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Preface

Journal of Applied Sciences in Accounting, Finance, and Tax is a forum provided for researchers, both from universities, practitioners and the industrial world. The publication is a result of research, studies or ideas on Accounting, Finance, and Tax.

JASAFINT is published with a focus and scope on issues on Accounting (Financial Accounting, Management Accounting, Public Accounting, Auditing, and Accounting Information Systems), Finance (Capital Market, Financial Statements Analysis, and Financing), and Tax (Income Tax, VAT, Tax Audit, and Tax Accounting).

Managed by the Department of Accounting and published by Politeknik Negeri Bali Research and Community Service Center (P3M-PNB), this journal is intended to disseminate scientific knowledge and the application of the Accounting, Finance and Tax and is expected to be able to broaden the readers' perspective and enrich the scientific repertoire.

Published on April and October (since 2018), the journal accepts articles in English with mentioned format: research results, literature studies and work reports in line with the focus and scope of JASAFINT.

Editors

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Integration of *Tri Hita Karana* in the accountability of religious organizations: a systematic literature analysis

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ABSTRACT
Tri Hita Karana (THK) embodies values that not only serve as a philosophical foundation for Balinese life but have increasingly shaped accountability practices. This study explores accountability in religious institutions using a Systematic Literature Review (SLR) approach. Articles were collected through Google Scholar searches with the assistance of the Publish or Perish application, yielding 41 publications that met the eligibility criteria. All articles were analyzed thematically to identify patterns, approaches, and configurations of accountability within THK-based religious contexts. The findings provide a conceptual mapping that elucidates how THK values frame accountability practices and create space for the development of more contextual theoretical models. The results show that accountability practices in THK oriented organizations encompass financial management, reporting, customary governance, and spiritual accountability. Qualitative approaches such as case studies, phenomenology, and interpretive methods dominate the research landscape. Hindu values such as dharma, *karma phala*, and the *Tri Hita Karana* philosophy underpin transcendental accountability, which includes vertical responsibility to God *(parahyangan)* and horizontal responsibility to others *(pawongan)* and the environment *(palemahan)*. However, reporting practices remain informal, inconsistent, and poorly documented. Research gaps were found in asset management and the development of contextual spiritual accountability models. This study recommends formulating an organizational accountability model that integrates THK values, local culture, and modern governance principles to enhance organizational legitimacy, transparency, and sustainability.

Keywords: Accountability, Religious Organizations, *Tri Hita Karana*

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1. Introduction

Religious organizations, particularly Hindu institutions in Indonesia such as those in Bali, play a strategic role in sustaining the spiritual, social, and cultural harmony of their communities [1], [2]. Temples function not only as spaces of worship but also as centers of collective activity that involve asset management, ceremonial financing, community participation, and coordination with customary institutions [3]. These multifaceted responsibilities underscore the need for a robust accountability system to ensure that organizational management and decision-making processes are conducted in a transparent, credible, and stakeholder-responsive manner [4], [5].

Accountability is conceptualized as a principle and mechanism that obliges entities or organizations to explain, justify, and take responsibility for their actions, both vertically to higher authorities and horizontally to the broader community [6], [7]. Within religious organizations, accountability encompasses two interrelated dimensions: (1) spiritual accountability, which reflects responsibility to sacred religious values and to the divine; and (2) social accountability, which denotes obligations to customary communities and congregants who support, participate in, and depend on the institution's religious activities [8].

Research on accountability within religious organizations, particularly in Islamic contexts has been widely explored across various institutional settings [9], [10], [11] Studies on Islamic social enterprises [12] educational institutions [13], [14] banking organizations [15], and zakat and waqf institutions [16], [17], [18] consistently highlight the centrality of governance, financial reporting, and spiritual social accountability. Several scholars have further advanced theoretical explanations by employing legitimacy theory and stakeholder theory to illustrate how religious institutions justify their existence and actions to both the public and the divine [19], [20].

A growing body of research has examined accountability practices in Hindu culture and religion organizations, particularly through the integration of local values embedded in the *Tri Hita Karana* (THK) philosophy. [21] resent studies identify administrative, spiritual, social, and ecological forms of accountability manifested through the interconnected principles of *Parahyangan*, *Pawongan*, and *Palemahan*. [21] highlight the foundations of environmental accountability embedded in the execution of Yadnya ceremonies, demonstrating how ritual practices construct a spiritually grounded and ethically oriented environmental responsibility. Along similar lines, [22]. Build a more holistic understanding of social and environmental accountability that transcends conventional accounting notions. [20] focus on strengthening accountability mechanisms within Village Credit Institutions (LPD) in Badung Regency, showing how THK values shape governance practices in Hindu-based financial organizations.

These studies collectively underscore the importance of examining accountability within religious organizations as an empirical domain that encompasses spiritual, social, ecological, and administrative dimensions. Despite the growing interest, accountability practices in THK-based institutions remain underexplored in terms of their conceptual configuration, methodological diversity, and potential for theoretical advancement. Therefore, this study aims to analyze the development of research on the accountability of THK-based religious organizations using a Systematic Literature Review (SLR) approach. Through this approach, the study seeks to provide a comprehensive synthesis of accountability practices, identify research trajectories, and outline future research agendas in the context of THK-oriented organizational governance.

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1.1. The concept of accountability

In the last decade, the concept of accountability has received widespread attention in fields such as law, political science, and public administration [23]. Accountability is developing into an increasingly complex and prominent concept, with the emergence of various types of derivatives such as *high-stakes accountability*, *staff/system accountability*, *in-process accountability*, and *no accountability* [24], [25]. However, there are differences in the interpretation and application of accountability, as the standards of behavior that are considered accountable can vary depending on the individual's role, context, time, place, and character [23]. Theoretical studies of the limits and implications of accountability are expected to continue to develop [26].

Conceptually, accountability is often associated with moral responsibility and social role, i.e. the recognition of obligations inherent in a certain position in a value system or norm [27]. Accountability is also seen as a mechanism that requires powerful institutions to remain responsive to the public, while emphasizing the importance of transparency and openness in institutional practices [28]. In a basic sense, accountability refers to social relationships in which a person is asked to explain and account for his or her actions [29]. Due to its cross-disciplinary nature, accountability is understood differently by academics depending on their scientific background and methodological approach [30]. This concept touches on the formal aspect of institutions, and develops towards spiritual accountability, as is the case in religious organizations [31].

In the realm of accounting, there are various theories that try to explain the meaning of accountability more thoroughly [32]. Accountability in accounting is not limited to the relationship between financial and operational aspects alone, and includes non-financial elements [33] Measures of organizational performance and responsibility have become broader, combining financial and non-financial indicators. Accountability reflects social reality and serves to understand the role of accounting in shaping social and organizational contexts [31]. Within the framework of theories such as *stakeholder theory* and *legitimacy theory*, accountability also includes *sustainability reporting* that involves financial, ethical, and social dimensions [33].

In the local government sector, public accountability is significantly influenced by the effectiveness of information technology governance that supports transparency and participation [34]. Public accountability also has an important contribution to improving overall organizational performance [35]. In village governance, accountability even has a direct impact on the level of community trust, making it a key factor in building the legitimacy and effectiveness of local government [36], [37], [38].

In the Hindu perspective, accountability has a very strong spiritual and ethical dimension, as it is based on the *principle of dharma*, which is the moral obligation and responsibility inherent in each individual according to his position in society [39]. This concept reflects the intertwining between social roles and spiritual commitment to truth, justice, and cosmic harmony (*rita*) [40], [41]. Accountability is aimed at humans (people, indigenous peoples, or village institutions), and to God (Ida Sang Hyang Widhi Wasa) as the highest form of accountability [42]. This confirms the existence of dual accountability, namely *horizontal* (to society) and *vertical* (to the Divine), which is carried out through transparency in the use of funds, participation of the people, and adherence to spiritual values that are inherited from generation to generation [43]. Just as the concept of *karma* in Hinduism emphasizes that every action will have consequences, so the practice of accountability also reflects the awareness that every decision and management in an organization must reflect sacred intentions, devotion, and a balance of worldly and spiritual values [41], [44].

1.2 Spiritual Accountability Model in Hinduism: The *Tri Hita Karana* Perspective

In Hinduism, the concept of spiritual accountability is understood as an individual moral obligation, and as a form of collective responsibility inherent in the sacred relationship between man, nature, and God. These values are summarized in THK, a Balinese philosophy of life that is the foundation of ethics and balance in social and spiritual life. THK consists of three main elements: *Parahyangan* (harmonious relationship with God), *Pawongan* (harmonious relationship between humans), and *Palemahan* (harmonious relationship with nature). Within this framework, the spiritual accountability of religious organizations is realized through consistent and sincere religious practices *(Parahyangan)*, transparent management of funds and assets to the people and customary customs *(Pawongan),* and the preservation of the temple environment and local wisdom *(Palemahan).*

This model reflects accountability that is administrative or financial, and holistic, involving moral and spiritual accountability for all three dimensions of the relationship. In the context of religious organizations, THK based spiritual accountability can be a conceptual framework to assess the extent to which temple governance meets the formal aspects (reporting and management), and reflects the balance of Hindu noble values that are the basis of the social and religious legitimacy of the institution. Thus, the THK based Spiritual Accountability Model provides a contextual cultural and normative approach in understanding the accountability practices of Hindu religious organizations in Bali.

In the context of religious organizations such as temples, spiritual accountability reflects a commitment to maintain the integrity of religious and customary values through governance that is transparent, with integrity, and in line with Hindu sacred values. Temple management based on the principle of THK tends to be more accepted by indigenous peoples because it does not only prioritize formal financial aspects, but also maintains the spiritual and social legitimacy of the organization. *Dharma* and *karma* principles in the practice of accountability, where every organizational decision is believed to have moral and spiritual consequences, both in current life and in the broader karmic dimension.

Recent studies examined the governance of Hindu religious institutions and found that community involvement in decision making increased the legitimacy and transparency of the temple [45]. Strengthen the principle of THK as an evaluation framework in the financial management of customary villages that are integrated with the religious system. T*he Parahyangan dimension* encourages a form of ritual accountability that is not reflected in the modern reporting system, but greatly determines the trust of the people.

In the context of religious organizations outside of Hinduism, [46] examined the accountability of zakat institutions and showed how spirituality and sharia, based reporting affect public belief. This finding is conceptually relevant to temples that prioritize the value of sacredness as the basis for legitimacy. The research of [47] classically proposes accountability not only as a reporting system, but also as an ethical social relation. In the Hindu context, this relationship is reflected in the concept *of tat twam asi* (I am you), which builds a mutual ethics of accountability. [48] also examined the acceptance of the people to the temple's financial statements and stated that transparency is considered legitimate if it is carried out in harmony with customs and spirituality.

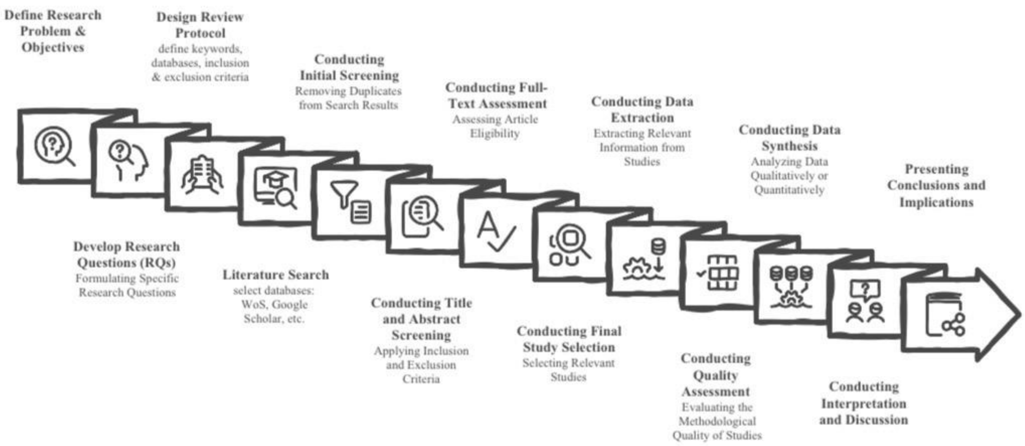
[49] developed a THK based accountability evaluation model for religious organizations, and showed that the harmonious relationship between stakeholders, religious rites, and the physical environment of the temple is the main indicator in assessing the success of management. These studies reinforce the urgency of the need for a contextual and spiritual-based accountability model, especially for local religious organizations such as temples that are not always suitable when measured by modern managerial indicators.

This research aims to explore various studies that analyze and explain the practice of accountability in Hindu religious organizations, especially temples, with an emphasis on the perspective of local values through the *Tri Hita Karana* approach. Just as Islamic boarding schools in Indonesia develop in various forms and structures, so too do religious organizations have diverse characteristics depending on the traditional context, the krama community, and the institutional structure of the *pakraman* village. The practice of accounting and accountability in religious organizations is also indirectly influenced by these dynamics, as well as by the integration of spiritual, social, and ecological values that are the basis of the religious life of the Balinese Hindu community.

2. Method

The method used in this study is *Systematic Literature Review* (SLR). SLR is a research method that aims to systematically identify, evaluate, and analyze various previous research results that are relevant and related to a specific topic or phenomenon [50]. In the context of this research, SLR is used to explore and examine in depth the literature that discusses spiritual accountability in religious organizations, particularly in the Hindu perspective through the framework of *Tri Hita Karana*.

The SLR process begins with defining the research problem and formulating research questions, followed by developing a review protocol. Relevant literature is then identified through systematic database searches. After removing duplicates, studies are screened based on titles and abstracts, followed by full text eligibility assessment. Selected studies undergo data extraction and quality assessment before being synthesized and interpreted to draw conclusions. The research flow diagram can be seen in Figure 1 below.



Source: Processed Data, 2025

Figure 1. Flowchart of Research Implementation Using the Systematic Literature Review (SLR) Method

The SLR procedure followed several systematic stages: (1) formulating clearly defined research questions; (2) conducting a structured and comprehensive literature search; (3) screening and selecting studies based on predetermined inclusion and exclusion criteria; (4) performing thematic analysis and synthesizing the findings from the selected literature; (5) assessing the methodological quality and credibility of the included sources; and (6) compiling and reporting the final synthesis in a structured and transparent manner [51].

This approach refers to a model developed by Magnacca & Giannetti [52] which includes stages: formulating review objectives and questions, developing review techniques, searching the literature, extracting data, and synthesizing results. [53] proposes a three-step approach, namely: determination of the database, selection of studies for review, and thematic analysis of selected studies. A similar model was also adopted by [25] which suggested four main stages: source identification, keyword search, article selection based on inclusion/exclusion criteria, and results analysis. [54] divide the SLR process into three core stages: review planning, implementation, and reporting and dissemination of results.

This SLR research uses the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analyses*) model as developed by Moher (2009) and PRISMA Group (2009). Figure 1 presents the research flow based on the PRISMA model adapted from previous studies [25]. In this study, the source of literature data was obtained from the Google Scholar database, with the help of *the Publish or Perish application*. A total of 759 initial articles were collected that are relevant to the topic of accountability of religious organizations, especially those related to spiritual practices in the context of religious organizations, as well as the values of THK. However, because the topic of religious organizations is limited in international studies, most of the relevant literature is actually found through Google Scholar, particularly regarding studies that specifically link accountability to the values of *Tri Hita Karana*. Therefore, Google Scholar became the main database that supported further analysis in this study.

The SLR procedure in this study refers to the framework from [76] which includes: (1) preparation of the background and objectives of the research, (2) formulation of research questions, (3) systematic literature search, (4) determination of article selection criteria (inclusive and exclusive), (5) data extraction strategies, (6) quality assessment of primary studies, and (7) data synthesis and interpretation of results.

The main source in formulating SLR research questions comes from the focus of the research objectives, which are adjusted to the results of article filtering. Thus, the research questions used in this SLR are formulated as follows:

1) What is the publication profile of studies addressing accountability in religious organizations?
2) What research methods and key findings have been employed in studies examining accountability within religious organizations?
3) What thematic areas and related concepts are most frequently associated with research on accountability in religious organizations?
4) What future research directions can be identified for advancing the study of accountability in religious organizations?

In this study, we used the Google Scholar database to search for articles related to the topic of accountability in religious organizations, using keywords such as "*accountability", "religious organizations", "Tri Hita Karana".* Search results show that very few articles are available in Scopus indexed journals with that keyword. This is due to the characteristics of religious organizations that are very local and distinctive in Indonesia (especially Bali), so that there are still few researchers who publish the results of their research on temples in internationally reputable journals.

To expand the scope of the data, we then used the Publish or Perish application, which allows the search of literature from databases such as Google Scholar. From this process, 224 initial articles were obtained that became the material for the initial selection, with a range of publication years 2016 to 2025. To enhance data comprehensiveness, we utilized the Publish or Perish application to retrieve literature from databases such as Google Scholar and Scopus. This process yielded an initial pool of 224 articles for preliminary screening. The study focuses on a publication range from 2016 to 2025, a period characterized by a significant surge in research regarding accounting and accountability practices within religious organizations (Islamic, Christian, and Hindu). This timeframe was selected to capture the most recent academic discourse and methodological evolution from foundational qualitative studies in 2016 (e.g., [55]) to the latest contemporary findings projected into 2025 (e.g., [49], [56]), ensuring the systematic review reflects the current state of the art.

In the first stage of screening, 58 articles were obtained that were considered relevant based on keyword matches. However, most other articles are considered less relevant because they highlight issues related to the financial management of customary villages, ritual culture, or the preservation of local heritage, without specifically addressing the accountability of religious organizations. Many documents found are theses, theses, or community service articles that do not meet the criteria as research based scientific articles.

In the second selection stage, after analyzing the abstract and the initial content of the article, 41 articles were selected that were more in line with the research topic. Of these, 14 articles were found that directly discussed the issue of accounting practices and accountability in Islamic religious organizations, 8 articles related to accounting practices and accountability in Christian religious organizations, and 16 articles related to accounting practices and accountability in Hindu religious organizations based on THK values.

Figure 2 shows the flow of article selection using the PRISMA model, which describes the stages of identification, screening, feasibility selection, and final analysis of the articles used in this systematic study.

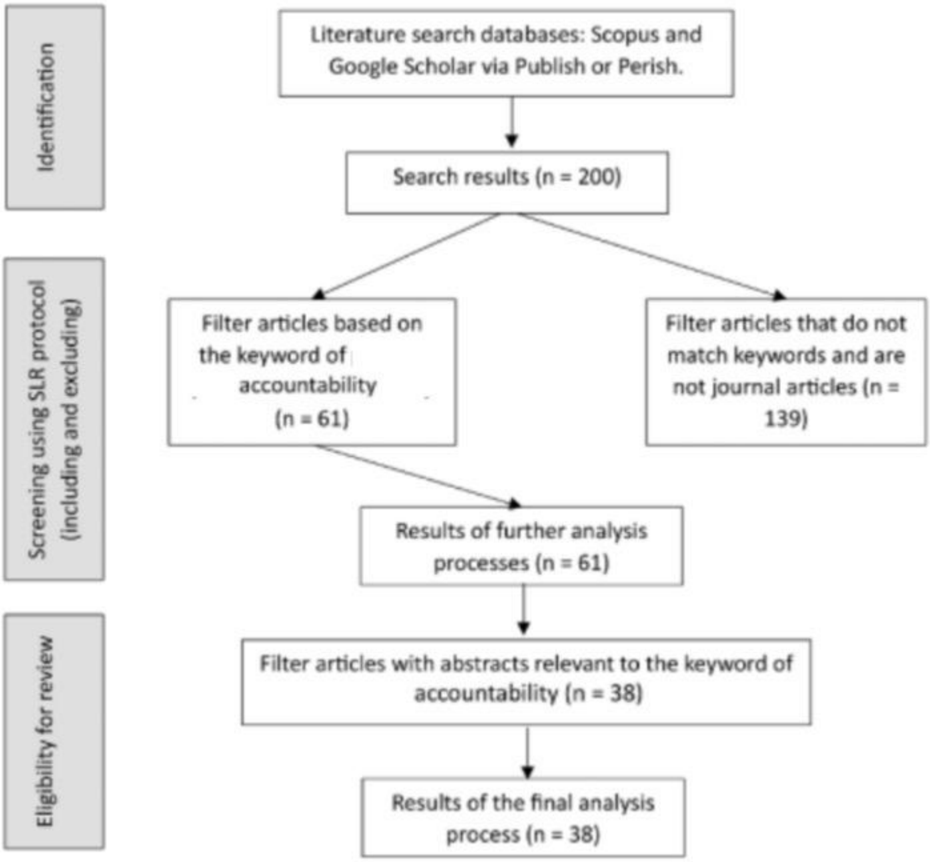


Figure 2. PRISMA search for relevant journal articles

3. Results and Discussion

3.1. Publication Profile (Journal Article) on the Topic of Accountability of Religious Organizations

The results of the research presented in Table 2 show the publication profile of journal articles that discuss the topic of accountability of religious organizations. A total of 41 journal articles were identified and further analyzed in this systematic study. Based on these findings, there are three main subtopics that often appear in relation to the accountability of religious organizations, namely: accounting practices and accountability in Islamic religious organizations, accounting practices and accountability in Christian religious organizations, accounting practices and accountability in Hindu religious organizations based on THK values.

Based on the publication profiles in Table 2, the study on the accountability of religious organizations shows the dominance of the qualitative study approach, with a total of 34 out of 41 publications (about 83%) using this method. The main themes raised include accounting practices and accountability in Islamic, Christian, and Hindu organizations. Research on Hindu religious organizations seems to be the most widely studied, dominated by qualitative approaches that explore cultural and spiritual values, such as the *Tri Hita Karana*. Meanwhile, quantitative approaches are beginning to emerge especially in the context of Christian and Islamic religious organizations, signalling an effort to measure accountability more systematically. These findings suggest that the study of religious accountability still focuses more on narrative and contextual exploration than statistical testing, reflecting the complexity of values and norms in religious practice that are difficult to reduce to numbers.

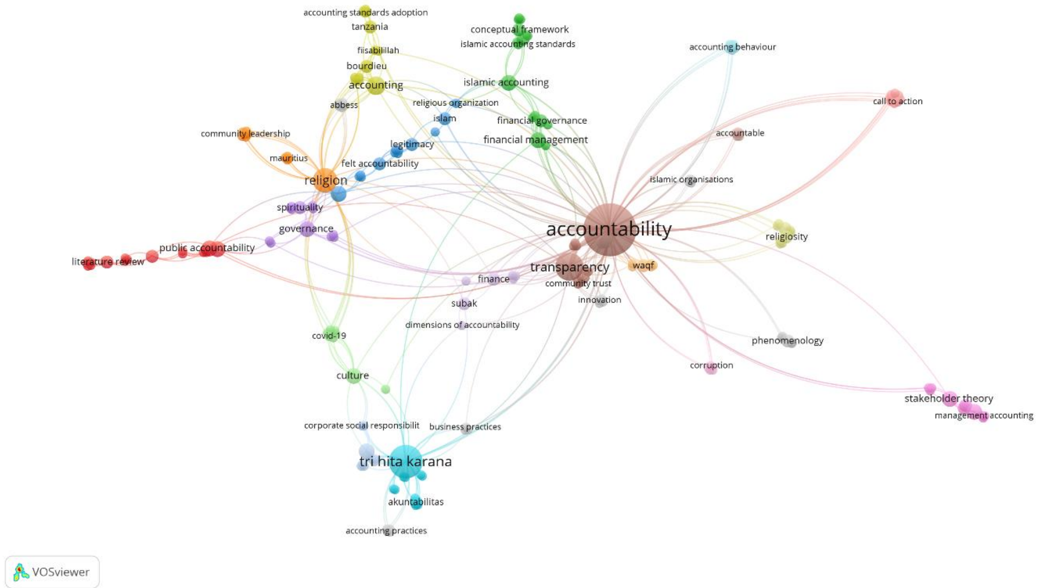
The visualization in Figure 3 generated through the VOSViewer application, shows a map of the relationship between key concepts in previous publications related to temple accountability. There are three main keyword groups that stand out, namely *accountability*, *temple* and *Hindu temple organization*. The relationship between topics on the map shows that studies on temple accountability tend to be scattered and have not focused on certain topics in depth. Keywords that often appear in relation to temple accountability include: *financial accountability*, *spiritual responsibility*, *financial reporting*, *transparency*, and *Tri Hita Karana*. The pattern of inter topic relationships has not shown the existence of research concentration, so there is still wide space for further exploration, for example on the issue of form, spiritual principles, performance indicators based on religious values, and integration between vertical (to God) and horizontal (to the people and indigenous peoples) accountability.

Table 1. Profile of publications on the topic of Accountability of religious organizations

No	Study Theme	Researchers	Method
1	Accounting And Accountability Practices In Islamic Religious Organizations	[55]	Qualitative Studies
2		[25]	Qualitative Studies
3		[57]	Qualitative Studies
4		[16]	Qualitative Studies
5		[17]	Qualitative Studies
6		[8]	Qualitative Studies
7		[12]	Quantitative Studies
8		[18]	Qualitative Studies
9		[15]	Quantitative Studies
10		[58]	Quantitative Studies
11		[58]	Qualitative Studies
12		[11]	Qualitative Studies
13		[59]	Qualitative Studies
14	Accounting And Accountability Practices In Christian Religious Organizations	[60]	Qualitative Studies
15		[61]	Quantitative Studies
16		[62]	Quantitative Studies
17		[63]	Quantitative Studies
18		[64]	Quantitative Studies
19		[65]	Qualitative Studies
20		[66]	Qualitative Studies
21		[63]	Qualitative Studies
22	Accounting And Accountability Practices In Hindu Religious Organizations	[21]	Qualitative Studies
23		[67]	Qualitative Studies
24		[22]	Qualitative Studies
25		[20]	Quantitative Studies
26		[68]	Qualitative Studies
27		[69]	Qualitative Studies
28		[70]	Qualitative Studies
29		[56]	Qualitative Studies
30		[71]	Qualitative Studies
31		[45]	Qualitative Studies
32		[72]	Qualitative Studies
33		[73]	Qualitative Studies
34		[39]	Qualitative Studies
35		[70]	Qualitative Studies
36		[74]	Qualitative Studies
37		[46]	Qualitative Studies
38		[75]	Qualitative Studies
39		[76]	Qualitative Studies

No	Study Theme	Researchers	Method
40		[48]	Qualitative Studies
41		[49]	Qualitative Studies

Source: data processed,2025



Source: data processed with VOSviewer (2025)

Figure 3. Analysis of the research profile of pondok pesantren accountability using VOSviewer

3.2. Research Examining *Tri Hita Karana*-Based Organizational Accountability

Table 2 shows a strong tendency to integrate THK values into accountability practices in various traditional institutional and local governance contexts in Bali and beyond.

Table 2. Research methods and results on THK-based organizational accountability

No	Researchers	Method	Result
1	[49]	An ethnomethodological approach in an interpretive paradigm with data collection through interviews, observations, and documentation to understand the financial accountability practices of Subak Sembung.	Accountability is built on the basis of THK's moral values and philosophy, which manifests in five dimensions of accountability and makes devotion to God the main foundation of organizational sustainability.
2	[45]	An ethnographic approach with triangulation techniques to explore the practice of financial reporting accountability in Pitamaha Temple, Palangka Raya City based on the perspective of THK.	Vertical and horizontal accountability is carried out, even though the presentation of financial statements is not fully in accordance with PSAK No. 45; philosophically, accountability is interpreted as the relationship between humans and God (*parahyangan)*, fellow humans *(pawongan)*, and the environment *(palemahan)*.
3	[39]	A qualitative method with semi-structured interviews with 21	THK strengthens spiritual accountability, social collaboration, and

No	Researchers	Method	Result
		agency leaders in Bali and thematic analysis to examine how the principles of THK *Parahyangan, Pawongan,* are integrated in accounting and governance practices to prevent corruption.	sustainable decision making, creating an ethical and holistic approach that has the potential to be broadly applied in diverse governance contexts.
4	[40]	An ethnomethodological approach with the perspective of *the Catur Marga culture* to develop accountability practices that are in harmony with the local spiritual culture in the Jimbaran Traditional Village.	The need for synergy between the principles of Catur Marga and village financial governance, through the involvement of traditional and religious leaders, accounting education based on spiritual values, and the formation of Pararem that regulates accountability technically but is still based on the spirit of devotion to God.
5	[21]	A qualitative approach with ethnomethodology methods to explore financial management accountability in the governance of Sangsit Traditional Village, Bali, which is regulated by Regional Regulation No. 4/2019 and Governor's Regulation No. 39/2019.	The importance of collaboration between the principles of modern accountability and the philosophy of THK, which is manifested through local wisdom and customary law *(awig-awig* and *pararem)* as the foundation of governance in accordance with Balinese cultural values.
6	[46]	An interpretive approach in a case study to understand the concept of accountability in the traditional organization of the Customary Krama in Malakosa Village.	Accountability is interpreted as "trust," which is based on the teachings of Karma Phala and is considered more valuable than evidence of formal transactions, because it prioritizes goodwill and moral accountability before indigenous peoples.
7	[67]	This study uses a qualitative approach with an inductive method to interpret the phenomenon of environmental accountability in traditional ceremonies based on the values of Balinese cultural philosophy, THK in Malakosa Village.	Environmental accountability in the Yadnya ceremony in Malakosa Village is based on THK values as a form of reminder and self control to maintain the harmony of human relationships with God, others, and nature. These values are rooted in four philosophical foundations Theocentric, Anthropocentric, Cosmocentric, and Logocentric
8	[22]	A phenomenological approach based on the philosophy of THK to reveal Hindu values in the concept *of green accounting,* through interviews with accountants, humanists, and religious leaders.	The aspects of srada bhakti, yadnya, and spirituality complement the concept of green accounting, resulting in a more holistic epistemological form than conventional approaches, emphasizing social and environmental responsibility based on religious and cultural values.
9	[70]	This qualitative research was conducted in Subak Kali Kembar, Jembrana, with interviews with Kelihan and Subak members to understand the practice of financial management accountability.	The source of funding comes from dues and government assistance, with accountability maintained through Hindu values and trust among members, although the basic understanding of bookkeeping still needs to be improved.
10	[48]	A transcendental phenomenological approach, with	The source of funding comes from dues and government assistance, with

No	Researchers	Method	Result
		an interview with Bandesa in Sayan Village, Ubud, to reveal the perspective of the prajuru or administrators in implementing financial accountability practices.	accountability maintained through Hindu values and trust among members, although the basic understanding of bookkeeping still needs to be improved.
11	[76]	A critical research framework with three main tasks: *insight task*, *critique task*, and *transformative redefinition task*. Through the analysis of qualitative content on texts such as Lontar Kuttara Kanda Dewa Purana Bangsul,	The importance of reporting that reflects spiritual and ecological values, as well as encourages business entities in Bali to contribute to nature conservation as part of environmental transparency and sustainability.
12	[71]	An interpretive descriptive approach using *the Interpretative Phenomenological Analysis* (IPA) method to understand the meaning of accountability based on informants' experiences in the perspective of THK culture at the Sagraha Mandra Kantha Santhi Foundation.	Accountability is applied to God *(parahyangan)*, others *(pawongan)*, and the environment *(palemahan)*, with three main themes emerging: sincere offerings, economic contribution to society, and protection of the environment.
13	[72]	This qualitative descriptive research was conducted in the Pandan Strait Customary Village of Banten, Buleleng, to understand the implementation of the THK concept in the financial management of customary villages, with data obtained through interviews, observations, and documentation.	Village financial management refers to *awig-awig* that bases the allocation of funds on three aspects of THK *Parahyangan*, *Pawongan*, and *Palemahan* and is carried out in a transparent and accountable manner through the stages of planning, budgeting, implementation, reporting, and accountability.
14	[74]	Observation, interview, documentation, and literature study methods with triangulation analysis techniques to examine the aspect of time based trust in the practice of accountability and transparency in the management of customary village funds in Penglatan Traditional Village, Buleleng	The principle of trust has been realized through the application of the principles of transparency and accountability that continue to be adjusted to local conditions and the development of applicable laws and regulations.
15	[73]	An ethnomethodological approach to understand how Village Credit Institutions (LPD) implement sustainable business practices (*Sustainability Business Practices*) and accountability based on the THK philosophy.	LPD's sustainable accountability is reflected in the economic (pang pade payu), social (segalak *segilik selunglung sebayantaka*), ecological *(skala-niskala)*, and spiritual (panca yadnya) dimensions, which holistically integrate all aspects of life in sustainable business practices.
16	[56]	A qualitative approach through interviews, observations, and document analysis to uncover the unique concept of accountability in Penglipuran Traditional Village, understood as a form of devotion to	Based on local wisdom such as THK and Tri Mandala, this study shows that accountability in traditional villages is able to balance spiritual and financial aspects holistically, as well as offer theoretical and practical contributions

No	Researchers	Method	Result
		ancestors and God, reflects transcendental accountability.	that can be replicated by other village organizations in Indonesia.

Source: Researcher's Results, 2025

A series of studies on THK based accountability show that this concept is deeply rooted in the social and spiritual practices of Balinese society, and has transformative potential in organizational governance, both traditional and modern. The [49] study emphasizes that accountability practices in Subak Sembung are based on moral and spiritual values, with *devotion* to God as the foundation of sustainability, reflecting the *parahyangan dimension*. [45] expand this view by showing the importance of vertical and horizontal accountability in the financial reporting of Pitamaha Temple, a harmonious relationship with God, others *(pawongan)*, and the environment *(palemahan)*, although it is not yet fully in accordance with formal accounting standards.

The contribution of THK in strengthening ethics and public governance is clearly seen in the study [39], which places the values of THK as an anti-corruption strategy, strengthening social collaboration and sustainable decision making. On the other hand, [40] highlighted the synergy between THK and another Hindu spiritual value, *Catur Marga*, in the practice of accountability in the Jimbaran Traditional Village, emphasizing that the technical reporting system must also be based on the spirit of spiritual devotion. In the context of regional regulations, [21] show that collaboration between modern accountability and customary values is realized through *awig-awig* and *pararem*, which institutionalize THK within the framework of local law.

The aspect of trust as a form of accountability is emphasized by [46], who revealed that in the Krama Adat organization, moral responsibility and goodwill take precedence over formal evidence, based on the teachings of *Karma Phala*. [67] extend this concept to the realm of the environment through the *Yadnya* ceremony, by linking the values of THK to four philosophical pillars: *Theocentric*, *Anthropocentric*, *Cosmocentric*, and *Logocentric*, which depicts humans as the guardians of spiritual and ecological harmony.

In the context of sustainability reporting, [22] offer a phenomenological approach in *green accounting* that integrates aspects of *srada bhakti*, *yadnya*, and spirituality. This shows a new epistemological form in accounting that emphasizes culturally based social and ecological responsibility. The practice of accountability in Subak institutions and customary village governments, where krama dues and government assistance are managed with the value of trust and spirituality, although there are still challenges in the technical aspects of bookkeeping.

[76] highlight accountability as an emancipatory instrument through reporting that reflects spiritual and ecological values, by encouraging business entities in Bali to be active in nature conservation. [71], with an *Interpretative Phenomenological Analysis approach*, highlight the subjective experience of organizational actors in interpreting accountability through sincere offerings, social contributions, and environmental protection, the three main pillars of THK. [72] strengthen that village governance can run accountably and transparently when it is based on local norms (*awig-awig*) based on THK.

In terms of adjustments between cultural norms and formal regulations, [74] presented the concept *of sekala* as a basis for trust that strengthens the accountability and transparency of village funds. [73] present a THK based sustainable accountability model in Village Credit Institutions (LPD) that includes economic, social, ecological, and spiritual dimensions. Closing this narrative, [56] offers the concept *of transcendental accountability* in Penglipuran Traditional Village, which harmonizes spiritual and financial aspects, and has the potential to be replicated as a model of village governance based on local wisdom in various regions of Indonesia.

3.3 Future Research Agenda Related to the Topic of Organizational Accountability Based on *Tri Hita Karana* Values

Future research on THK value based organizational accountability is suggested to expand the methodological approach by adopting quantitative and comparative studies across cultural regions. It is important to empirically test the influence of *the values of parahyangan*, *pawongan*, and *palemahan* on organizational performance, transparency, and community participation. The development of nonfinancial accountability indicators that reflect the principles of THK is also a strategic step to evaluate customary institutions and modern organizations in a more contextual manner. The integration of THK values into accounting information systems and financial or sustainability reporting formats needs to be further explored, including in terms of the design and visualization of reports that represent spiritual, social, and environmental harmony. Policy research is also recommended to review the extent to which government regulations accommodate local values in the public accountability system. Interdisciplinary studies that combine accounting, anthropology, theology, and ecology are also important to strengthen the theoretical and implement foundations of THK. Research needs to be extended to non-indigenous organizations such as the private sector and educational institutions to see the potential for ethical organizational cultural transformation, sustainability, and based on local wisdom.

4. Conclusion

A growing body of research on THK-based accountability consistently demonstrates that A growing body of research on THK based accountability consistently demonstrates that Balinese local values possess strong transformative power in shaping accountability practices that extend beyond administrative compliance to encompass spiritual, social, and ecological dimensions. Across various contexts including customary institutions, modern organizations, and business entities accountability is portrayed not merely as a formal obligation, but as an expression of devotion, trust, and moral responsibility. The interrelated dimensions of *parahyangan*, *pawongan*, and *palemahan* are enacted holistically and function as ethical foundations for participatory and sustainable governance.

Several studies emphasize that THK based accountability practices effectively bridge traditional values and modern regulatory systems through instruments such as *awig-awig*, *pararem*, reconstructed reporting mechanisms, and environmental stewardship initiatives. This approach offers an alternative epistemological path within the accounting discipline one that is locally grounded yet globally relevant, positioning THK as an innovative model that can be replicated in value based and culturally embedded governance systems. THK not only enriches the discourse on accountability but also provides new directions for developing organizational systems that are ethical, sustainable, and context sensitive.

This stream of research, however, is not without limitations. The dominance of context specific qualitative approaches rooted in Balinese settings restricts the generalizability of findings to other cultural contexts. Few studies have quantitatively assessed the effectiveness of THK values in enhancing organizational performance or transparency. Challenges also arise from the technical knowledge gap between customary and administrative actors, as well as the limited integration of THK principles into formal regulatory and audit frameworks. The reliance on interpretive methods introduces potential biases, underscoring the need for broader, measurable, and cross contextual investigations.

This research carries important theoretical and practical implications. Theoretically, the findings reinforce the position of THK as an alternative paradigm in accountability studies integrating spiritual, social, and ecological values and contribute to the development of a more contextual, locally grounded accounting epistemology. Practically, the study encourages customary organizations, village financial institutions, and business entities to adopt THK principles within their governance and reporting systems to foster more ethical, participatory, and sustainable accountability practices. Policy implications also emerge, particularly the need to recognize and formally integrate local cultural values such as THK into regulatory and audit mechanisms, thereby ensuring that accountability systems remain relevant and grounded within the Indonesian context.

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Interest rates and volume net foreign sell on stock prices with profitability as mediating in indonesian banking

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ABSTRACT
Global interest rate increases, particularly The Fed's 5.5% hike, and Bank Indonesia monetary tightening have put a great deal of strain on Indonesia's banking industry, affecting stock prices through shifts in interest rates, foreign investor behavior, and profitability. This study investigates the effect of interest rates and net foreign sell volume on stock prices with profitability as a mediating variable in the Indonesian banking sector. Using a quantitative method, the research utilizes secondary data from 31 banking companies listed on the IDX during 2020 - 2024, producing 155 observations. Data were analyzed using Structural Equation Modeling with SmartPLS 4.1.1.6. The results show that interest rates and net foreign sell have a negative and significant impact on both profitability and stock prices. Profitability has a positive and significant effect on stock prices, and it partially mediates the influence of interest rates and net foreign sell on stock prices. These results support the signalling theory, where rising interest rates and increased foreign sell off act as negative signals for investors, reducing confidence and suppressing stock performance. The research highlights the importance of maintaining financial stability and investor confidence amid global financial volatility.

Keywords: Interest rate, volume net foreign sell, profitability, stock price, banking sector.

1. Introduction

Indonesia, as a country with an open economy, is vulnerable to global financial market fluctuations. The global recession that occurred between 2023 and 2024 produced an economic slowdown, put pressure on business profitability, and decreased investor interest in the capital market. The banking sector is one of the most vulnerable to global and domestic macroeconomic trends. Stock price variations are impacted not just by internal company conditions, but also by macroeconomic factors and investor behaviour, particularly among international investors [1].

In 2020-2024, the Fed's global interest rate hike to 5.5% and Bank Indonesia's tightening of monetary policy through the BI7DRR (BI 7 Day Reverse Repo Rate), which is BI's benchmark interest rate, put significant pressure on the national financial system [2]. The Fed's interest rate hike has a two-way effect on the Indonesian banking sector. First, capital outflows can reduce the rupiah exchange rate and lower banking stock prices. Second, Bank Indonesia is forced to change its domestic interest rates due to global interest rate hikes to maintain the stability of the rupiah [3]. Ultimately, this will increase banking funding costs and potentially put pressure on bank profitability. When bank profitability declines, investors lose confidence and accelerate the decline in banking stock prices. Banking stocks are highly sensitive to interest rate changes because this sector depends on net interest margins and capital flows. When the Fed raises interest rates, foreign investors tend to sell their Indonesian bank stocks (net foreign sell), which puts pressure on the prices of both large and small bank stocks and shifts them to other more profitable instruments [4].

Signaling theory, introduced by Spence in 1973, states that the party with information (the sender) transmits a signal or message in the form of information that reflects the condition of the company. The drop in banking stock prices sends a negative signal to investors because when interest rates rise, it can be considered a signal from the Indonesian Central Bank that inflation is out of control [5]. This increase in interest rates also signals banks to take anticipatory measures, such as increasing loss reserves and reducing credit distribution, because after receiving a negative signal from BI, banks will immediately respond and raise lending rates. This will have a significant impact on credit, such as bad debt, and affect the profits or profitability of the bank, which will send a negative signal to investors. Investors will then sell their shares and switch to deposits to maximise gains [6].

Interest rates are the primary monetary policy instrument used to manage inflation, economic stability, and liquidity in the financial system. In banking, an increase in interest rates will increase the cost of funds, discourage people from borrowing, and reduce the ability of banks to extend credit. Interest rates are measured using the BI 7-Day Reverse Repo Rate (BI7DRR), which is an important benchmark for Indonesia's financial industry [5].

Net foreign sell volume is the difference between total sales and purchases of shares by foreign investors during a specific period. An increase in net foreign sell indicates that foreign investors are selling their shareholdings because they perceive risk or uncertainty in the market. This phenomenon can reduce liquidity, decrease demand for shares, and drive down the share prices of the banking sector [7].

Profitability, measured using ROA (Return on Assets), is a company's capacity to make profits that reflect its financial health and asset management efficiency. Companies with high profitability send a positive signal to investors that the company has the ability to manage its assets efficiently and is capable of generating sustainable profits, thereby increasing investor confidence and interest in long-term investment. However, a decline in profitability can send a negative signal that the company is facing cost pressures and a decline in operational efficiency [8].

Stock prices are a key indicator for investors in assessing the fundamental strength of a company. Stock prices play a very important role because their fluctuations directly affect the level of returns that investors will receive. There are various factors that cause stock prices to fluctuate, both positively, which causes stock prices to rise, and negatively, which causes stock prices to fall, namely external factors such as macroeconomics and internal factors such as company profitability [9].

Previous research conducted by [10] shows that interest rates have a favorable impact on stock values. According to [11] nterest rates affect profitability [5] discovered that profitability had a favorable and large impact on stock values. [12] found that net foreign sale has a favorable and significant effect on stock prices. According to [13] profitability can mediate the relationship between interest rates and stock prices, which is consistent with [14].

Based on signaling theory and the findings of previous studies, macroeconomic conditions and foreign investor behaviour are expected to influence the performance of banking companies and the movement of their stock prices. An increase in interest rates can raise the cost of funds for banks and reduce credit demand, which may ultimately decrease bank profitability. In addition, higher interest rates may encourage investors to shift their investments from stocks to lower-risk financial instruments, potentially causing stock prices to decline [3]. Similarly, an increase in net foreign sell volume indicates the withdrawal of foreign capital from the domestic capital market, which can reduce market liquidity and weaken investor confidence. This condition may create selling pressure in the market and negatively affect stock prices [15].

Profitability, on the other hand, reflects the company's ability to generate earnings from its assets and indicates the efficiency of management in operating the business. Higher profitability tends to provide a positive signal to investors regarding the company's financial performance and future prospects, which can increase investor demand for shares and support higher stock prices. Therefore, profitability is not only expected to influence stock prices directly but may also act as a mediating mechanism through which macroeconomic factors and investor behaviour affect stock price movements [5].

However, empirical evidence regarding the mediating role of profitability in explaining the relationship between interest rates, foreign investor transactions, and stock prices in the Indonesian banking sector remains limited. Therefore, this study aims to examine the effect of interest rates and net foreign sell volume on stock prices with profitability as a mediating variable in banking companies listed on the Indonesia Stock Exchange during the period 2020–2024.

2. Method

The research method used is quantitative with secondary data from the sample used. This study aims to examine the effect of interest rates and net foreign sell volume on stock prices with profitability as a mediating variable. This study was conducted on the banking sector listed on the Indonesia Stock Exchange (IDX) for the period 2020–2024.

The sampling method used in this study was purposive sampling, which selects samples based on specific criteria relevant to the research objectives. The criteria used in determining the research sample are as follows: (1) banking companies listed on the Indonesia Stock Exchange during the period 2020–2024; (2) banks that publish complete annual financial statements during the observation period; (3) banks that have complete data related to stock prices, profitability (Return on Assets/ROA), and foreign transaction data required for this research; and (4) banks that were actively traded in the capital market during the research period. Based on these criteria, 31 banking companies were selected as research samples.

With an observation period of five years, the total number of observations used in this study is 155 data points. Data analysis techniques used the Smart Partial Least Square (SEM-PLS) tool version 4.1.1.6.

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3. Results and Discussion

Descriptive Statistic Analysis

Table 1. Descriptive Statistic

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Interest Rate	155	.035	.061	.047	.010
Volume net Foreign Sell	155	12395328575.500	38080962569.917	4530146015.201	11057519157.384
Profitability	155	.013	11.752	1.523	1.714
Stock Prices	155	50.000	33850.000	2317.806	3452.812
Valid N (listwise)	155				

Source: Processed secondary data, 2025

Table 1 shows the descriptive statistics findings for the interest rate (X1) show a minimum of 0.035, a maximum of 0.061, a mean of 0.047, and a standard deviation of 0.010. This indicates that the level of data fluctuation is rather low. The volume net foreign sell (X2) has a minimum value range of 12,395,328,575.5, a maximum value of 380,809,625,69.91, and a mean value of 45,301,460. 15.20, and a standard deviation value of 110,575,191.57. A higher standard deviation value with a mean value indicates that the level of data dispersion tends to be higher. The Return on Assets (Z) shows a minimum value of 0.013, a maximum value of 11.752, a mean value of 1.523, and a significant standard deviation of 1.714. A larger standard deviation figure than the mean value implies that the standard deviation or data dispersion level is generally higher. The stock price (Y) has a minimum value of 50.00, a maximum value of 33850.00, a mean value of 2317.806, and a standard deviation value of 3452.812. A standard deviation number greater than the mean value indicates that the level of data dispersion is rather significant.

Structural Model Evaluation (Inner Model)

R Square Analysis

The R Square test results show that the stock price variable (Y) is 0.985, meaning that the variability of the stock price construct is 98.5%. This means that it has a strong effect. Similarly, the profitability variable is 0.957, meaning that the variability of the profitability construct is 95.7%. This means that it has a strong effect.

Multicollinearity (Collinearity)

The findings of the multicollinearity test demonstrate that the VIF value for each variable is above 5. Therefore, it can be said that there is strong multicollinearity between variables.

Predictive Relevance (Q Square)

The Q Square test results show that the Q Square value for Stock Price (Y) is 0.976. Therefore, Q Square = 0.976 > 0, indicating that the structural model used is able to capture the relationship between variables well and predict variations in stock prices and profitability with a high degree of accuracy. Similarly, the Q Square value for Profitability (Z) is 0.956. Therefore, Q Square = 0.956 > 0 indicates that the structural model used is able to capture the relationship between variables well and predict variations in stock prices and profitability with a high degree of accuracy.

Effect Size (F Square)

The results of the F-square test show that the Profitability variable on Stock Price has an F-square value of 0.582 indicating that is has a significant effect. The Interest Rate variable on Stock Price has an F-square value of 0.384, indicating that its influence is quite large. The Interest Rate variable on Profitability has an F Square value of 0.632, indicating that its influence is quite significant. The Net Foreign Sell Volume variable on Stock Price has an F Square value of 0.464, indicating that its influence is quite significant. The net foreign sell volume variable on profitability has an F Square value of 1.181, indicating that is has a significant effect.

Goodness Of Fit (Fit Model)

The Goodness of Fit model test results show that the SRMR value in the saturated model is 0.000, whereas it is 0.000 in the estimated model. Based on these test findings, we can conclude that the SRMR value has an outstanding level of appropriateness (perfect fit), implying that the test results match the criterion.

Hypothesis Test (Direct Effect)

Table 2. Path Coefficients

	Original sampel	Sampel mean	Standard deviation	T statistics	P values	Accepted / Rejected
Profitability -> Stock Price	0,449	0,445	0,072	6,266	0,000	Accepted
Interest Rates -> Stock Price	-0,247	-0,249	0,041	5,972	0,000	Accepted
Interest Rates -> Profitability	-0,422	-0,422	0,041	10,387	0,000	Accepted
Volume Net Foreign Sell -> Stock Price	-0,314	-0,316	0,046	6,869	0,000	Accepted
Volume Net Foreign Sell -> Profitability	-0,576	-0,576	0,041	14,066	0,000	Accepted

Source: Processed secondary data, 2025

Based on Table 2, the T-Statistics and P-Value values for each influence between variables are as follows, the effect between Profitability (Z) and Stock Price (Y) shows a T-Statistics value greater than 1.65 (6.266 > 1.65) and a P-Value smaller than 0.1 (0.000 < 0.1). This result indicates that profitability (Z) has a major impact on the stock price (Y). This indicates that the higher the level of firm profitability, the more probable the stock price would rise because profitability reflects the company's potential to create profits, which is a good indicator for investors. The impact of interest rates (X1) on stock prices (Y) has a T-Statistics value larger than 1.65 (5.972 > 1.65) and a P-Value less than 0.1 (0.000 < 0.1). These findings suggest that interest rates (X1) have a major impact on stock values (Y). This demonstrates that changes in interest rates can affect stock price fluctuations; an increase in interest rates tends to diminish investment interest in equities as investors seek to transfer to low-risk assets such as deposits. The effect of interest rates (X1) on profitability (Z) has a T-Statistics value greater than 1.65 (10.387 > 1.65) and a P-Value less than 0.1 (0.000 < 0.1). These results indicate that interest rates (X1) have a significant effect on profitability (Z). This shows that as interest rate fluctuations increase, borrowing costs rise, causing company profits to decline. The effect of net foreign sell volume (X2) on stock price (Y) has a T-Statistics value greater than 1.65 (6.869 > 1.65) and a P-Value less than 0.1 (0.000 < 0.1). These results indicate that net foreign sell volume (X2) has a significant effect on stock price (Y). This means that when foreign investors engage in net foreign sell, stock prices tend to decline due to increased selling pressure in the market. The effect of net foreign sell volume (X2) on profitability (Z) has a T-Statistics value greater than 1.65 (14.066 > 1.65) and a P-Value less than 0.1 (0.000 < 0.1). These results indicate that net foreign sell volume (X2) has a significant effect on profitability (Z). This means that foreign capital flows have a major impact on a company's financial performance. When foreign investors withdraw their funds, market conditions become unstable, which can put pressure on a company's performance and profitability.

Mediation Effect Test (Indirect Effect)

Table 3. Path *Coefficients*

	Original sampel	Sampel mean	Standard deviation	T statistics	P values	Accepted / Rejected
Interest Rates -> Profitability -> Stock Prices	-0,189	-0,187	0,034	5,608	0,000	Accepted
Volume Net Foreign Sell -> Profitability -> Stock Prices	-0,259	-0,256	0,047	5,556	0,000	Accepted

Source: Processed secondary data, 2025

Based on Table 2, the T-Statistics and P-Value values for each influence between variables are as follows, the effect of Interest Rate (X1) mediated by Profitability (Z) on Stock Price (Y) has an Original Sample value above 0 (0.189 > 0), T -Statistics is greater than 1.65 (5.608 > 1.65) and P-Values are less than 0.1 (0.000 < 0.1). Therefore, it can be stated that Interest Rates (X1) mediated by Profitability (Z) on Stock Prices (Y) have a significant negative effect. For the mediation analysis, p1.p2 (indirect effect) has a significant effect. The effect of Net Foreign Sell Volume (X2) mediated by Profitability (Z) on Stock Price (Y) has an Original Sample value above 0 (0.259 > 0), T -Statistics is greater than 1.65 (5.556 > 1.65) and P-Values are less than 0.1 (0.000 < 0.1). Therefore, it can be stated that Net Foreign Sell Volume (X2) mediated by Profitability (Z) on Stock Price (Y) has a significant negative effect.

Discussion of Research Results

The Effect of Interest Rates on Profitability

Based on the results of the analysis of Interest Rates on Profitability, H1 is accepted, implying that Interest Rates have a considerable negative effect on Profitability. This demonstrates that every increase in interest rates reduces bank profits. This is caused by increased funding costs and decreased demand for credit due to high loan interest rates. In line with signaling theory, changes in interest rates send signals to the market regarding macroeconomic conditions. The results of this study show how an increase in interest rates is a negative signal for bank financial performance amid the threat of a global recession.

This study's findings are consistent with previous research [14] and [16], which found that interest rates have a detrimental impact on banking profitability due to increased funding costs and reduced credit demand. [13] research also supports that interest rate hikes are a negative signal for profitability because they can lead to increased interest expenses and pressure on profit margins. This represents the sensitivity of companies to monetary policy.

The Effect of Volume Net Foreign Sell on Profitability

Based on the results of the analysis of volume net foreign sell on profitability, the results of H2 are acceptable, thus stating that volume net foreign sell has a significant negative effect on profitability. This indicates that the higher the net selling volume by foreign investors, the lower the profitability of banks. This reflects that foreign selling actions reduce market confidence and suppress the liquidity of banking stocks in the capital market. According to signaling theory, foreign net selling actions are negative signals that are captured by investors as an indication of declining global investor confidence in Indonesia's economic prospects.

The results of this study are in line with [7], which shows that net foreign sell volume is a strong indicator of market risk perception, as increased foreign sales reduce investor confidence. Similar findings presented by [17] prove that foreign capital flows are related to stock market performance, so that when net sales occur, company profitability will decline.

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The Effect of Interest Rates on Stock Prices

Based on the findings of the interest rate study on stock prices, the results of H3 are acceptable, indicating that interest rates have a negative and significant effect on stock prices. This argues that as interest rates rise, banks stock prices tend to decline. Signal theory explains that changes in interest rates are macroeconomic signals that investors view as negative signals. An increase in interest rates signals efforts to control inflation and economic slowdown. Investors respond to these negative signals by shifting their portfolios to safer assets.

The findings of this study are consistent with previous research [18], which found that rising interest rates have a negative impact on stock values because they reduce credit and profit expectations. This is consistent with study by [19], which found that rising interest rates have a negative impact on stock values because they reduce credit and profit expectations. This is consistent with study by.

The Effect of Volume Net Foreign Sell on Stock Prices

Based on the findings of the volume net foreign sell analysis on stock prices, the H4 result is satisfactory, showing that net foreign selling volume has a considerable negative impact on stock prices. This implies that the stock prices listed on the Indonesia Stock Exchange will decrease as the amount of international sales increases. According to signal theory, domestic market investors receive a negative signal from overseas selling. Investors will interpret the actions of foreign investors as an indication that the economic outlook or macro stability is deteriorating.

The results of this analysis are consistent with the findings of [12], which show that net foreign sale has a negative influence on stock prices in the Indonesian capital market. Research conducted by [20] adds that foreign investors influence stock price movements through negative signals. Research conducted by [21] states that an increase in net foreign sell triggers market response and can suppress stock prices.

The Effect of Profitability on Stock Prices

The research results of H5 are acceptable in light of the analysis of profitability's impact on stock prices, indicating that profitability significantly raises stock prices. This suggests that a company's stock price on the capital market increases with its profitability. According to Spence's (1973) signaling theory, a high level of profitability indicates to investors that the management can effectively run the business and that it will perform well going forward.

The results of this study are in line with [22] research, which states that profitability has a significant positive effect on stock prices. This is in line with the research by [23], which states that profitability has a positive effect on stock prices and that i9nvestors consider profitability as a major factor in their decision-making.

The Effect of Interest Rates on Stock Prices with Profitability as a Mediation

Based on the results of the analysis of Interest Rates mediated by Profitability on Stock Price, the results of H6 are acceptable, thus stating that Interest Rate sare mediated by Profitability on Stock Prices has a strong positive impact, and the profitability variable can moderate how interest rates affect stock prices. This suggests that a rise in interest rates reduces company profitability, and ultimately this decline in profitability causes a decline in stock prices. In signaling theory, changes in interest rates are macroeconomic signals that can influence investors' perceptions of a company's prospects. High interest rates signal inflationary pressures and an economic slowdown that could potentially reduce corporate profits.

The findings of research by [14] and [13], which indicate that profitability mediates the relationship between interest rates and stock prices, are consistent with this study. These results indicate the importance of interest rate stability and liquidity management regulated by Bank Indonesia to maintain banking profitability amid global fluctuations.

The Effect of Volume Net Foreign Sell on Stock Prices with Profitability Mediation

Based on the results of the analysis of net foreign sell volume mediated by profitability on stock price, the results of H7 are acceptable, thus stating that net foreign sell volume is mediated by profitabilit on stock prices as a significant positive effect and the profitability variable is able to mediate the interest rates' impact on stock prices. The greater the foreign capital outflow, the lower the company's profitability, which then lowers the stock price. According to signal theory, foreign capital outflows (net foreign sell) send a negative signal to the market that the domestic economic outlook is declining. Foreign investors who sell large amounts of shares are considered to have better information about economic risks or potential slowdowns in growth.

This study is consistent with the findings of [17], which demonstrate that net foreign buy increases stock prices in Indonesia, while net foreign sell lowers stock prices, because foreign investors have a role in determining the direction of the market. The results of this study are in line with [24], which states that foreign flow and stock transaction volume significantly affect stock price movements, thus reflecting the role of external signals in shaping investor perceptions.

4. Conclusion

Based on the results of the analysis, it can be concluded that interest rates have a negative and significant effect on the profitability of banking companies in Indonesia. An increase in interest rates raises the cost of funds, reduces credit distribution, and lowers net interest margins, which ultimately decreases bank profitability. Net foreign sell volume also has a negative and significant effect on profitability, indicating that foreign investors' selling activities reflect declining confidence in the domestic economic outlook and may influence the financial performance of banking companies. In addition, interest rates and net foreign sell volume have a negative and significant effect on stock prices. Higher interest rates tend to reduce investor interest in stocks because investors may shift their funds to safer financial instruments such as deposits or bonds. Likewise, increased foreign selling creates selling pressure in the capital market, which can lead to a decline in stock prices. On the other hand, profitability has a positive and significant effect on stock prices, indicating that companies with higher profitability tend to attract greater investor interest. The mediation analysis also shows that profitability partially mediates the relationship between interest rates and stock prices, as well as between net foreign sell volume and stock prices, indicating that macroeconomic conditions and foreign investor behaviour may affect stock prices both directly and indirectly through profitability.

However, this study has several limitations. This research only focuses on banking companies listed on the Indonesia Stock Exchange during the period 2020–2024, and the variables analyzed are limited to interest rates, net foreign sell volume, and profitability. Therefore, future research is expected to include additional macroeconomic and financial variables such as inflation, exchange rates, or economic growth to provide a more comprehensive explanation of stock price movements. In addition, further studies may expand the research scope to other sectors in the capital market or use a longer observation period in order to obtain broader empirical evidence regarding the factors influencing stock prices in Indonesia.

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The influence of investment knowledge, income expectations, and service quality on gold savings investment decisions

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ABSTRACT
This study aims to analyse the influence of investment knowledge, income expectations, and service quality on gold savings investment decisions at PT Pegadaian (Persero) Tabanan Branch. The background of this study is based on the low number of active customers in gold savings transactions compared to the number of registered customers, indicating the existence of factors influencing investment decisions. This study used a quantitative method with an exploratory approach. The study population consisted of 142 customers, with respondents meeting the minimum sample criteria. Data were analysed using multiple linear regression with the aid of SPSS software. The results indicate that investment knowledge, income expectations, and service quality simultaneously influence investment decisions. However, these three independent variables partially showed no effect on gold savings investment decisions. This finding indicates that investment decisions are more influenced by a combination of factors than by the influence of each variable individually. The contribution of this study lies in strengthening the understanding that, in the context of gold savings, investment decisions are not determined by a single dominant factor, but rather by the simultaneous interaction of various factors. Furthermore, this research provides practical implications for financial institutions, particularly Pegadaian, in designing strategies to increase customer participation through a more integrated approach. This research suggests the need to develop the model by adding other variables such as financial literacy, risk perception, and social influence, as well as expanding the scope of the research locations to obtain more comprehensive results.

Keywords: *investment knowledge, income expectations, service quality, investment decisions*

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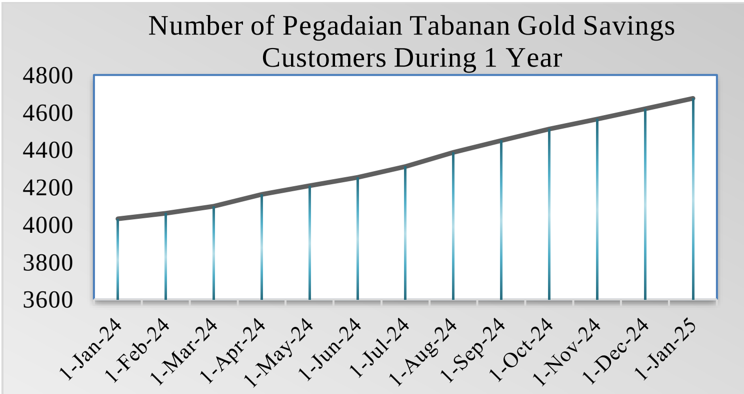
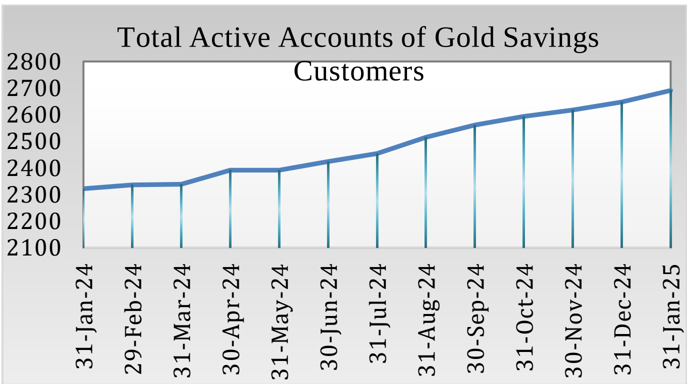
1. Introduction

Investment growth plays a strategic role in driving economic development by enhancing capital formation and financial system stability, particularly in emerging economies [1, 2]. According to the Otoritas Jasa Keuangan (OJK), investment involves allocating funds into assets such as property, deposits, stocks, or gold to generate long-term returns [3]. In Indonesia, PT Pegadaian (Persero) facilitates gold investment through its Gold Savings product, offering accessible entry with low initial capital and secure digital ownership. Gold is widely regarded as a stable asset and a hedge against uncertainty [4, 5], while digital accessibility further enhances participation in investment markets [6, 7].



Source: PT Pegadaian Tabanan Branch, secondary data processed 2025
Figure 1. Number of Pegadaian Gold Savings Customers, 1 Year

Gold prices have shown a consistent upward trend, influenced by macroeconomic factors such as inflation, exchange rate volatility, global uncertainty, and market demand. Recent studies confirm that gold serves as a safe-haven asset, strengthening its appeal during periods of economic instability [4, 8, 5]. This trend has increased investor interest in gold-based instruments. In Indonesia, this is reflected in the growth of Gold Savings customers at PT Pegadaian (Persero), Tabanan Branch, reaching 4,465 customers in January 2025 (Figure 1). This indicates that gold price movements are closely associated with public investment behavior and decision-making.



Source: PT Pegadaian Tabanan Branch, secondary data processed 2025
Figure 2. Total Active Accounts of Gold Savings Customers

Based on the data presented in Figure 2, a substantial gap is observed between the number of registered customers and those with active accounts, with only 2,691 customers remaining active in transactions as of January 2025. This disparity indicates that customer participation is not solely determined by initial registration, but also by factors influencing

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sustained investment behavior. Several potential determinants may explain this phenomenon, including uneven levels of investment knowledge, which may limit customers' understanding and confidence in managing their investments. In addition, income expectations may act as a constraint, as some customers perceive gold investment as requiring relatively large funds despite the availability of low-entry products. Furthermore, perceptions of service quality may affect customers' willingness to continue a transactions. Collectively, these factors highlight the importance of both cognitive and perceptual elements in shaping not only investment decisions but also the consistency of customer participation.

Individual behavior, including investment decision-making, is largely driven by behavioral intention, which represents the most immediate predictor of actual behavior. Within the framework of the Theory of Planned Behavior, intention is formed through three core determinants: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude toward investment reflects an evaluation of gold investment in terms of its perceived profitability and safety, which is significantly influenced by their level of investment knowledge and financial literacy [9, 10]. Moreover, subjective norms capture the perceived social pressures that shape an individual's investment decisions, where influences from family, peers, or social environment may be reinforced by expectations of future income and financial outcomes [11, 2]. Meanwhile, perceived behavioral control refers to an individual's perception of the ease or difficulty of engaging in investment activities; in this context, it can be proxied by service quality, as higher-quality financial services enhance users' confidence, accessibility, and perceived control over investment decisions [12, 13].

Financial literacy plays a crucial role in enhancing the quality of financial decision-making. In the context of this study, investment knowledge is positioned as a proxy for customers' level of financial literacy. Empirical evidence indicating that higher levels of investment knowledge significantly influence individuals' investment decisions [2, 10]. This occurs because individuals with greater financial understanding tend to exhibit higher confidence and stronger interest in engaging in investment activities. Nevertheless, contrasting findings have also been reported in others literature. Some studies reveal that investment knowledge does not always translate into actual investment decisions, as certain individuals still prioritize consumption over investment, perceiving immediate consumption benefits as more valuable than long-term financial returns [11, 9].

Individual's motivation to act is shaped by their expectations regarding potential outcomes and the value they assign to those outcomes. In the context of investment behavior, individuals with stable income and effective financial allocation are generally more motivated to invest, as they anticipate favorable financial returns [14]. Studies indicate that income expectations have a significant positive influence on investment decisions, as individuals who anticipate higher or more stable earnings tend to demonstrate stronger motivation to allocate funds into investment instruments [2, 10]. However, contrasting findings have also emerged in others literature. Some studies report no significant relationship between income level and investment decisions, suggesting that individuals do not always base their investment behavior on the magnitude of their income, but rather on other factors such as preferences, financial priorities, or behavioral considerations [11, 9].

The perceived service quality is achieved when the performance of a service meets or exceeds customer expectations, which in turn can encourage purchasing or investment decisions. In the context of financial services, higher perceived service quality tends to enhance customer trust and satisfaction, thereby increasing the likelihood of engaging in investment activities [12, 13]. Empirical findings indicating that service quality has a significant effect on customer decision-making, including purchasing and investment behavior, as it strengthens confidence and perceived value toward the service provider [15, 16]. However, other studies report inconsistent results. Some research finds that service quality does not significantly influence saving or investment decisions, suggesting that customers may place greater emphasis on other factors, such as product knowledge, expected returns, or perceived investment benefits, rather than solely on service aspects [11, 2].

Recent developments in behavioral finance have shown that investment decisions are driven not only by rational considerations, but also by psychological, economic, and contextual factors. Investment knowledge is a proxy for financial literacy, and it has been shown that it has a positive impact on investment decisions. Similarly, income expectations motivate people to allocate funds to investments. Quality of service has also emerged as an important factor, especially in financial services, where ease of access, reliability and responsiveness form customer trust and commitment. However, some studies indicate that investment knowledge does not have a significant impact on decision making, as individuals can give preference to consumption instead of investment. Similarly, income expectations are not always translated into investment behaviours, indicating that financial capacity is not determined solely by income level. Furthermore, the role of service quality remains unclear, and some findings suggest that customers may give priority to expected returns or product benefits rather than service experiences.

These inconsistencies point to significant research gaps. Firstly, previous studies tend to separate investment knowledge, income expectations and service quality, leading to a fragmented understanding of investment behaviour. Secondly, there are few studies that integrate cognitive, economic and service-related factors into a single comprehensive model. Thirdly, most existing studies focus on general financial products or equity investments, while gold savings investments have a specific characteristic, such as affordability, low perceived risks, and generalized access for a wider population. Therefore, this study addresses these gaps and develops an integrated framework to investigate the impact of investment knowledge, income expectations and service quality on gold savings investment decisions at PT Pegadaian (Persero) Tabanan Branch. Therefore, this research not only provides a more holistic understanding of investor behavior, but also offers increasingly relevant empirical evidence in the context of specific investment instruments. This approach is expected to provide a more comprehensive picture of the factors influencing customer decisions in the context of gold-based financial services, with the following research objectives:

1). Analyze the influence of investment knowledge on investment decisions for Gold Savings.
2). Analyze the influence of income expectations on investment decisions for Gold Savings.
3). Analyze the influence of service quality on investment decisions for Gold Savings.
4). Analyze the influence of three independent variables simultaneously on investment decisions for Gold Savings at PT Pegadaian (Persero) Tabanan Branch.

The study combines planned behavior theory, financial literacy theory, and prediction theory to provide a unified framework for explaining gold savings investment decisions, contributing to investment behavior literature. It provides empirical evidence on the simultaneous effects of investment knowledge, income expectations and service quality, thus correcting the inconsistencies of previous studies. Furthermore, these studies extend the context of investment analysis to gold savings, which in emerging markets has not yet been studied and is becoming increasingly important financial instrument. The results provide both theoretical and practical insights for financial institutions and policy makers to promote integrated and informed investment behavior.

2. Method

This study uses an explanatory quantitative approach with the aim of testing the causal influence between investment knowledge, income expectations, and service quality variables on the investment decision variable for Gold Savings. The research location is PT Pegadaian (Persero) Tabanan Branch, with the research period March-July 2025. The research population is active customers of PT Pegadaian Tabanan Branch Gold Savings, totaling 2,691 active

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accounts. Determination of the number of samples using a purposive sampling method with the criteria in Table 1, and using the Slovin formula with a 10% error rate, so that a minimum number of 96 respondents was obtained.

Table 1. Respondent Data Criteria

Criteria Description	Total Questionnaire
Active Account Customers	2.691
Questions Distributed/Reached	163
Questions Rejected/No Responses	21
Questions Collected	142
Questions Used	142

Source: Processed data, 2025

The type of data used is quantitative, sourced from primary data. Primary data was obtained through the distribution of questionnaires directly to respondents. The research questionnaire was developed from various sources using a 5-point Likert scale. Investment knowledge was measured using the following indicators: knowledge of gold investment types, understanding of investment risks, understanding of investment returns, and understanding of investment procedures/access [17]. Income expectations are measured from the following indicators: expected income from gold savings, ability to set aside income for investment, comparison of expected investment returns with other products [18]. Service quality is measured by indicators: tangibles or evidence in the form of physical facilities, equipment, employees, reliability or ability to provide services accurately, responsiveness or responsiveness of staff, assurance or guarantees that include knowledge or abilities of employees and empathy or good communication, attention and understanding of customer needs [19]. Investment decisions are commonly operationalized through several key indicators, including individuals' attitudes toward investment, subjective norms reflecting social influence, perceived behavioral control, expectations of investment returns, and the ability to manage risk effectively. These dimensions align with behavioral finance and the Theory of Planned Behavior, where financial literacy and attitudes shape investment preferences, social environment influences decision-making, and risk tolerance reflects individuals' control over investment actions [20, 21, 22].

The validity test of the research instrument was conducted using Pearson Product Moment Correlation and reliability using Cronbach's Alpha. The results of the instrument validity test showed that all questionnaire items in the investment knowledge, income expectations, service quality, and investment decisions variables had a calculated r - value greater than the table r - value and a significance value <0.05, thus all questionnaire items were declared valid. The results of the reliability test showed that investment knowledge, income expectations, service quality, and investment decisions had Cronbach's Alpha values varying between 0.744 and 0.938. Thus, all variables met the reliability criteria.

The data analysis used includes descriptive statistical analysis, classical assumption tests (normality, multicollinearity, and heteroscedasticity), and multiple linear regression analysis to test partial and simultaneous influences between variables.

3. Results and Discussion

Descriptive Statistics

The descriptive analysis results in Table 2 show that the average investment knowledge score is in the high category, indicating that most respondents understand the concept and benefits of gold investment. Respondent income expectations are in the medium to high category, indicating optimism regarding the potential profits of Gold Savings. Perceptions of service quality are also in the high category, reflecting Pegadaian's services, which are considered

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adequate by the majority of customers. Meanwhile, respondents' investment decisions tend to be high, as evidenced by their commitment to continuing to save gold.

Table 2. Descriptive Statistical Test

Variable	N	Mean	Std. Deviation
X_1 (Investment knowledge)	142	31,42	3.538
X_2 (Income expectations)	142	20,64	1.947
X_3 (Service quality)	142	25,42	2.344
Y (Investment decisions)	142	29,56	3.409

Source: Data processed with SPSS, 2025

Results of Classical Assumption Analysis

Based on the results of the normality test using the Kolmogorov-Smirnov method, a significance value of 0.200 was obtained, which is greater than 0.05, which indicates that the residual data is normally distributed and the regression model meets the normality assumption.

Table 3. Normality Test Results

	Kolmogorov-Smirnov[a]		
	Statistic	***df***	***Sig.***
Unstandardized Residual	0.059	142	0.200

Source: Data processed with SPSS, 2025

Based on the results of the multicollinearity test by analyzing the Tolerance and Variance Inflation Factor (VIF) values, Table 4 shows that the tolerance values for all variables are >0.10. Meanwhile, the VIF values for all independent variables are less than 10. Therefore, it can be concluded that there is no multicollinearity in the regression model between the independent variables and is suitable for use in multiple linear regression analysis.

Table 4. Multicollinearity Test Results

Model	***Collinearity Statistics***	
	Tolerance	***VIF***
(Constant)		
X_1 (Investment knowledge)	0.724	1.38
X_2 (Income expectations)	0.625	1.6
X_3 (Service quality)	0.766	1.306
a. Dependent Variable: Y		

Source: Data processed with SPSS, 2025

Based on Table 5, the heteroscedasticity test conducted using absolute residual regression (ABSRES) on the independent variables, obtained the results of the absolute residual value on the independent variables, the significance value of the Investment Knowledge variable (X_1) of 0.000 or <0.05. This means there are indications of heteroscedasticity symptoms in the Investment Knowledge variable (X_1). Meanwhile, Income Expectation (X_2) has a significance value of 0.118 > 0.05 and Service Quality (X_3) 0.170 > 0.05. Therefore, it can be concluded that there are no symptoms of heteroscedasticity in the regression model used. This means that the residual variance of the regression model on X_1 is unstable or there is an uneven distribution of errors. The residual variance of the regression model X2 and X3 fulfills the classic assumptions of heteroscedasticity and is stable, and is suitable for further analysis.

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Table 5. Heteroscedasticity Test Results

Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	*Std. Error*	*Beta*		
1	*(Constant)*	3.762	2.092		1.798	0.074
	X_1 (Investment knowledge)	-0.236	0.054	-0.410	-4.392	0.000
	X_2 (Income expectations)	0.165	0.105	0.158	1.573	0.118
	X_3 (Service quality)	0.109	0.079	0.125	1.379	0.170

a. Dependent Variable: ABSRES

Source: Data processed with SPSS, 2025

Multiple Linear Regression

Based on the results of the simultaneous test or F test in Table 6, with the significance value (Sig.) shown in the table, the calculated F value is 4.670 with a significance value (Sig.) of 0.004, or a Sig. value <0.05, it can be interpreted that the three independent variables (X_1, X_2, X_3) have a positive and significant relationship simultaneously to the dependent variable (Y). Meanwhile, based on the F test in this study, it is greater than the F table ($\alpha = 0.05$, df1 = 3, df2 = 138) of 2.67, thus strengthening the hypothesis decision on the regression model which is said to be suitable for use to explain the relationship between the independent variable and the dependent variable.

Table 6. Simultaneous Test Results (F Test)

Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	*Regression*	151.052	3	50.351	4.670	0.004
	Residual	1488	138	10.783		
	Total	1639.05	141			

a. *Dependen Variable: Investment decisions*

Source: Data processed with SPSS, 2025

Based on the t-test results in Table 7, the t-table value (df = 138, $\alpha = 0.025$) was 1.977, with the following analysis results:

1). Investment Knowledge (X_1) had a calculated t-value of 0.708 < the t-table of 1.977 with a significance of 0.480, thus having no significant effect on investment decisions.
2). Income Expectation (X_2) had a calculated t-value of 1.860 < the t-table of 1.977 with a significance of 0.065, thus having no significant effect on investment decisions.
3). Service Quality (X_3) had a calculated t-value of 1.211 < the t-table of 1.977 with a significance of 0.228, thus having no significant effect on investment decisions.

Table 7. Partial Test Results (t-Test)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.467	3.583		4.596	0
	Pengetahuan Investasi	0.065	0.092	0.067	0.708	0.480
	Ekspektasi Pendapatan	0.334	0.180	0.191	1.860	0.065
	Kualitas Pelayanan	0.163	0.135	0.112	1.211	0.228

a. Dependent Variable: Y

Source: Data processed with SPSS, 2025

The regression equation obtained is: $Y = 16{,}467 + 0{,}065X_1 + 0{,}334X_2 + 0{,}163X_3$. The constant value of 16.467 indicates that without the influence of the three independent variables, the investment decision remains at that value. All independent variable coefficients are positive, indicating a directional relationship with the investment decision. Income expectations have the largest coefficient (0.334), indicating a relatively stronger positive influence than the other variables, although it is not partially significant.

Discussion

The results of this study reveal that Investment Knowledge (X_1) does not have a significant partial effect on investment decisions. This finding indicates that although customers possess basic knowledge regarding the types, risks, and procedures of gold investment—often conceptualized as financial literacy—such knowledge alone is insufficient to drive actual investment behaviour. This suggests a gap between cognitive understanding and behavioural execution.

From a theoretical perspective, this result is consistent with the Theory of Planned Behaviour, which posits that behaviour is not directly influenced by knowledge, but rather mediated by intention, which is shaped by attitudes, subjective norms, and perceived behavioural control. In this context, investment knowledge contributes primarily to the formation of attitudes; however, without strong perceived control (e.g., confidence in financial capability) and social reinforcement, it may fail to translate into actual decision-making.

This explanation is supported by previous studies that emphasize that financial literacy alone does not guarantee investment participation, because psychological factors such as financial self-efficacy, risk perception, and social influence play a more decisive role [1, 23, 24]. These studies highlight that individuals with adequate knowledge may still refrain from investing due to lack of confidence or perceived uncertainty, reinforcing the argument that cognitive factors must be complemented by affective and social dimensions.

Furthermore, social influence and external stimuli—such as peer recommendations, digital financial platforms, and promotional strategies—have been found to significantly shape investment behaviour in emerging markets [7, 6]. In the case of gold savings investment, customers may rely more heavily on trust, institutional reputation, and word-of-mouth than on their own financial knowledge, particularly when the perceived complexity or risk remains high.

This finding contrasts with prior studies by Nesia & Widayati [25] and Digta Isu et al. [26], which reported a positive and significant relationship between investment knowledge and investment decisions. However, it is in line with the findings of Anam & Kulsum [27], who concluded that knowledge does not significantly influence customer investment interest. These inconsistencies suggest that the role of investment knowledge may be context-dependent, varying across demographic characteristics, financial access, and levels of investor experience.

Therefore, this study confirms that investment knowledge, as a component of financial literacy, should not be viewed as a standalone determinant of investment decisions. Instead, it must be supported by psychological readiness—such as confidence and risk tolerance—and reinforced by social and environmental factors. This implies that financial education programs should not only focus on improving knowledge but also on enhancing behavioural aspects, such as decision-making confidence and practical engagement with investment products.

The results of this study suggest that Income Expectations (X_2) do not have a significant partial impact on investment decisions, but the direction of these relationships indicates potential influence. This means that while customers can consider expected returns in assessing investment options, such expectations are not the main factors driving decisions to invest in gold savings products. From a theoretical point of view, people are motivated to act based on the expectation that certain behaviors will yield the desired results. In investment contexts, income expectations reflect the belief that investments will bring financial benefits to the future. However, the study showed that if expected returns are perceived as relatively stable, moderate, and long-term (as is often the case with gold investments), this motivation mechanism is less significant in the immediate decision-making process.

This finding highlights that customers tend not to view gold investment as a high-return instrument, but as a safe haven asset with value stability and risk reduction. Therefore, non-financial considerations (safety, trust in institutions, liquidity, access ease through digital platforms, etc.) have become the most influential factors determining investment decisions. Recent studies in journals support this view. For example, the research of Bapat [7] and Phan et al. [24] emphasizes that investors in low-risk financial products are often motivated by perceived safety, convenience, and behavioral comfort, rather than by maximizing returns. Similarly, the study by Raut et al. [23] It has been found that psychological and contextual factors, especially those of first-time or risk-free investors, can weaken the direct effects of expected returns on investment behavior.

In addition, in emerging market environments, investment decisions are often made by pragmatic and practical considerations, not by calculating purely rational returns. Studies such as Setiawan et al. [6] and Bongomin et al. [1] shows that the accessibility of financial services, technological ease and social trust affect financial behaviour, often exceeding the expectation of return. This applies especially to digital gold savings products, and ease of transactions and perceived security play an important role in attracting customers. The results of this study differ from those of Hamka et al. [28] found that income expectations had a significant impact on investment decisions, suggesting that returns expectations could play a central role in some situations, especially with high-risk or high-performance instruments. However, the findings are consistent with those of Sarawatari et al. [29], who reported that expected returns had no significant impact on investment decisions, especially when investors gave priority to capital preservation rather than profit maximization.

These inconsistencies in the study indicate that the role of income expectations depends heavily on context and is influenced by factors such as the type of investment instrument, investor risk profiles, and financial experience. In gold savings, the relatively predictable returns structure is widely seen as a conservative and long-term investment, reducing investor expectations and reducing the power of statistical models to explain. The study therefore confirmed that income expectations should not be considered as independent factors in investing decisions, especially for low-risk investment products. On the contrary, it should be understood as part of a broader framework for decision-making, including psychological, social and technological factors. This means that financial service providers should not rely exclusively on promoting potential returns, but should also emphasize aspects such as security, transparency and user-friendly digital services in order to effectively influence customer investment behavior.

The study results show that service quality (X_3) does not have a significant partial impact on investment decisions. This suggests that although service quality is still an important aspect of the overall customer experience, it is not the main determinant that influences the customer's decision to invest in gold savings products. From a theoretical point of view, the quality of the service is perceived to affect the satisfaction and trust of the customer when the performance of the service meets or exceeds expectations. However, the service provided by PT Pegadaian (Persero) is considered relatively standard or suitable in this study. As a result, service quality can be regarded as a necessary condition to prevent dissatisfaction, rather than an important factor in actively driving investment decisions.

This result is consistent with previous studies suggesting that, in financial services, especially in the context of standard or digitalized products, the direct influence of the quality of services on behavior decisions may be weak. For example, research by Bapat [7] and Phan et al. [24] highlighted that customers increasingly gave priority to factors perceived as being secure, practical and accessible in digital form over traditional service interactions. Similarly, studies by Setiawan et al. [6] and Nasution et al. [15] shows that technological ease of use and trust in digital platforms often acquaint or even obscure the role of service quality in the determination of financial decisions. In the case of gold savings investments, customers may perceive products as relatively simple, low risk, and standardized, reducing dependency on intensive service interactions.

The results of this study differ from those of Ningsih et al. [30] and Gita et al. [16] found that the quality of the service had a significant positive impact on the decision-making of the customer. These differences may be due to the variations in research contexts, service intensity and customer expectations. However, the study is consistent with Yusuf et al. [31] reported that service quality did not have a significant impact on client decisions. This reinforces the belief that the role of service quality depends on contextual factors such as product characteristics, digital integration level, and customer experience maturity.

The results of simultaneous testing show that investment knowledge (X_1), income expectations (X_2), and service quality (X_3) collectively have a significant impact on investment decisions. The findings confirmed that investment decision-making is a multidimensional and integrated process, in which different factors interact and strengthen each other, rather than working independently. From a theoretical point of view, it is stressed that behavior is shaped by the combination of cognitive factors (knowledge), motivation factors (expectations), situational or contextual factors (conceptual control and external conditions). In this regard, investment knowledge contributes to attitudes shaping, income expectations affecting motivational beliefs about results, and the quality of services reflects external conditions that support or hinder behavior. If these elements are taken into account at the same time, they form a more comprehensive basis for behavioral intentions and ultimately investment decisions.

This finding is supported by previous studies that demonstrate that financial decisions cannot be explained by a single factor. For example, Phan et al. [24] the impact of investment behavior is due to interactions between financial literacy, risk perception, and behavioral prejudices. Similarly, Raut et al. [23] emphasizes that cognitive and psychological factors jointly shape investment plans, while Bongomin et al. [1] shows that the financial behavior of emerging economies is driven by the combination of knowledge, access and contextual enablers.

The results of the study are consistent with the results of Rumyaan & Tanusi [32] and Dyana & Setiyono [33], and the results also indicate that while individual variables may not have significant effects, their statistical significance is compared to single variables. As a result, each variable has complementary roles, and if one factor does not weaken the overall decision-making process, its existence alongside other factors has a significant cumulative effect. These findings mean that customers tend to make investment decisions on the basis of a complete evaluation process. Investment knowledge provides information bases, income expectations provide motivational direction and service quality provides an environment that promotes. When these elements exist together, they improve the confidence and willingness of customers to invest, even if each factor is not sufficient to trigger action.

4. Conclusion

The aim of this study is to analyze the impact of investment knowledge, income expectations and service quality on investment decisions for gold savings products. Based on the analysis results, some important conclusions can be drawn. First, some investment knowledge has no significant impact on investment decisions. This shows that, despite customers having basic financial knowledge about gold investments, this knowledge alone is not enough to encourage the actual investment behavior. Customers need additional support factors such as confidence and social influence to translate knowledge into action. Secondly, income expectations also do not have an important partial impact on investment decisions. This finding suggests that when investing in gold savings, customers do not primarily take into account the expected returns. Gold is seen instead as a stable, low-risk and long-term investment tool, so non-financial factors are more relevant to decision-making. Third, service quality has no significant partial effect on investment decisions. This means that the service is considered sufficient and meets the expectations of the customer, but does not serve as a distinguishing factor in investment decisions. Customers tend to give priority to other aspects such as safety, convenience, and accessibility. At the same time, however, it has been shown that investment knowledge, income expectations and service quality have a significant impact on investment decisions. This suggests that these variables collectively influence client behavior in an integrated manner. Investment decisions are not based on one dominant factor, but on a combination of cognitive, motivational, and contextual elements. Consequently, efforts to increase customer engagement must adopt a comprehensive approach, while strengthening support factors such as financial knowledge, managing customer expectations, and digital accessibility, while reducing costs.

The findings indicate that financial service providers, particularly PT Pegadaian (Persero), should adopt an integrated strategy, as investment decisions are shaped by the combined influence of investment knowledge, income expectations, and service quality rather than individual effects. This suggests that financial literacy initiatives alone are insufficient and should be redesigned into behaviorally oriented interventions incorporating nudges, interactive tools, and social proof to enhance decision-making. Given the limited role of income expectations, marketing should emphasize security, stability, and trust over return maximization. Moreover, while service quality is not a primary driver, it remains a critical baseline, requiring firms to compete through superior digital experience, personalization, and seamless service delivery to effectively increase customer participation. For future research, scholars are encouraged to incorporate behavioural variables such as financial self-efficacy, risk perception, and social influence, and to examine mediating or moderating mechanisms. Comparative studies across investment types and the use of mixed-method approaches are also recommended to enhance generalizability and deepen insights.

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Ethical Dilemma and Obedience Pressure: Their Impact on Audit Decisions with Locus of Control as a Moderating Variable

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ABSTRACT
This study examines the influence of professional ethics and obedience pressure on audit decisions, with locus of control as a moderating variable. The background of this research is driven by the increasing complexity of auditors' decision-making processes, particularly when facing ethical dilemmas and external pressures in professional settings. The aim of this study is to analyze whether professional ethics and obedience pressure affect audit decisions and to test the moderating role of locus of control. This research employs a quantitative approach using primary data collected through questionnaires distributed to auditors working in Public Accounting Firms. A total of 207 valid responses were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The results show that professional ethics and obedience pressure have a positive and significant effect on audit decisions. However, locus of control does not significantly moderate the relationship between professional ethics and audit decisions, nor between obedience pressure and audit decisions. These findings indicate that external factors, particularly obedience pressure, tend to be more dominant than internal control in influencing auditors' decisions. In conclusion, strengthening professional ethics and maintaining auditor independence are crucial in improving audit decision quality. The study implies that organizations should enhance ethical training and create supportive environments to minimize undue pressure.

Keywords: Professional Ethics, Obedience Pressure, Audit Decision, Locus of Control

1. Introduction

The auditing profession plays a crucial role in ensuring the reliability of financial information used by various stakeholders in making economic decisions. In performing their duties, auditors are expected to provide objective opinions that are free from personal interests and external pressures. However, in practice, auditors often face ethical dilemmas and obedience pressure that may influence the quality of their audit decisions [1]. Ethical violations, such as financial statement manipulation and deviations in audit opinions observed in several cases in Indonesia such as the 2019 audit case of PT Garuda Indonesia demonstrate that auditors' decision-making is not solely determined by technical auditing aspects, but also by behavioral, moral, and psychological factors. These conditions highlight the importance of gaining a deeper understanding of the behavioral factors that influence auditors' audit decisions.

One important factor influencing audit decisions is professional ethics. Professional ethics refers to a set of moral principles that guide auditors to act honestly, objectively, and independently in performing their duties [2], [3]. Based on Deontological Ethics Theory, auditors have a moral obligation to act in accordance with established principles and rules, regardless of the potential consequences [4]. Auditors with a strong understanding of professional ethics tend to have a high commitment to adhering to ethical standards, even under conditions of pressure. Studies by [5], [6], and [3] show that professional ethics has a positive effect on the quality of audit decisions, where auditors with higher ethical standards are more likely to produce independent and high-quality judgments. However, this finding contrasts with [7], who found that professional ethics does not significantly affect audit quality.

On the other hand, obedience pressure represents a significant challenge for auditors in maintaining their independence [8]. Obedience pressure arises when auditors receive instructions or pressure from superiors or clients to adjust audit decisions in line with the interests of certain parties. Based on Attribution Theory, individual behavior, including that of auditors, can be influenced by external factors such as social pressure and the work environment [9]. Auditors facing high levels of obedience pressure tend to comply with superiors' directives, even when these conflict with proper audit procedures. Empirical evidence from [8], [9], [10] indicates that obedience pressure can reduce auditor independence and lead to less objective audit decisions. In contrast, [11] found that obedience pressure has no significant effect on audit judgment.

In addition to ethical factors and pressure, the personality characteristics of auditors also play a crucial role in determining how they respond to stressful situations. One relevant personality aspect is locus of control, which refers to the extent to which individuals believe that the outcomes of their actions are determined by themselves (internal) or by external factors beyond their control [12]. Auditors with an internal locus of control tend to take responsibility for their work outcomes and are more capable of resisting external pressures. In contrast, auditors with an external locus of control are generally more susceptible to environmental pressures. In the context of the auditing profession, these differences in perception lead auditors with an internal locus of control to better maintain integrity and independence, as well as to resist external pressures when making audit decisions. Conversely, auditors with an external locus of control are more likely to be influenced by organizational or client pressures, which may result in less objective audit decisions [13]. As a moderating variable, locus of control functions to strengthen or weaken the relationship between independent variables (such as professional ethics and obedience pressure) and the dependent variable (audit decisions). In other words, locus of control can alter both the direction and the magnitude of the influence of external factors on auditor behavior. Auditors with an internal locus of control tend to adhere to ethical principles despite facing pressure, whereas those with an external locus of control may adjust their decisions in response to environmental demands.

Several previous studies have examined the influence of professional ethics and obedience pressure on auditors' decisions; however, the findings remain inconsistent. Studies by [3], [5], [6], [14] found that professional ethics has a significant effect on audit decisions, whereas [7], [15] reported that the effect of ethics on audit decisions is not significant. Research on obedience pressure also shows mixed results. [8], [16] found that obedience pressure affects auditor independence, while [11], [17] found that its effect on audit decision quality is not significant. These inconsistencies indicate the presence of a research gap that warrants further investigation, particularly by incorporating individual psychological factors such as locus of control to better understand the mechanisms underlying the relationships among variables in a more comprehensive manner.

The urgency of this study is driven by the increasing occurrence of audit failures and ethical violations that threaten the credibility of the auditing profession. In a highly competitive and complex business environment, auditors are more vulnerable to obedience pressure, which may compromise their independence and decision quality. Without a proper understanding of both external pressures and internal psychological factors, such as locus of control, the risk of biased and unethical audit decisions will continue to increase. Therefore, this study is essential to provide insights into factors affecting audit decisions and to support the development of more ethical and independent auditing practices.

The novelty of this study lies in the integration of auditors' behavioral approach with the personality aspect of locus of control as a moderating variable in the relationship between professional ethics and obedience pressure on audit decisions. This approach provides a theoretical contribution by enhancing the understanding of how internal factors within auditors can strengthen or weaken the influence of external factors on professional decision-making. Furthermore, this study is expected to offer practical contributions for Public Accounting Firms (KAP) and professional organizations in designing ethics training and strengthening auditors' character. This, in turn, enables auditors to better cope with work pressure and maintain their independence in the audit process.

Deontological Ethics Theory

Deontological ethical theory, pioneered by Immanuel Kant, emphasizes that the morality of an action is determined by duties and principles rather than its consequences. In the context of the auditing profession, this theory serves as a fundamental basis, as auditors have a moral obligation to act in accordance with professional standards such as honesty, integrity, and independence, without being influenced by personal interests or external pressures [18], [19]. By adhering to this theory, auditors with a strong understanding of professional ethics will make audit decisions based on moral principles and professional standards rather than on personal gain or external pressure. This is consistent with the findings of [3], [5], which demonstrate that professional ethics has a positive effect on the quality of audit decisions.

Atribution Theory

Attribution Theory explains that individual behavior results from the interaction between internal (dispositional) and external (situational) factors. In the auditing context, this theory is relevant for explaining how obedience pressure from superiors or clients can influence auditors' behavior [20]. Auditors who tend to attribute their performance outcomes to external factors (such as organizational pressure or client demands) are more likely to be influenced when making decisions that deviate from professional standards. Conversely, auditors who perceive the causes of their actions as originating from within themselves (internal attribution) are more likely to adhere to moral values and professional responsibilities, while those who associate their behavior with external factors (external attribution) tend to adjust to social pressures or directives from superiors. In relation to professional ethics, attribution theory suggests that ethics represents a form of internal attribution grounded in moral values, integrity, and professional principles of auditors. Auditors with a high level of ethical awareness tend to view audit decisions as a personal responsibility that reflects their professionalism. On the other hand, obedience pressure constitutes a form of external attribution, as it originates from factors outside the individual auditor, such as pressure from superiors, colleagues, or clients. Auditors who rely more on external attribution are more likely to align their audit decisions with the expectations of others, even when such decisions conflict with auditing procedures or professional ethics. Studies by [8], [10] found that obedience pressure negatively affects auditor independence and the resulting audit decisions.

The Effect of Professional Ethics on Audit Decisions

Professional ethics constitute a set of moral values and principles that guide auditors to act with honesty, objectivity, and independence. Based on Deontological Ethics Theory, auditors with a high level of ethical understanding will continue to act in accordance with their moral obligations and professional standards, even when facing external pressures. Auditors with strong ethical awareness are more likely to produce audit decisions that are rational, independent, and reliable. Previous studies by [3], [5], [6] indicate that professional ethics have a positive effect on audit decisions.
Hypothesis 1: Professional ethics have a positive effect on audit decisions.

The Effect of Obedience Pressure on Audit Decisions

Obedience pressure refers to a condition in which auditors receive instructions or pressure from superiors or clients to adjust audit results in accordance with certain interests. Based on Attribution Theory, auditors who face external pressure are more likely to attribute their actions to situational factors rather than personal responsibility. Auditors who comply with such pressure tend to make less objective decisions, which may reduce their professional independence. This argument is supported by prior studies conducted by [8], [9], [10], which indicate that obedience pressure has a negative effect on auditor independence and the quality of audit decisions.
Hypothesis 2: Obedience pressure has a negative effect on audit decisions.

The Moderating Role of Locus of Control on the Relationship between Professional Ethics and Audit Decisions

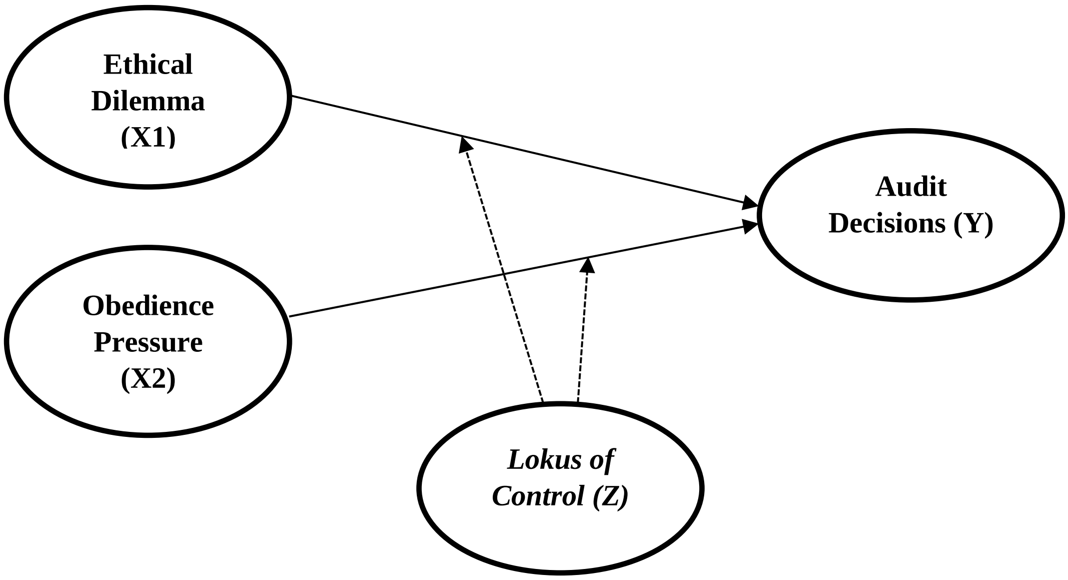
Locus of control reflects the extent to which individuals believe that the outcomes of their actions are determined by their own efforts (internal) or by external factors. Auditors with an internal locus of control tend to believe that sound decisions result from their competencies and personal principles; therefore, they are more resistant to pressure and more consistent in adhering to professional ethical standards. In contrast, auditors with an external locus of control are more susceptible to pressures arising from the work environment. Prior studies by [12], [13] suggest that locus of control can strengthen the relationship between professional ethics and audit decisions.
Hypothesis 3: Locus of control strengthens the positive effect of professional ethics on audit decisions.

The Moderating Role of Locus of Control on the Relationship between Obedience Pressure and Audit Decisions

Within the framework of Attribution Theory, locus of control also influences how auditors interpret the causes of their behavior when facing pressure. Auditors with an internal locus of control are more likely to resist external pressures because they feel personally responsible for their decisions. Conversely, those with an external locus of control tend to attribute their decisions to external parties. Therefore, locus of control is expected to weaken the negative effect of obedience pressure on audit decisions. Empirical evidence from [13] supports that individuals with an internal locus of control are better able to maintain integrity under pressure.
Hypothesis 4: Locus of control weakens the negative effect of obedience pressure on audit decisions.

2. Method

This study employs a quantitative approach using a survey method by distributing questionnaires to auditor respondents working at Public Accounting Firms (Kantor Akuntan Publik/KAP). The quantitative approach is chosen to examine the causal relationships among professional ethics, obedience pressure, locus of control, and audit decisions based on the formulated hypotheses. The population of this study consists of all auditors working at Public Accounting Firms (KAP), particularly in the Central Java and Yogyakarta regions. The auditors included in the population range from junior auditors, senior auditors, supervisors, to audit managers who are directly involved in the audit decision-making process. The sampling technique used in this study is purposive sampling, with the following criteria: auditors who work at KAP, have a minimum of one year of work experience, have been involved in the audit decision-making process, and are willing to complete the research questionnaire fully. The type of data used in this study is primary data, obtained directly through the distribution of questionnaires to auditors at KAP. The research instrument is designed using a five-point Likert scale. The data analysis technique employed in this study is Structural Equation Modeling based on Partial Least Squares (SEM-PLS). SEM-PLS is selected because it is capable of simultaneously testing relationships among latent variables and is suitable for complex research models involving moderating variables. The analysis stages include testing the outer model and the inner model.



Source: Processed primary data, 2026

Figure 1. Research Model

3. Results and Discussion

Descriptive Statistics

Primary data in this study were collected through the distribution of a Google Forms–based questionnaire disseminated via various social media platforms, including WhatsApp, Instagram, and Facebook. The sampling technique employed was purposive sampling, whereby respondents were selected based on specific criteria namely, auditors who are actively working in Public Accounting Firms (KAP). A total of 207 responses from auditors were subsequently compiled and tabulated using Microsoft Excel to facilitate the initial data processing stage. Furthermore, the data analysis was conducted using SmartPLS 3 software.

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Tabel 1. Research Data and Sample

No	Description	Total	Percentage
1	Number of returned questionnaires	225	100%
2	Number of unusable questionnaires	18	8%
3	Number of usable questionnaires	207	92%

Source: Processed primary data, 2026

Tabel 2. Respondent Characteristics

Description	Total	Presentase
Gender		
Male	143	69%
Female	64	31%
In terms of work experience		
Under 2 Years	37	18%
2 - 5 Years	86	42%
Over 5 Years	84	41%
Level of Education		
Diploma	44	21%
D4/S1	137	66%
S2	23	11%
S3	3	1%

Source: Processed primary data, 2026

In general, the respondents are predominantly auditors of productive age with a bachelor's degree in accounting and work experience ranging from 1 to 5 years. The gender composition is relatively balanced between male and female respondents. Overall, these characteristics indicate that the respondents possess sufficient competence and relevant experience to represent the conditions faced by auditors in dealing with ethical dilemmas and obedience pressure in audit decision-making.

Outer Model Testing

Based on the results of the outer loading test in the measurement model using SmartPLS, the indicator values for each construct are presented in Table 3 as follows: Professional Ethics (0.790–0.867), Obedience Pressure (0.887–0.923), Locus of Control (0.896–0.931), and Audit Decision (0.854–0.939). All outer loading values exceed the threshold of 0.70, indicating that each indicator has a strong and significant contribution to its respective latent construct.
Therefore, all indicators for each variable can be considered convergently valid, meaning that these indicators are able to accurately represent their underlying constructs [21].

Table 3. Loading Factor

Indicator		Professional Ethics	Pressure of Obedience	Locus of Control	Audit Decision
Professional Ethics	X1.1	0.840			
	X1.2	0.867			
	X1.3	0.812			
	X1.4	0.790			
	X1.5	0.799			

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Indicator		Professional Ethics	Pressure of Obedience	Locus of Control	Audit Decision
Pressure of Obedience	X2.1		0.923		
	X2.2		0.887		
	X2.3		0.894		
	X2.4		0.909		
	X2.5		0.897		
Locus of Control	Z.1			0.896	
	Z.2			0.925	
	Z.3			0.931	
	Z.4			0.900	
	Z.5			0.901	
Audit Decision	Y.1				0.922
	Y.2				0.868
	Y.3				0.933
	Y.4				0.939
	Y.5				0.854

Source: Processed primary data, 2026

Based on the results presented in Table 4, all constructs in this study exhibit Composite Reliability values above 0.70 and Cronbach's Alpha values above 0.60. This indicates that each variable has good internal consistency and is reliable in measuring the latent constructs under investigation. Therefore, the fulfillment of these two criteria demonstrates that the research instrument meets the requirements of good reliability.

The AVE values for all variables in Table 4 are above 0.50, indicating that each construct is able to explain more than 50% of the variance of its indicators. In other words, the indicators used in this study adequately represent the latent constructs. An AVE value of ≥ 0.50 is the minimum threshold recommended to indicate good convergent validity [21]. In addition to testing reliability and validity, Table 4 also presents the R-Square (R^2) value for the endogenous variable. The R-Square value reflects the ability of the independent variables to explain the variation in the dependent variable within the research model. The result obtained is 0.698 or 69.8%, indicating that the model has a moderate to substantial explanatory power in explaining the dependent variable based on the R-Square value.

Table 4. Composite Reliability, AVE, Cronbach's Alpha, and R-Square

Indikator	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	R-Square
Professional Ethics (X1)	0.880	0.912	0.676	
Pressure of Obedience (X2)	0.943	0.956	0.814	
Audit Decision (Y)	0.944	0.957	0.817	0.698
Locus of Control (Z)	0.949	0.961	0.830	
Moderating Effect 1	1.000	1.000	1.000	
Moderating Effect 2	1.000	1.000	1.000	

Source: Processed primary data, 2026

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Inner Model Testing

In the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach, the inner model is used to explain the relationships among latent constructs, including direct effects, indirect effects, and moderating effects. The evaluation of the inner model aims to assess the strength of causal relationships between latent variables as well as to test the hypotheses proposed in the study. A hypothesis is considered accepted if the significance value is less than 5% [21].

Table 5. Hypothesis Testing

Hypothesis	Description	Original Sample	P-Values	Result
H1	Professional Ethics → Audit Decision	0.315	0.000	Accepted
H2	Obedience Pressure → Audit Decision	0.427	0.000	Accepted
H3	Locus of Control moderates the effect of Professional Ethics on Audit Decision	-0.261	0.000	Accepted
H4	Locus of Control moderates the effect of Obedience Pressure on Audit Decision	0.107	0.096	Rejected

Source: Processed primary data, 2026

Discussion

The Effect of Professional Ethics on Audit Decisions

Based on the hypothesis testing results, professional ethics has a positive and significant effect on audit decisions. This is indicated by a t-statistic value greater than 1.96 and a p-value < 0.05, meaning that the hypothesis is accepted. This finding is consistent with prior studies, such as R [22], which found that professional ethics significantly influences audit decisions. Other studies also suggest that auditors who uphold professional ethics tend to produce more objective and accountable decisions [23], [24]. From a theoretical perspective, professional ethics is grounded in principles such as integrity, objectivity, professional competence, confidentiality, and professional behavior. According to ethical theory, individuals with high ethical standards tend to make rational decisions aligned with norms [18], [19]. These results are also supported by the respondents' characteristics, where most auditors are in their productive age and have 1–5 years of work experience. At this stage, auditors generally maintain strong professional idealism and tend to adhere to ethical codes. Their accounting background further strengthens their understanding of the importance of ethics in maintaining audit quality. Moreover, the positive influence of professional ethics indicates that auditors with strong ethical values are more capable of resisting external pressures from clients or internal parties and adhering to auditing standards. Consequently, audit decisions become more accurate, objective, and reliable. Conversely, weak ethical implementation may reduce audit quality due to increased risks of bias, conflicts of interest, and violations of professional standards. Overall, professional ethics plays a crucial role in enhancing audit decision quality and maintaining the credibility of the auditing profession.

The Effect of Obedience Pressure on Audit Decisions

The hypothesis testing results indicate that obedience pressure has a positive and significant effect on audit decisions, with an original sample value of 0.427 and a p-value of 0.000 (< 0.05), thus the hypothesis is accepted. This implies that higher obedience pressure leads to a stronger influence on audit decision-making. However, this finding contradicts several previous studies, which reported that obedience pressure does not significantly affect audit decisions. Prior research suggests that auditors can maintain independence and professionalism despite pressure from superiors or clients [8], [11], [16], [17]. This discrepancy may be attributed to differences in respondent characteristics and research contexts. In this study, most respondents are auditors with 1–5 years of experience, typically at junior to mid-level positions, making them more vulnerable to authority pressure. In contrast, more experienced auditors tend to have higher confidence and independence, enabling them to resist such pressure. Theoretically, this finding aligns with obedience theory, which suggests that individuals tend to comply with authority. In this context, auditors are likely to align their decisions with directives from those in power. Therefore, empirical conditions, particularly auditor experience and organizational position, play a significant role in determining whether obedience pressure influences audit decisions. Overall, obedience pressure significantly affects audit decisions, highlighting the need to safeguard auditor independence.

The Moderating Role of Locus of Control on the Relationship Between Professional Ethics and Audit Decisions

The moderation test results show that locus of control significantly moderates the relationship between professional ethics and audit decisions, as indicated by a p-value < 0.05. The positive interaction coefficient suggests that a stronger locus of control enhances the effect of professional ethics on audit decisions. This finding is consistent with previous studies, such as [13] and [25], which highlight the importance of locus of control in influencing auditor behavior. Theoretically, ethical theory suggests that individuals with an internal locus of control believe outcomes depend on their own actions. In auditing, such individuals are more likely to adhere to ethical principles and resist external pressures. Conversely, those with an external locus of control are more influenced by external factors such as client or superior pressure. Given that most respondents have 1–5 years of experience, locus of control becomes a crucial factor in guiding their behavior, especially when facing ethical dilemmas. The findings indicate that professional ethics alone is insufficient; it must be supported by strong internal control to produce objective and independent audit decisions. Therefore, organizations should not only emphasize ethical training but also consider psychological factors such as locus of control.

The Moderating Role of Locus of Control on the Relationship Between Obedience Pressure and Audit Decisions

The moderation test results indicate that locus of control does not moderate the relationship between obedience pressure and audit decisions, as evidenced by a p-value > 0.05; thus, the hypothesis is rejected. This means that locus of control neither strengthens nor weakens the effect of obedience pressure on audit decisions. This finding is consistent with prior studies [26], [27], which found that personality traits such as locus of control do not always moderate the impact of external pressure. From an ethical theory perspective, auditors are expected to uphold independence and integrity; however, in practice, obedience pressure may lead to deviations from these principles. According to attribution theory, behavior is influenced by both internal factors and external factors. The results of this study indicate that external factors, particularly obedience pressure, are more dominant, rendering internal factors insignificant. This is further supported by the respondent profile, which is dominated by relatively less experienced auditors who are more susceptible to authority pressure. In conclusion, locus of control does not moderate the relationship between obedience pressure and audit decisions, as strong external pressures tend to override auditors' internal control. This underscores the importance of fostering an organizational environment that supports auditor independence and ethical decision-making.

4. Conclusion

Professional ethics and obedience pressure have a positive effect on audit decisions, while locus of control is unable to moderate these relationships, both in the effect of professional ethics and obedience pressure on audit decisions. These findings indicate that the quality of auditors' decisions is influenced not only by ethical values but also by external pressures encountered in the work environment. From an interpretative perspective, the positive effect of professional ethics suggests that higher levels of understanding and implementation of ethical principles lead to better audit decisions. On the other hand, the positive effect of obedience pressure indicates that auditors tend to follow directions or pressures from authorities in the decision-making process. Meanwhile, the insignificant moderating role of locus of control implies that, under pressure, internal individual factors are not strong enough to alter these relationships. From a theoretical standpoint, these results are consistent with ethical theory, which emphasizes the importance of integrity and independence in the auditing profession, as well as attribution theory, which posits that individual behavior is influenced by both internal and external factors. In this study, external factors in the form of obedience pressure are found to be more dominant than internal factors, thereby weakening the moderating role of locus of control.

The practical implications of this study highlight the importance of strengthening auditors' professional ethics through training and supervision, as well as creating a work environment that supports auditor independence to minimize the influence of obedience pressure. This study has several limitations, including the number and characteristics of respondents, which are dominated by auditors with relatively limited work experience, as well as the limited variables examined. Therefore, future research is recommended to incorporate additional variables such as professionalism, professional skepticism, or organizational culture, and to expand the sample scope for more generalizable results.

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Credit risk and liquidity risk with firm size as moderator variable on profitability in state-owned banking

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ABSTRACT
This study aims to examine the effect of credit risk and liquidity risk on profitability, with firm size as a moderating variable, in state-owned banks listed on the Indonesia Stock Exchange during the 2015–2024 period. The objective of this study is explicitly to analyze both the direct effects of financial risks and the moderating role of firm size in influencing bank profitability, providing a more comprehensive understanding of banking performance. The study provides a comprehensive understanding of how firm-specific characteristics influence the relationship between financial risks and profitability. Grounded in Agency Theory, this study emphasizes that information asymmetry between principals and agents can lead to inefficient risk-taking decisions, where credit risk (proxied by Non-Performing Loans/NPL) and liquidity risk (proxied by Loan to Deposit Ratio/LDR) directly affect profitability (measured by Return on Assets/ROA) through increased costs and reduced financial efficiency. Firm size, measured as the natural logarithm of total assets, is expected to moderate these relationships because larger banks generally possess stronger asset structures, better governance mechanisms, and greater risk absorption capacity. A quantitative approach was employed using secondary data from the annual reports of four state-owned banks over a ten-year period, specifically covering the 2015–2024 observation years, resulting in 40 observations, and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS version 4.1.1.6. The findings indicate that credit risk and liquidity risk have a significant negative effect on profitability, while firm size significantly weakens this negative impact, demonstrating a quasi-moderating role. This indicates that firm size acts as a buffering variable that reduces the intensity of risk effects rather than eliminating them entirely, highlighting its strategic importance in banking stability. The study contributes both theoretically and practically by strengthening the application of Agency Theory in explaining risk–profitability relationships and by providing empirical evidence on the moderating role of firm size in state-owned banks in Indonesia, which remains relatively underexplored in prior research.

Keywords: Credit risk, liquidity risk, firm size, profitability, agency theory.

1. Introduction

The banking sector plays a crucial role in a nation's economic development, acting as an intermediary by collecting funds from the public and providing them as credit to businesses and individuals [1]. State-owned banks, in particular, have a strategic role because they are under government supervision and contribute significantly to maintaining financial stability [2]. The performance of banks in executing this intermediary function is often measured by profitability, a key indicator of a bank's health and operational effectiveness. Profitability also reflects how efficiently banks manage their assets and risks, especially in balancing lending activities and liquidity needs. Stable profitability is essential because it determines the bank's ability to survive during economic uncertainty and financial shocks.

Table 1. Return on Asset

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BRI	4,19	3,84	3,69	3,68	3,5	1,98	2,72	3,76	3,93	3,76
BNI	2,7	2,6	2,7	2,8	2,4	0,5	1,4	2,5	2,6	2,5
BTN	1,61	1,76	1,71	1,34	0,13	0,69	0,81	1,02	1,07	0,83
MANDIRI	3,15	1,95	2,72	3,17	3,03	1,64	2,53	3,3	4,03	3,59

Source: Annual Report of State-Owned Banking Companies 2015-2024

As shown in Table 1, profitability has fluctuated significantly over the past decade. In particular, decreases were observed in 2016, 2019, 2020, and 2024, which indicate that banks face ongoing challenges that may lead to liquidity shortages or higher credit risks [3] [4]. These fluctuations underline the importance of risk management, specifically credit risk and liquidity risk, in influencing profitability. Empirical findings show that increases in credit risk can significantly reduce profitability, where one study reported a negative coefficient of -0.131352, indicating that higher risk directly lowers ROA [5]. This decline occurs because banks must allocate higher reserves for bad loans, reducing income and weakening overall financial performance.

According to Agency Theory, conflicts of interest between principals (shareholders) and agents (management) can create moral hazards and adverse selection, affecting corporate financial decisions [6]. In banking, the management of credit and liquidity risks reflects management's responsibility to the shareholders. Proper risk management ensures that management can optimize the use of bank assets to maximize profitability [7]. Empirical evidence supports this theory by showing that inefficient risk management leads to poor financial outcomes, especially when credit risk is not properly controlled, resulting in declining profitability and increased financial pressure [5]. Effective governance therefore becomes essential to ensure that risk-taking behavior remains within acceptable limits and aligns with shareholder interests.

Credit risk is defined as the potential loss due to a borrower's failure to repay a loan or meet contractual obligations. It is commonly measured by Non-Performing Loans (NPLs), with Indonesian banking regulations limiting NPLs to a maximum of 5% [8]. High NPLs indicate poor credit management, which can reduce profitability. Empirical studies confirm that higher NPL levels negatively affect profitability because they increase loan loss provisions and reduce interest income, which are the main sources of bank revenue [5], [9]. However, some findings indicate that the effect of NPL on profitability is not always significant, suggesting that banks with better credit management systems are able to control the impact of bad loans[10]. This shows that the relationship between credit risk and profitability depends on the effectiveness of risk management practices.

Liquidity risk is the potential inability of a bank to meet its short-term obligations due to cash flow mismatches or asset-liability imbalances. It is commonly measured by the Loan to Deposit Ratio (LDR), which should remain between 89% and 110% based on Bank Indonesia Regulation No. 15/15/PBI/2013 [11], [12] . Liquidity risk can arise from factors such as high customer withdrawals, reliance on short-term funding, deterioration in asset quality, and difficulty selling assets at acceptable prices [11]. Poor liquidity management can also reduce profitability. Empirical evidence shows that liquidity has a positive coefficient of 0.490090 on profitability, indicating that optimal fund allocation can increase ROA when managed efficiently[5]. However, other studies find that liquidity risk has no significant effect on profitability, which suggests that liquidity alone is not sufficient without strong operational efficiency[10]. This indicates that the impact of liquidity risk depends on how well banks manage their funding and lending strategies.

Profitability, often measured using Return on Assets (ROA), shows how efficiently a bank's management utilizes all assets to generate profits [13]. Ineffective management of credit and liquidity risks increases operating costs and diminishes earnings. Firm size, measured as the natural logarithm of total assets, can moderate the relationship between risks and profitability. Larger banks typically have more diversified assets, better risk control, and access to better funding sources, which can either strengthen or weaken the impact of risks on profitability [14]. Empirical findings show that firm size has a positive coefficient of 0.490090 on profitability, indicating that larger banks tend to have stronger financial performance due to economies of scale and better access to capital [5]. Larger banks are also more capable of absorbing financial shocks, reducing the negative impact of credit and liquidity risks on profitability [15].

Previous research supports these relationships. Studies show that credit risk negatively affects profitability [1], liquidity risk reduces profitability [16], liquidity risk reduces profitability [17], and the interaction between credit and liquidity risks influences financial performance in rural banks in Bali [18]. Research on firm size as a moderator in the coal mining sector also indicates that larger firms reduce the moderating effect of liquidity on profitability [19]. Recent studies also highlight inconsistencies in empirical findings, where credit risk consistently shows a negative effect, while liquidity risk shows both significant and insignificant relationships depending on the sample and period studied [5], [10]. These inconsistencies indicate that the relationship between risk and profitability is complex and influenced by multiple internal and external factors.

Although several studies have investigated determinants of bank profitability, evidence specific to state-owned banks in Indonesia remains limited. Previous studies reported that credit risk and liquidity negatively affect profitability in Indonesian state-owned banks, but firm size did not always significantly influence profit outcomes [20]. Other studies showed that firm size moderates the effect of non-performing loans on profitability but did not examine liquidity risk or both risks simultaneously [21]. Research focusing on Islamic banks confirms that credit and liquidity influence profitability but does not cover state-owned conventional banks [22]. Furthermore, some studies indicate that firm size moderates the effect of LDR on profitability, but a comprehensive analysis examining both major risk types in state-owned banks is scarce [23]. Empirical evidence from recent studies also shows that NPL may not always significantly affect profitability, while liquidity can have varying impacts, indicating the need for a more comprehensive model that integrates both risks and moderating variables simultaneously [10], [24]. This gap highlights the importance of examining these variables together in a single research framework.

Given the fluctuating profitability of state-owned banks, the prevalence of credit and liquidity risks, and the potential moderating effect of firm size, this topic warrants further research. Analyzing the interplay of credit risk, liquidity risk, and firm size provides insights that can guide management decisions and enhance financial stability, particularly in state-owned banks that have a critical role in national economic development. This study contributes by providing updated empirical evidence using recent data and integrating multiple risk variables with firm size as a moderating factor. The findings are expected to help bank management improve risk management strategies and support policymakers in maintaining financial system stability [5], [15].

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2. Method

The research employed a quantitative approach using secondary data to examine the impact of credit and liquidity risk on profitability in state-owned banks, with firm size as a moderating variable. Purposive sampling was applied based on corporate criteria, analyzing state-owned banking firms listed on the Indonesia Stock Exchange from 2015 to 2024. A total of forty research samples were collected over ten years [25]. The sample selection focused on banks that consistently published complete financial statements, ensuring data consistency and comparability across the observation period.

To provide a clear understanding of variable measurement, the operational definitions of the variables used in this study are presented in Table 2. ensure the validity and comparability of the results.

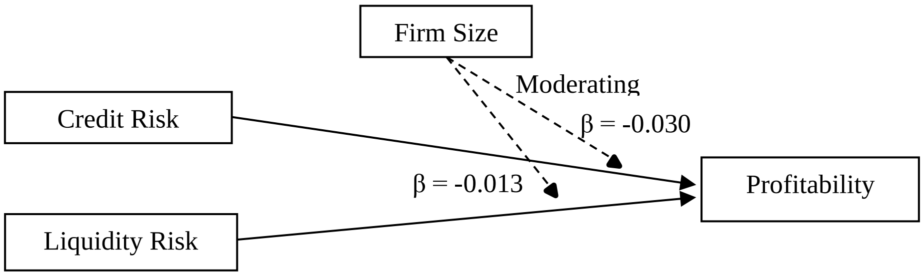
Table 2. Operational Variables

No.	Variables	Indicator	Resource
1.	Credit Risk(X_1)	NPLs = Non-Performing Loans/Total Loans	[2], [3], [4]
2.	Liquidity Risk (X_2)	LDR = Total Loans/ Total Deposits	[1], [16]
3.	Firm Size (M)	Size = Ln (Total Assets)	[19], [21]
4.	Profitability (Y)	ROA = Net Profit After Tax / Total Assets	[5], [10], [13], [17]

Source: Processed secondary data, 2025

Table 2 presents the operational definitions of the variables used in this study. Credit risk is measured using NPLs, liquidity risk using LDR, firm size using the natural logarithm of total assets, and profitability using ROA. These proxies are commonly used in banking research and ensure the validity and comparability of the results.

Furthermore, data analysis was conducted using Structural Equation Modeling via Smart Partial Least Square (SEM-PLS) version 4.1.1.6, which is considered appropriate for testing complex models involving moderating variables and latent constructs simultaneously [10]. This approach allows the estimation of both direct and interaction effects, making it suitable for analyzing the role of firm size as a moderator in the relationship between risk and profitability.



Source: Processed secondary data, 2025

Figure 1. SEM-PLS Inner Model of Credit Risk, Liquidity Risk, Firm Size, and Profitability

Figure 1 and the subsequent analysis show that Firm Size (M) moderates the relationship between Credit Risk (X1), Liquidity Risk (X2), and Profitability (Y). The inner model illustrates the structural relationships between variables, where arrows represent causal links and interaction terms indicate moderating effects, making the analysis easier to interpret visually. The path coefficients for the moderation effects are negative: -0.030 for X1×M → Y and -0.013 for X2×M → Y, with T-Statistics of 5.056 and 3.364, and P-values of 0.000 and 0.001, respectively. All statistical indicators meet the significance criteria (T-statistics > 1.96 and p-value < 0.05), confirming that the moderating effects are statistically valid. These negative coefficients indicate a weakening moderation effect, meaning that larger banks slightly reduce the negative impact of credit and liquidity risks on profitability. This finding

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clearly shows that firm size acts as a buffer variable rather than a strengthening factor in the relationship between risk and profitability.

In other words, while Credit Risk and Liquidity Risk negatively affect Profitability, the moderating effect of Firm Size buffers these adverse effects. This scenario is categorized as quasi-moderation, since both the direct effect of the risk variables and the moderated effect by Firm Size are statistically significant. Quasi-moderation occurs when the moderating variable has both a direct effect on the dependent variable and an interaction effect, which is evident in this study through the significant coefficients of both paths. Empirical findings indicate that credit risk has a negative coefficient (−0.131352) on profitability, while liquidity effects may vary depending on management efficiency, supporting the presence of partial moderation rather than full moderation [5], [10]. This condition indicates that firm size does not eliminate risk effects but reduces their magnitude.

From a practical perspective, larger banks tend to have more diversified portfolios, stronger risk management systems, and greater access to capital, enabling them to absorb losses arising from non-performing loans more effectively and thereby mitigating the negative impact of credit risk on profitability. Diversification of assets allows large banks to spread risk across multiple sectors, reducing dependence on a single source of income and minimizing financial shocks. In addition, larger banks are generally able to maintain sufficient cash reserves and have better access to interbank or market funding, which allows them to meet short-term obligations even during periods of liquidity stress and consequently reduce the adverse effect of liquidity risk on profitability. Empirical evidence shows that larger banks tend to achieve higher profitability due to economies of scale and more efficient financial resource allocation [15].This confirms that firm size plays a critical role in stabilizing financial performance under risk exposure conditions.

From a theoretical standpoint, these findings are aligned with Agency Theory: larger banks, due to better governance and oversight, can reduce the negative consequences of adverse selection and moral hazard associated with credit and liquidity risks. Stronger internal control systems in larger institutions improve monitoring of management decisions, thereby reducing inefficiencies and aligning managerial actions with shareholder interests [5]. This condition reinforces the argument that firm size contributes not only operationally but also institutionally in improving banking performance. As a result, larger banks are better positioned to manage risks and maintain stable profitability.

In conclusion, the moderation analysis confirms that Firm Size weakens the negative effects of Credit Risk and Liquidity Risk on Profitability, and the results highlight the importance of considering quasi-moderating variables in risk management studies of state-owned banks. The findings indicate that the role of firm size is more likely to reduce the intensity of risk impact rather than completely eliminate it, emphasizing its function as a buffering variable. This study also suggests that improving asset scale and operational efficiency can enhance the effectiveness of risk management strategies in banking institutions [5], [15]. Therefore, integrating moderating variables such as firm size provides a more comprehensive understanding of financial performance in the banking sector.

3. Results and Discussion

Descriptive Statistic Analysis

Table 3. Descriptive Statistic

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Credit Risk(X_1)	40	.600	4.500	2.336	1.006
Liquidity Risk (X_2)	40	79.880	112.240	92.913	7.646
Firm Size (M)	40	18.960	21.610	20.573	.691
Profitability (Y)	40	.070	3.080	1.732	.796
Valid N (Listwise)	40				

Source: Processed secondary data, 2025

Table 2 shows The credit risk (X1) results of this descriptive statistical test have a mean of 2.336 and a standard deviation of 1.006, with a minimum value of 0.600 and a maximum value of 4.500 from the 2015–2024 timeframe. Liquidity risk (X2) has an average value of 92.913 and a standard deviation of 7.546 for the years 2015–2024, with a minimum value of 79.880 and a maximum value of 112.240. Firm size (M) has an average of 20.573 and a standard deviation of 0.691 during the 2015–2024 period, with a minimum value of 18.960 and a maximum value of 21.610. Profitability (Y) has an average of 1.732 and a standard deviation of 0.796 during the 2015–2024 period, with a minimum value of 0.070 and a maximum value of 3.080. These results indicate that variability in profitability is relatively high compared to firm size, suggesting that financial performance is more sensitive to risk factors than to structural differences among banks. The variation in liquidity risk, with values exceeding the ideal LDR threshold in some periods, also reflects potential inefficiencies in fund allocation. Empirical studies confirm that fluctuations in risk variables, particularly credit risk, significantly influence profitability levels in banking institutions [5]. This indicates that risk management plays a crucial role in maintaining stable financial performance.

Structural Model Evaluation (Inner Model)

R-Square Analysis

Table 4. R-Square

Variabel	R-square	R-square adjusted
Profitability	0.900	0.890

Source: Processed secondary data, 2025

The test result R Square shows that the Profitability variable is 0.890, meaning that the variability of the Profitability construct is 89%. This means that it has a strong effect. An R-Square value of 0.890 indicates that the model has a very high explanatory power, meaning that credit risk, liquidity risk, and firm size collectively explain most of the variation in profitability. This result suggests that the selected variables are highly relevant in predicting banking performance. Empirical evidence also supports that financial risk variables significantly contribute to profitability variations in banking sectors [10]. However, the remaining 11% indicates that other factors such as operational efficiency or macroeconomic conditions may also influence profitability.

Multicollinearity (Collinearity)

Table 5. VIF

Variabel	VIF
Liquidity Risk ->Profitability	1,344
Credit Risk -> Profitability	1,777
Fim Size -> Profitability	2,178
Firm Size x Liquidity Risk-> Profitability	1,313
Firm Size x Credit Risk -> Profitability	1,481

Source: Processed secondary data, 2025

The multicollinearity test results show that the VIF value for each variable is below 5. Therefore, it can be said that there is no strong multicollinearity between variables. Low VIF values indicate that the independent variables are not highly correlated with each other, ensuring that each variable contributes uniquely to the model. This strengthens the validity of the regression results and reduces the risk of biased estimations. The absence of multicollinearity also confirms that credit risk, liquidity risk, and firm size represent distinct constructs in banking analysis. This condition is essential for ensuring accurate interpretation of the moderating effects in the model.

Predictive Relevance (Q Square)

Table 6. Q-Square

Variabel	Q²predict
Profitabilitas	0.999

Source: Processed secondary data, 2025

The Q Square value for Profitability is 0.999. Therefore, since Q Square = 0.999 > 0, it can be concluded that the model has predictive relevance. A Q-Square value close to 1 indicates that the model has excellent predictive capability in estimating profitability outcomes. This suggests that the model is not only statistically strong but also practically useful in forecasting banking performance. Empirical research supports that models incorporating risk variables tend to have high predictive relevance due to the strong influence of financial risks on profitability [10]. This reinforces the robustness of the research model used in this study.

Effect Size (F Square)

Table 7. F-square

Variabel	F-Square
Liquidity Risk ->Profitability	2219,012
Credit Risk -> Profitability	1883,812
Firm Size -> Profitability	412,179
Firm Size x Liquidity Risk-> Profitability	0,729
Firm Size x Credit Risk -> Profitability	2,256

Source: Processed secondary data, 2025

The Liquidity Risk Variable has a high impact on profitability, according to the F Square test, with a F Square value of 2219.012. The Credit Risk Variable on Profitability has a significant influence (F Square = 1883.812). The Liquidity Risk Variable, controlled by Firm Size, has a substantial effect on Profitability (F Square = 0.729). The Credit Risk Variable, moderated by Firm Size on Profitability, shows a substantial effect (F Square value = 2.256). These findings indicate that liquidity risk has the strongest direct influence on profitability compared to other variables. However, the relatively smaller effect size in the interaction terms suggests that the moderating role of firm size, although significant, is more limited in magnitude. Empirical studies confirm that while risk variables strongly affect profitability, moderating variables tend to reduce rather than dominate the relationship [5]. This highlights the importance of interpreting moderation effects carefully in financial research.

Goodness Of Fit (Fit Model)

Table 8. Fit Model

	Saturated model	Estimated model
SRMR	0,000	0,001

Source: Processed secondary data, 2025

The Goodness of Fit test results show that an SRMR value of 0.001 indicates an exceptionally high level of fit (perfect fit), meaning that the test results can be declared to be in compliance with the criteria. An SRMR value close to zero indicates that the difference between the observed data and the model estimation is minimal, confirming the accuracy of the model. This suggests that the proposed structural model is highly suitable for explaining the relationship between variables. A good model fit strengthens the credibility of the research findings and supports further interpretation of the results. This also indicates that the SEM-PLS approach is appropriate for this study.

Hypothesis Test (Direct Effect)

Table 9. Path Coefficient

Variable	Original sample	Sample mean	Standard deviation	T statistics	P values	Accepted/ Rejected
Firm Size x Liquidity Risk-> Profitability	-0.013	-0.014	0.004	3.364	0.001	Accepted
Firm Size x Credit Risk -> Profitability	-0.030	-0.030	0.006	5.056	0.000	Accepted

Source: Processed secondary data, 2025

The T-Statistic and P-Value values for each variable effect are presented based on the path coefficient test results. The T-Statistic value for the relationship between Firm Size (M) and Profitability (Y) is greater than 1.65 (7.938 > 1.65), while the P-Value is less than 0.1 (0.000 < 0.1). Therefore, it can be concluded that the profitability of state-owned banks is significantly influenced by Firm Size (M). The T-Statistic value for the relationship between Credit Risk (X1) and Profitability (Y) is greater than 1.65 (8.571 > 1.65), and the P-Value is less than 0.1 (0.000 < 0.1). Thus, it can be stated that credit risk has a significant effect on profitability. Similarly, the T-Statistic value for the relationship between Liquidity Risk (X2) and Profitability (Y) is greater than 1.65 (7.938 > 1.65), while the P-Value is less than 0.1 (0.000 < 0.1). Therefore, liquidity risk also has a significant effect on profitability. These findings are consistent with Agency Theory, which suggests that ineffective risk management leads to reduced financial performance due to inefficiencies in decision-making [6]. Empirical evidence also shows that credit risk has a significant negative impact on profitability, while liquidity risk may vary depending on management efficiency [5], [10]. This confirms that both risk variables play a crucial role in determining banking performance.

Moderating Effect Test (Interaction Effect)

Table 10. Moderating Effect

Variable	Original sample	Sample mean	Standard deviation	T statistics	P values	Accepted/ Rejected
Liquidity Risk ->Profitability	-0.809	-0.818	0.102	7.938	0.000	Accepted
Credit Risk -> Profitability	-0.858	-0.871	0.100	8.571	0.000	Accepted
Firm Size-> Profitability	-0.444	-0.455	0.080	5.536	0.000	Accepted

Source: Processed secondary data, 2025

Based on the moderation test results, the Firm Size variable was found to significantly moderate the effect of Credit Risk and Liquidity Risk on Profitability. For Credit Risk, the Original Sample value is -0.030, with a T-Statistic of 5.056 and a P-Value of 0.000, indicating that the moderating effect of Firm Size is statistically significant. The negative coefficient suggests that Firm Size weakens the impact of Credit Risk on Profitability, meaning that larger firms can mitigate the negative effect of credit risk on profitability. This scenario can be categorized as quasi-moderation, since both the direct effect of Credit Risk and its moderating effect by Firm Size are significant. This finding indicates that firm size acts as a buffering variable, reducing the intensity of credit risk rather than eliminating its impact. Empirical studies confirm that larger banks are better able to absorb credit losses due to stronger capital structures and diversified portfolios [5], [15]. This supports the argument that firm size enhances resilience in banking operations.

Similarly, for Liquidity Risk, the Original Sample value is -0.013, with a T-Statistic of 3.364 and a P-Value of 0.001, indicating a significant moderating effect. The negative coefficient implies that Firm Size reduces the effect of Liquidity Risk on Profitability, showing that larger firms are better able to absorb liquidity risk, thereby reducing its negative impact on financial performance. Like the Credit Risk moderation, this also represents quasi-moderation, as both the direct effect and the moderating effect are significant. Empirical evidence shows that effective liquidity management in larger banks contributes to stable profitability, particularly through better access to funding sources and improved cash flow management [10]. This reinforces the importance of firm size in mitigating financial risks.

The strengths of these results lie in their high level of statistical significance, demonstrating that Firm Size reliably influences the relationship between risk and Profitability. This provides practical insight for risk management strategies in state-owned banks. Furthermore, the presence of quasi-moderation strengthens the theoretical contribution of Firm Size as a moderating variable. However, the analysis also reveals that the moderating effect is relatively small compared to direct effects, indicating that risk variables remain the primary determinants of profitability. This suggests that improving risk management practices should remain the main priority for banking institutions.

However, there are some limitations. The negative moderation coefficient indicates a weakening effect, but the study does not quantify the extent to which Firm Size mitigates the risks. Additionally, the moderating effect was tested only for Firm Size, while other factors such as corporate governance or capital structure could also influence the risk-profitability relationship. Finally, the relatively small sample size (N=40) limits the generalizability of the findings to the entire population of state-owned banks. Future research is recommended to include additional moderating variables and use larger sample sizes to improve generalizability. The use of graphical interaction plots is also suggested to better visualize how firm size influences the relationship between risk and profitability.

Discussion of Research Results

The Effect of Credit Risk on Profitability

The results of this study indicate that an increase in the Non-Performing Loan (NPL) ratio has a negative impact on Profitability, confirming that Hypothesis 1 (H1) is accepted. High NPLs reflect low-quality bank assets and borrowers' inability to meet their loan obligations, which leads to an increase in loan loss reserves and a reduction in the company's asset value. From the perspective of Agency Theory, this situation illustrates adverse selection, where bank managers (agents) may select debtors inadequately due to information asymmetry between the bank and its clients. Loans extended to high-risk borrowers without proper risk assessment increase the bank's credit risk and ultimately decrease profitability. Empirical evidence strengthens this finding by showing that credit risk has a negative coefficient of −0.131352 on profitability, indicating that an increase in NPL directly reduces bank performance due to rising provisioning costs and declining interest income [5]. This condition highlights that ineffective credit screening and monitoring systems remain a major source of financial inefficiency in banking operations.

These findings are consistent with previous research. For example, [19] reported that credit risk negatively affects business profitability, and [18] found that credit risk significantly and adversely impacts the profitability of banking firms. Consequently, the lower the NPL ratio of a bank, the higher its profitability, which can enhance investor confidence in the bank's management and overall financial performance. However, some empirical studies indicate that the effect of credit risk is not always significant when banks implement strong risk management and operational efficiency practices, suggesting that internal control systems play a crucial role in mitigating risk impacts [10]. This indicates that the relationship between credit risk and profitability is conditional, depending on the quality of risk governance within the bank.

The Effect of Liquidity Risk on Profitability

Based on the results of the analysis of Liquidity Risk on Profitability, H2 can be accepted, so it can be concluded that Liquidity Risk has a negative impact on Profitability. Based on the results of this analysis, the interpretation is that the higher the ratio of Loans to Deposits in the form of credit to third parties, the lower the bank's profitability. This means that banks with low liquidity tend to have less ability to pay their short-term obligations, which will reduce their operational efficiency. As implied by agency theory, moral hazard means that managers (agents) have the potential to make strategic decisions in lending without considering liquidity risk in order to improve short-term performance. Empirical findings show that liquidity risk can significantly affect profitability, where inefficient liquidity allocation reduces the bank's ability to generate optimal returns from its assets [10]. This indicates that excessive lending without proper liquidity planning may increase financial vulnerability and reduce overall bank performance.

The study's findings are consistent with those of [13] who claimed that between 2013 and 2020, liquidity risk significantly and negatively affected state-owned banks' profits. This is comparable to study by [26] which claims that the profitability of banking firms in the MENA region is significantly impacted negatively by liquidity risk. The decline in profitability can be caused by a high LDR value, which leads to high risk. If the loans disbursed are problematic or fail, the bank will have difficulty returning the funds deposited by customers, which will ultimately impact the company's profitability. However, other studies show that liquidity risk may also have a positive or insignificant effect when managed efficiently, particularly when banks are able to optimize loan distribution and maintain balanced funding structures [5]. This highlights that liquidity risk does not always reduce profitability, but depends on the effectiveness of liquidity management strategies.

The Effect of Firm Size as a Moderating Variable in the Effect of Credit Risk on Profitability

The analysis shows that Firm Size significantly moderates the relationship between Credit Risk and Profitability, confirming that Hypothesis 3 (H3) is accepted. The results indicate that Firm Size acts as a quasi-moderator, meaning that it both moderates the effect of Credit Risk and coexists with a significant direct effect of Credit Risk on Profitability. In other words, while Credit Risk negatively affects Profitability, the moderating effect of Firm Size reduces the magnitude of this negative impact, but does not completely eliminate it. Empirical evidence supports this finding, showing that larger banks tend to have stronger financial performance and better capacity to absorb credit losses due to higher capital and diversified portfolios [15]. This suggests that firm size functions as a buffering variable that stabilizes profitability under high-risk conditions.

Larger banks, characterized by greater total assets and sufficient levels of cash or cash equivalents, are better able to withstand the negative consequences of Credit Risk on financial performance. This is because larger banks are not entirely dependent on productive assets to generate income and also maintain adequate liquidity reserves, which function as a buffer against potential losses from non-performing loans. As a result, the adverse effect of Credit Risk on bank profitability becomes less pronounced as firm size increases. Empirical findings also indicate that larger banks benefit from economies of scale, allowing them to distribute risk more efficiently across different asset portfolios [5]. This strengthens the argument that scale plays a critical role in enhancing financial resilience.

From the perspective of Agency Theory, this finding suggests that effective mitigation of adverse selection occurs in larger banks. When banks accurately assess borrower quality despite information asymmetry, the negative consequences of high-risk lending are partially offset. Thus, the detrimental effects of risky managerial behavior and errors in credit risk assessment on Profitability are mitigated by the scale of the business. Stronger governance systems in large banks improve monitoring and reduce information asymmetry, thereby minimizing inefficient lending decisions [5]. This supports the theoretical assumption that firm size contributes to reducing agency conflicts.

These findings are in line with previous studies. For instance, [17] found that Credit Risk reduces the effect of Liquidity on the financial performance of Bali's traditional rural banks. According to study by [27] reported that the negative impact of Credit Risk on investor confidence in banks listed on the Indonesia Stock Exchange between 2020 and 2023 was mitigated by Firm Size. These results highlight the effectiveness of governance, risk management, and the application of agency theory in reducing conflicts of interest and maintaining the stability of bank profitability. However, the moderating effect is relatively small compared to the direct effect, indicating that credit risk remains a dominant factor influencing profitability.

The Effect of Firm Size as a Moderating Variable in the Effect of Liquidity Risk on Profitability

The analysis indicates that Firm Size significantly moderates the relationship between Liquidity Risk and Profitability, confirming that Hypothesis 4 (H4) is accepted. The results classify Firm Size as a quasi-moderator, meaning that it both moderates the effect of Liquidity Risk and coexists with the significant direct effect of Liquidity Risk on Profitability. In other words, although Liquidity Risk negatively affects Profitability, the moderating effect of Firm Size reduces this negative impact, but does not entirely remove it. Empirical evidence shows that larger banks are better able to manage liquidity due to access to diverse funding sources and more efficient cash flow management systems [10]. This indicates that firm size enhances a bank’s ability to maintain liquidity stability during financial pressure.

Larger banks, which have greater total assets and stronger liquidity reserves, are better equipped to absorb the adverse effects of Liquidity Risk on financial performance. These banks implement more rigorous risk management practices and maintain access to diverse funding sources, including third-party deposits and interbank money markets. Consequently, even when liquidity pressures increase, large banks can meet short-term obligations efficiently, thereby mitigating the negative impact of Liquidity Risk on Profitability. Empirical findings confirm that firm size positively influences profitability by improving financial flexibility and operational efficiency [15]. This reinforces the argument that larger institutions are more resilient to liquidity shocks.

From the perspective of Agency Theory, particularly moral hazard, larger banks operate under stricter regulatory supervision and enhanced shareholder oversight. This oversight reduces excessive risk-taking by management that could harm the interests of capital providers. Therefore, the quasi-moderating role of Firm Size indicates that while Liquidity Risk continues to suppress Profitability, its negative effect is partially buffered by firm scale and effective governance mechanisms. This finding highlights that governance quality plays an important role alongside firm size in reducing agency problems in banking operations.

These findings are consistent with previous studies. For example, [28] reported that in food and beverage companies listed on the Indonesia Stock Exchange (IDX), the negative effect of liquidity risk on financial distress is weakened by company size. Similarly, [29] found that Firm Size reduces the moderating effect of liquidity risk on Profitability in transportation companies listed on the IDX from 2017 to 2020. In the banking context, larger banks demonstrate greater resilience in managing liquidity risk, as well as enhanced oversight that minimizes conflicts of interest between management and investors. Nevertheless, the moderating effect remains limited, indicating that improving liquidity management practices is still essential for sustaining profitability.

4. Conclusion

Based on the discussion in the previous chapter, the study concludes that Credit Risk negatively affects Profitability. An increase in Non-Performing Loans (NPLs) not only raises credit loss reserves but also reduces the bank's ability to generate stable income, which ultimately weakens overall financial performance. Liquidity Risk also negatively impacts Profitability, as higher Loan to Deposit Ratios (LDRs) constrain the bank's capacity to generate income. While Firm Size shows a negative direct effect on Profitability, it mitigates the adverse impacts of both Credit Risk and Liquidity Risk. This indicates that Firm Size functions as a buffering variable that reduces the intensity of risk effects rather than eliminating them entirely, and the presence of quasi-moderation confirms that Firm Size plays a dual role in influencing profitability both directly and indirectly.

The findings of this study provide several important implications for policy makers, bank management, and future research. For policy makers and regulators, the results suggest the need to strengthen risk management frameworks for state-owned banks. This can be achieved by improving internal controls, enforcing stricter prudential standards in credit allocation, monitoring liquidity ratios more effectively, and ensuring that banks maintain sufficient liquidity buffers. In addition, the development of early warning systems based on financial risk indicators is essential to anticipate potential banking instability, and promoting good corporate governance and enhancing oversight at the board and management levels can reduce moral hazard, support operational efficiency, and encourage responsible risk-taking. Stronger supervisory mechanisms are also needed to ensure that risk exposure remains within acceptable limits.

For bank management, the study highlights the importance of leveraging firm size strategically. Larger banks can use their scale to implement stronger risk mitigation measures, maintain liquidity reserves, and optimize asset management to minimize the negative impacts of Credit and Liquidity Risk on profitability. Digital innovation and advanced risk monitoring systems are also recommended to improve operational resilience. Management should also prioritize improving credit evaluation processes and maintaining an optimal balance between lending and liquidity, so that excessive risk exposure can be avoided. Efficient cost management and asset diversification strategies are equally important in sustaining profitability under fluctuating economic conditions.

For future research, several directions are suggested. Subsequent studies could incorporate additional determinants of Profitability, such as capital structure, corporate governance quality, firm value, digital risk management, inflation, and interest rates. Expanding the observation period and increasing the sample size would also improve the robustness and generalizability of the findings. Furthermore, further examination of Firm Size as a moderating variable could provide deeper insight into how large banks maintain profitability stability under varying levels of Credit and Liquidity Risk. Future studies are also encouraged to examine alternative moderating variables, such as governance mechanisms and operational efficiency, and the use of comparative or cross-country analysis may provide broader insights into banking performance dynamics.

Overall, the study emphasizes that both firm-specific characteristics and effective risk management play critical roles in sustaining profitability in the banking sector, offering practical guidance for regulators and managers while providing a foundation for future academic research. The integration of risk management strategies with organizational capacity, particularly firm size, becomes a key factor in achieving sustainable financial performance in the long term.

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