	.016	9.836	***	
e4	.233	.022	10.377	***	
e5	.215	.019	11.098	***	
e7	.342	.031	11.160	***	
e8	.106	.012	8.904	***	
e9	.098	.011	8.899	***	
e10	.111	.012	9.201	***	
e11	.299	.026	11.517	***	
e12	.209	.023	9.022	***	
e13	.324	.029	11.344	***	
e14	.144	.016	8.735	***	
e15	.151	.014	10.847	***	
e16	.203	.018	11.228	***	
e17	.104	.010	10.779	***	
e18	.079	.009	9.123	***	
e19	.063	.008	8.261	***	
e20	.112	.011	9.859	***	

	Estimate	S.E.	C.R.	P	Label
e21	.061	.006	10.370	***	
e22	.031	.004	8.178	***	
e23	.035	.004	8.954	***	
e24	.275	.024	11.667	***	
e25	.040	.005	8.827	***	
e26	.093	.009	10.184	***	
e27	.059	.007	7.945	***	
e28	.085	.009	9.238	***	
e29	.111	.011	10.214	***	
e30	.200	.018	10.954	***	

Model Fit Indices

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	68	1016.200	367	.000	2.769
Saturated model	435	.000	0		
Independence model	29	7684.011	406	.000	18.926

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.025	.803	.767	.678
Saturated model	.000	1.000		
Independence model	.177	.153	.093	.143

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.868	.854	.911	.901	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.904	.784	.823
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	649.200	558.056	747.984
Saturated model	.000	.000	.000
Independence model	7278.011	6996.682	7565.734

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	3.387	2.164	1.860	2.493
Saturated model	.000	.000	.000	.000
Independence model	25.613	24.260	23.322	25.219

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.077	.071	.082	.000
Independence model	.244	.240	.249	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1152.200	1167.311	1404.284	1472.284
Saturated model	870.000	966.667	2482.593	2917.593
Independence model	7742.011	7748.455	7849.517	7878.517

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.841	3.537	4.170	3.891
Saturated model	2.900	2.900	2.900	3.222
Independence model	25.807	24.869	26.766	25.828

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	122	128
Independence model	18	19