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DAFTAR ISI

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STRATEGIES AND CHALLENGES OF SMES IN PURWAKARTA: A LITERATURE REVIEW

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Abstract- This paper examines the strategies and challenges faced by Small and Medium Enterprises (SMEs) in Purwakarta, a district in West Java, Indonesia. SMEs play a crucial role in the economy, contributing to job creation and regional development. SMEs face numerous challenges that affect their growth and sustainability. The problem addressed in this paper is the limited growth and sustainability of SMEs in Purwakarta due to challenges inadequate access to financing, lack of skilled labor, and adopting modern technologies. This paper provides a novel approach by combining a literature review with text analysis using PoP (Publish or Perish) and VOSviewer for SME literatures in Indonesia. This study employs a literature review approach combined with text analysis using PoP and VOSviewer. The literature review synthesizes existing research on SMEs in Purwakarta on the strategies and challenges. VOSviewer is used to maps the relationships between key terms in SME research. SMEs face challenges in capital, infrastructure, and a lack of skilled labor. Economic factors, market fluctuations, and regulatory issues further impact their strategies. The study highlights the need for goverment support to promote sustainable growth. The literature on SMEs in Purwakarta highlights their significant economic impact on business performance, growth, and employment, with research identifying six interconnected clusters reflecting the challenges and opportunities faced by SMEs. To maximize their potential, SMEs must implement tailored strategies that enhance financial performance, market expansion, and address the unique characteristics of the local economy, infrastructure, and resources.
Keywords: Challenges; Purwakarta; SMEs; Sustainability; VOSviewer

1. INTRODUCTION
1.1 Research Background

Small and medium-sized enterprises (SMEs) form the backbone of local economies (Gamage et al., 2020), driving regional growth (Gamidullaeva et al., 2020) and generating employment opportunities (Tambunan, 2019). In Purwakarta, a district in West Java, Indonesia, SMEs play a vital role in fostering community engagement (Parmalasari & Purwani, 2023) and economic development (Imroatussolehah et al., 2024). However, despite their significance, many SMEs in the region face challenges that hinder their growth and long-term sustainability. This study explores the strategies adopted by SMEs in Purwakarta to overcome these challenges and examines the key factors that have contributed to their success

The urgent need to address the issues impeding the expansion and sustainability of SMEs (Das et al., 2020) in Purwakarta is what motivated this study. These businesses frequently face major challenges, such as restricted access to funding, a lack of workers, and trouble implementing contemporary technology. These obstacles hinder the district's overall economic development in addition to limiting the growth potential of individual SMEs. This study's main goal is to comprehend how SMEs may get beyond these obstacles in order to experience steady growth and acquire a competitive edge.

The novelty of this research lies in its methodological approach, which combines bibliometric analysis tools, Publish or Perish (PoP) and text visualization VOSviewer, with a comprehensive literature review. By applying these tools, the study provides a fresh perspective on the existing body of knowledge, enabling a systematic exploration of emerging trends, research gaps, and conceptual linkages. Focused on SMEs in Purwakarta, an area that has received limited attention in previous studies, this approach deepens our understanding of Purwakarta' SME. It contributes valuable insights into the challenges and strategies unique to this specific context, enriching the broader discourse on sustainable development for local enterprises.

1.2 Literature Review
1.2.1 Definition and Characteristics of SMEs

Small and Medium Enterprises (SMEs) are widely recognized as pivotal players in global and local economies due to their adaptability (Franczak & Weinzimmer, 2022), resilience (Bak et al., 2023), and ability to foster innovation (Hilkenmeier et al., 2021; Phonthanukitithaworn et al., 2023). SMEs are generally defined based on parameters such as annual revenue, number of employees, and asset size, which vary by country. In Indonesia, the definition is stipulated under Law No. 20 of 2008, which categorizes SMEs based on their net worth and annual sales. Specifically, small enterprises are defined as businesses with a net worth of between IDR 50 million and IDR 500 million and medium enterprises with a net worth of up to IDR 10 billion. This classification underpins the strategic significance of SMEs in contributing to economic diversification and regional development.

1.2.2 Role of SMEs in Local and National Economies

SMEs serve as the backbone of economic growth in both developed and developing nations (Bayraktar & Algan, 2019). In Indonesia, SMEs contribute significantly to the Gross Domestic Product (GDP), accounting for approximately 60% of the nation's GDP (Kelly et al., 2023) and absorbing more than 97% of the workforce (Kurniadi & Wishnu Wardana, 2024). Their role in fostering entrepreneurship, reducing regional disparities, and promoting economic resilience cannot be overstated.

On a local level, SMEs are instrumental in driving regional economies (Bayraktar & Algan, 2019; Imroatussolehah et al., 2024), especially in underserved areas. They create employment opportunities (Tambunan, 2019), enhance community engagement (Parmalasari & Purwani, 2023), and encourage the utilization of local resources (Gamage et al., 2020). By offering tailored products and services, SMEs also support cultural preservation (Yunus et al., 2023) and meet unique market demands (Mariyudi, 2019). These contributions strenghten SMEs indispensable role in achieving sustainable development and economic stability.

Despite their immense contributions (Amoah et al., 2022), SMEs often face structural challenges that limit their growth potential (Bui et al., 2021; Kindström et al., 2024). Limited access to financing (Megersa, 2020), inadequate infrastructure (Isichei et al., 2020), and low levels of digital literacy (Ollerenshaw et al., 2021) are among the most persistent obstacles.

Many SMEs struggle to adopt modern technologies (Shaikh et al., 2021), access wider markets (Calabrese et al., 2021), or comply with regulatory requirements (Jahankhani et al., 2022). These limitations hinder their scalability and their competitiveness in an increasingly globalized economy. Therefore, addressing these issues through inclusive policies and targeted interventions is crucial for unleashing the full potential of the SME sector.

To ensure the long-term sustainability (Manzaneque-Lizano et al., 2019) and resilience of SMEs (saad et al., 2021) it is essential to foster an enabling ecosystem through collaboration between government (Alkahtani et al., 2020), private sector (Gannon et al., 2021), and academic institutions (Brako Ntiamoah et al., 2016). Strategic initiatives such as digital transformation programs (Okfalisa et al., 2021), mentorship (Onyenwe & Ifunanya, 2021), and easier access to financing (Megersa, 2020) can enhance the adaptive capacity of SMEs. Moreover, promoting innovation and sustainability practices within SMEs will enable them to survive but thrive amidst uncertainties and evolving market demands. Such efforts are vital for reinforcing SMEs as a central pillar of inclusive and sustainable economic development.

1.2.3 A Regional Perspective on West Java and Purwakarta

Indonesia boasts a thriving SME sector, with more than 64 million registered enterprises as of recent data (Hermawan & Nugraha, 2021). These businesses are vital in driving economic progress, especially in provinces like West Java, where urbanization and industrialization are accelerating. West Java is a hub for manufacturing, agriculture, and creative industries (Ahman et al., 2024) providing fertile ground for SME growth. The provincial government actively supports SMEs through initiatives aimed at enhancing access to financing, improving infrastructure, and promoting technological adoption.

In the district of Purwakarta, SMEs form a critical component of the local economy (Gamage et al., 2020), contributing to sectors such as agriculture (Sulistyowati et al., 2020), food processing (Parmalasari & Purwani, 2023), and handicrafts (Sunjoto et al., 2023). Purwakarta's strategic location, close to major industrial centers, positions its SMEs advantageously for market expansion. However, challenges such as limited access to advanced technology, a lack of skilled labor, and regulatory hurdles persist, impacting their growth and competitiveness.

The characteristics of SMEs include their predominantly informal operations (Nguyen & Canh, 2021), limited market reach (Amiri et al., 2023), and reliance on local resources (Ausat et al., 2023). Despite these limitations, SMEs exhibit flexibility in responding to market demands and play a key role in job creation, innovation, and economic inclusivity. They act as a bridge for transitioning economies, enabling the development of a more robust business ecosystem. To provide a comprehensive understanding of the existing research on SMEs, Table 1 summarizes key studies relevant to this field. Each entry includes the study's title, publication year, authors, research methods, main variables examined, key findings, and noted limitations. This compilation offers valuable insights into the diverse approaches and outcomes in SME research, highlighting gaps and opportunities for future investigation.

The reviewed literature highlights a broad spectrum of strategies and challenges faced by SMEs across various contexts, with relevance to the case of Purwakarta. Many studies emphasize factors such as innovation (Hilkenmeier et al., 2021; Phonthanukitithaworn et al., 2023), digital transformation (Hermawan & Nugraha, 2021; Imroatussolehah et al., 2024), financial access (Nguyen & Canh, 2021; Tambunan, 2019), and resilience (Gamage et al., 2020; Yunus et al., 2023) as critical for SME performance and sustainability. The methodologies employed are diverse, ranging from quantitative approaches like SEM and bibliometric analysis to qualitative methods and participatory action research.

Table 1. Summary of Key Literature on Small and Medium Enterprises (SMEs)

No.	Title and authors	Methods	Variables	Findings	Limitation
1.	How SMEs Leverage Adaptability, Risk-Taking, and Action Into Positive Performance— A Moderated Mediation Model (Franczak & Weinzimmer, 2022)	The study uses a moderated-mediation design with quantitative data analysis to examine the relationships between adaptability, action orientation, risk-taking, and SME performance..	Independent Variable: Organizational Adaptability; Mediator: Action Orientation; Moderator: Risk-taking (organizational risk environment); Dependent: SME performance	Adaptability positively influences action orientation, which in turn enhances performance, with stronger effects in risk-taking environments.	The study is limited by self-reported data, a cross-sectional design, and a region-specific sample, which may affect bias, causality, and generalizability.
2.	Limited to 2006–2019 publications; excludes recent data and informal SME practices due to data scarcity (Bak et al., 2023)	Systematic Literature Review (SLR) of 101 journal articles published between 2006 and 2019.	Collaboration; Organizational culture; SME capabilities; Information systems; Cost and financing	Systematic review reveals SME resilience depends on collaboration, capabilities, IT use, financing; limited by scope.	Limited to 2006–2019 publications; excludes recent data and informal SME practices due to data scarcity.
3.	How to foster innovation in SMEs: evidence of the effectiveness of a project-based technology transfer approach (Hilkenmeier et al., 2021)	Structural Equation Modeling (SEM); case data from 106 SME-RTO projects	Trust, absorptive capacity, collaboration effectiveness, R&D engagement, project outcomes	Long-term R&D engagement; trust drives capability-building and economic benefit	Self-reported data; limited to one industrial cluster and RTO collaboration model
4.	Sustainable Development towards Openness SME Innovation: Taking Advantage of Intellectual Capital, Sustainable Initiatives, and Open Innovation (Phonthanukitithaworn et al., 2023)	Structural Equation Modeling (SEM)	Intellectual capital, open innovation, sustainability initiatives	Intellectual capital fosters open sustainability innovation in SMEs	Context limited to Thai SMEs; may not generalize globally
5.	Formal and informal financing decisions of small businesses (Nguyen & Canh, 2021)	Empirical test on Vietnamese SMEs	Entrepreneur, firm-level, and institutional factors influencing financing decisions	All three dimensions significantly influence financing choices	Context limited to Vietnamese SMEs; lacks longitudinal data
6.	Visualisation of global research trends and future research directions of digital marketing in small and medium enterprises	Bibliometric analysis, performance analysis, VOSviewer,	Publications, authors, institutions, countries, keywords,	Five thematic clusters; most productive year 2021; top journals and	Limited to Scopus data; bibliometric scope only; lacks qualitative analysis

No.	Title and authors	Methods	Variables	Findings	Limitation
	using bibliometric analysis (Amiri et al., 2023)	thematic clustering	citations, collaborations	institutions identified	
7.	Utilisation of Natural Resources as a Source of Inspiration and Innovation in SME Development (Ausat et al., 2023)	Qualitative: observation, note-taking, data reduction, visualization, inference	Natural resource utilisation, SME development, product competitiveness	Natural resource utilisation boosts SME value, competitiveness, job creation, and economic benefits	Relies on secondary data; lacks primary field research
8.	The Importance Of SMEs On World Economies (Bayraktar & Algan, 2019)	Literature review and data analysis	SME size, employment, innovation, GDP	SMEs drive employment, economic growth, innovation, social cohesion	Limited focus on sectoral differences
9.	The Role of SMEs in Local Economic Improvement and Labor Absorption in Indonesia (Kurniadi & Wishnu Wardana, 2024)	Literature review and analysis	Access to capital, digitalization, policy, education	MSMEs contribute 60% GDP, employ 97% workforce	Limited primary data, reliance on secondary sources
10.	Social CRM in SMEs: A systematic literature review (Yasiukovich & Haddara, 2021)	Systematic literature review	Social CRM adoption phases, SMEs	Identified adoption trends across CRM life-cycle	Limited to 22 articles, dated till 2020
11.	The Influence of Digitalization on Economic Growth by Mediation of Increasing the Productivity of MSME in the Culinary Field in Purwakarta Regency (Imroatussolehah et al., 2024)	Quantitative; questionnaire; SmartPLS 3.0	Digitalization, MSME productivity, economic growth	Digitalization mediates MSME productivity's impact on economic growth	Sample limited to culinary MSMEs only
12.	Recent evidence of the development of micro, small and medium enterprises in Indonesia (Tambunan, 2019)	Quantitative descriptive; PLS-SEM analysis	Financial literacy; SME business performance	Financial literacy positively affects SME performance	Limited to Sukun District; cross-sectional data
13.	Assistance For Cihanjawar Village UMKM Products Through Business Legality And Packaging In 2023 (Parmalasari & Purwani, 2023)	Participatory Action Research (PAR)	Business legality, product packaging, UMKM knowledge	Increased UMKM knowledge on packaging and business legality	Limited to one village, short-term intervention
14.	A review of global challenges and survival strategies of small and medium enterprises (SMEs) (Gamage et al., 2020)	Literature review of 110 papers and institutional reports	Global challenges, survival strategies, economic globalization factors	Identified key global challenges and SME survival strategies	Lack of primary data; focuses on published literature only
15.	Preserving Heritage of Humanity: A Systematic Study of the Pandemic Impacts and	Systematic literature review; interviews using Most	SME strategies, revenue, entrepreneurial qualities,	Revenue dropped 70%; strategies: retrenchment, innovation,	Limited sample size; focus on batik SMEs; pandemic period only

No.	Title and authors	Methods	Variables	Findings	Limitation
	Countermeasures of the SMEs (Yunus et al., 2023)	Significant Change technique	pandemic impact	perseverance, temporary exit	
16.	Success factors of SMEs: The case of Indonesia (Mariyudi, 2019)	Survey questionnaire, SEM analysis	Micro-environment, innovativeness, business growth, geographical clusters	Micro-environment and clusters impact innovativeness and growth	Limited to survey data, lacks qualitative insights
17.	The Development of Small-Medium Enterprises (SMEs) and the Role of Digital Ecosystems During the COVID-19 Pandemic (Hermawan & Nugraha, 2021)	Literature review and cluster analysis	SME resilience, digital economy, technology adoption	IT crucial for SME resilience; clusters impact recovery strategies	Limited primary data; focuses on literature only
18.	Analysis of Determining Leading Sectors in West Java Province in Facing the Global Market (Ahman et al., 2024)	Klassen Typology, LQ, Shift Share	Economic sectors, regional data (2020-2022)	Leading sectors identified; shift from agriculture to industry and services	Data limited to 2020-2022; no primary data collected
19.	Structural Transformation of the West Java Economy and Its Agriculture (Sulistyowati et al., 2020)	Quantitative descriptive using secondary GDP data (2013–2018)	Agricultural sector growth, national GDP, subsectors	Positive influence from national GDP; slow growth; limited specialization	Relies on secondary data; no primary field validation
20.	Maqasid Sharia Analysis of The Welfare Level of Muslim's Ceramic Craft in Plered Purwakarta (Sunjoto et al., 2023)	Quantitative descriptive analysis, Likert scale	Welfare level, Maqaşid Syari'ah indicators	Majority moderate welfare; highest in asset maintenance	Limited to one district; no qualitative data

Source: Research Data (2025)

This diversity strengthens the validity of insights while showcasing different dimensions of SME development. Notably, findings suggest that adaptability, collaboration, and intellectual capital significantly enhance SME competitiveness and innovation, though these benefits are often context-specific.

Despite the richness of the literature, several limitations are consistently identified. Many studies rely on self-reported or secondary data and are confined to specific regions or sectors, limiting generalizability. Furthermore, while global and national perspectives are well-documented, there is a lack of localized, district-level studies—especially in regions like Purwakarta. Some of those papers (Imroatussolehah et al., 2024; Sunjoto et al., 2023) offer direct insights into the local context, underscoring the novelty and significance of focusing on Purwakarta SMEs. These gaps highlight the need for more contextualized, holistic approaches that consider local governance, infrastructure, and cultural dynamics. Thus, this paper aims to fill that gap by providing a focused review of strategies and challenges unique to SMEs in Purwakarta, supported by text mining and bibliometric tools.

This study aims to delve deeper into these dynamics, identifying strategies that SMEs in Purwakarta employ to navigate their challenges and analyzing factors that influence their

sustainability and success. The findings aim to provide actionable insights for policymakers, business owners, and stakeholders invested in the growth of the SME sector in this region.

2. RESEARCH METHODOLOGY
2.1 Methodology

This study employs a comprehensive literature review (Abdulla, 2018; Carrera-Rivera et al., 2022; Kraus et al., 2023) with bibliometric analysis to investigate the strategies and challenges faced by Small and Medium Enterprises (SMEs) in Purwakarta, West Java, Indonesia. To enhance the depth of analysis, bibliometric tools, including Publish or Perish (Amutuhaire, 2022; Fahrudin, 2023; Kurniati et al., 2022) and VOSviewer (Arruda et al., 2022; Bukar et al., 2023; Kirby, 2023), are utilized. PoP is employed to identify trends and patterns in the publication of research related to SMEs. By extracting data from academic databases, this tool provides insights into the frequency of publications, citation metrics, and the evolution of research themes over time. This visualization software maps the relationships between key concepts in SME research. VOSviewer identifies clusters of interrelated topics, emerging trends, and potential research gaps, offering a nuanced understanding of how various factors interact in the context of SMEs. To clarify the procedures followed in this research, the flowchart below outlines each step taken in the methodological process
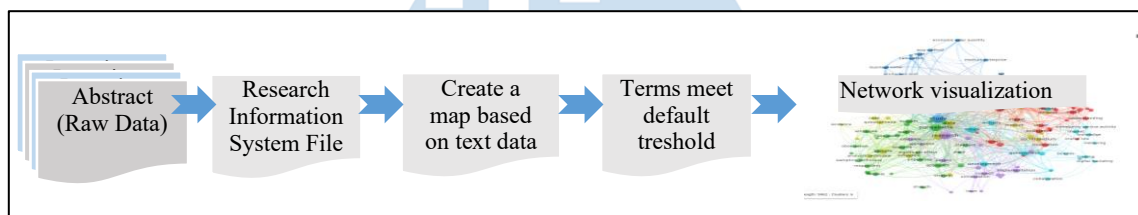
Figure 1. Text Data Processing
Source: Research Data (2025)

The flowchart above illustrates the sequential stages undertaken in the bibliometric analysis process. The procedure begins with the processing of text data, which is then converted into a Research Information System (RIS) file format compatible with the software. This file serves as the foundation for mapping the bibliographic data. Next, a term co-occurrence map is generated based on the extracted text data. The software applies a default threshold to filter terms, ensuring only the most relevant and frequently occurring concepts are included. Finally, the network visualization is produced, allowing for the identification of thematic clusters, term interconnections, and research gaps in the literature on SMEs. This systematic approach enhances the clarity and depth of the analysis.

2.2 Data Sources and Analysis

The study relies on peer-reviewed journal articles, conference proceedings, and government reports relevant to SME development in Purwakarta, West Java, Indonesia. This particular emphasis is placed on research focusing on West Java and Purwakarta to ensure region-specific insights. Bibliometric data is drawn from reputable academic databases: Scopus, Web of Science, and Google Scholar. The keywords used in this research were "SMEs" and "Purwakarta," focusing on publications from 2019 to 2024. The inclusion criteria for this research were as follows: the article focuses on SMEs in Purwakarta, Indonesia, specifically covering the period between 2019 and 2024. It includes studies available in PDF format that are accessible for review. The research discussed in these articles is relevant to the subject of

SMEs in Purwakarta within the specified timeframe, offering insights into the challenges and strategies these businesses face in the region.

The steps taken for data analysis began with entering all articles that met the criteria into a RIS file for input into VOSviewer. In the VOSviewer menu, a map was created based on text data or RIS data. The fields used for the analysis were the title and abstract of the articles, with binary counting applied. To determine relevance, the minimum number of occurrences for a term was set to two, resulting in 942 terms, with 152 terms meeting the threshold. For each of the selected terms, a relevance score was calculated, and all the selected terms were included in the analysis, with a total of 152 terms chosen.

3. RESULT AND DISCUSSION

This research resulted in 35 pieces of literature related to SMEs in Purwakarta. From these, 28 were selected based on the availability of accessible PDF files for key term analysis. The dataset reveals six distinct clusters, each representing a thematic grouping based on the co-occurrence of terms and their link strengths in the context of SME-related research. These clusters provide a structured understanding of the interconnected topics, methodologies, and focus areas within the literature. The clusters highlight various dimensions of SME development, ranging from their economic contributions and operational challenges to community engagement and policy implementation. Below is a detailed analysis of each cluster, emphasizing the dominant themes and their implications for SME research.

The figure below provides a clear view of the thematic landscape of SME-related research in Purwakarta. By using VOSviewer to analyze the text co-occurrence from literatures obtained, this visualization identify interconnections of the topic in the existing literature. The terms are clustered into six distinct groups, each associated with specific areas of interest, which reflect the academic focus or the practical challenges faced by SMEs in the region. The figure shows a network visualization created using VOSviewer, representing the relationships between various topics found in the literature related to small and medium-sized enterprises (SMEs) in Purwakarta. The figure displays the interconnections between different keywords based on their co-occurrence in scholarly works. The nodes represent individual keywords, while the edges indicate the strength of the relationship between them, with thicker lines signifying stronger associations. The size of each node correlates with its frequency of occurrence, and the proximity between nodes indicates how closely related the topics are. The figure shows six (red, blue, green, purple, orange, and teal) distinct clusters, each representing a specific thematic area of SME research. The color coding of the clusters suggests that there are multiple interconnected areas such as economic growth, business operations, government policy, and community engagement The red, blue, green, purple, orange, and teal clusters highlights key terms related.

The wide spread of terms across different clusters suggests a broad interest in various aspects of SMEs, indicates potential research gaps, particularly in terms of integrating findings across clusters for more holistic approaches. Topics such as "digital marketing" and "e-commerce" also indicate growing interest in online business strategies in existing literature.
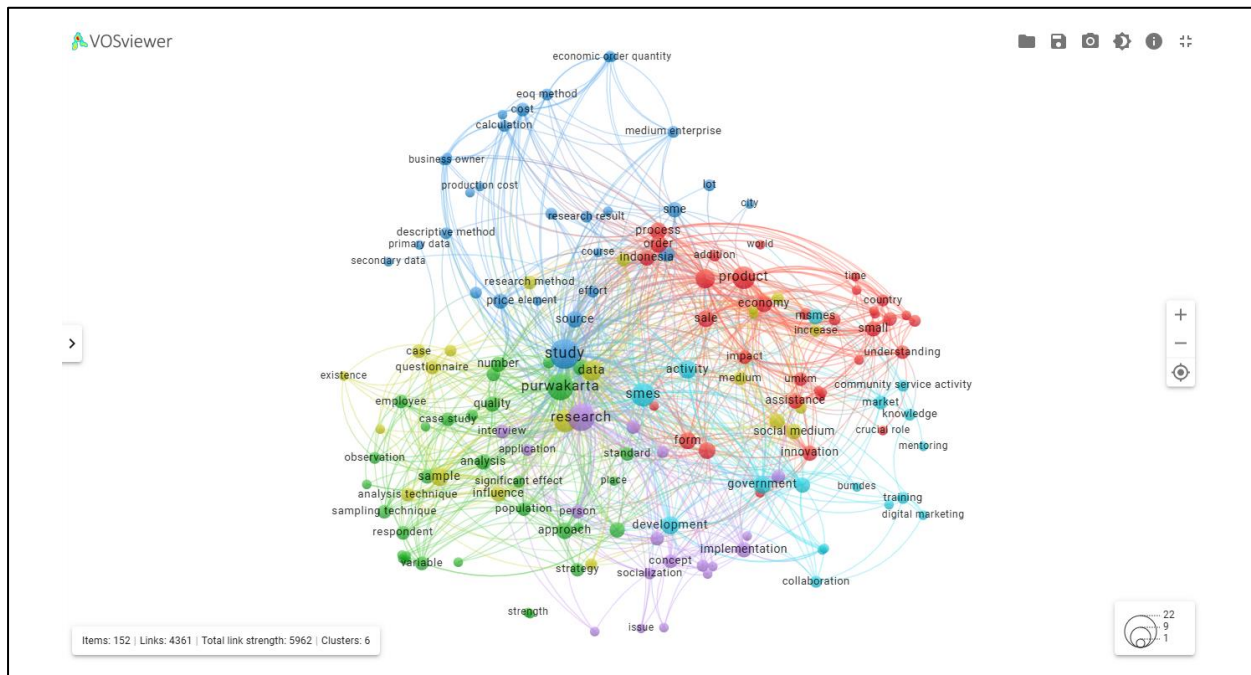
Figure 2. Interconnections of SME Topics in the Literature
Source: Research Data (2024)

The table below provides a detailed breakdown of the dominant topics identified in the VOSviewer network analysis of SMEs in Purwakarta. These topics have been categorized into six distinct clusters, each representing a different thematic focus in the research literature. The analysis of these clusters reveals the main areas of interest and provides insights into the current trends and research gaps in SME development, economic impact, and operational practices.

Table 2. Dominant Topics in SME Research – Purwakarta

Cluster	Dominant Keywords	Main Focus Area
Red	Product, Sale, Economy, Growth	Economic impact and business performance of SMEs
Blue	Research, Study, Data, Method	Research methodologies, data collection, and empirical studies
Green	Development, Socialization, Government	Policy, local development, and community-based SME initiatives
Purple	Innovation, Training, Technology	Role of innovation and technology in enhancing SME success
Orange	Consumer, Perception, Market	Customer behavior, market dynamics, and consumer perceptions
Teal	Cost, Survey, Questionnaire	Practical business operations, cost analysis, and market surveys

Source: Research Data (2024)

The VOSviewer visualization reveals that SME research in Purwakarta spans a wide range of topics, from economic performance and research methods to policy, innovation, and market analysis. The diverse clusters indicate a well-rounded body of literature and highlight potential areas for future research, particularly in integrating these themes for more holistic SME development strategies. Red Cluster (economic impact) focuses on the economic and business performance of SMEs. Terms such as "product," "sale," "economy," and "growth" emphasize the financial aspects of SMEs and their role in the broader economy. This suggests

a significant body of research investigating how SMEs contribute to economic growth, profitability, and market expansion. It indicates a well-established area of study with a strong focus on financial performance metrics. According to Gherghina et al. (2020), Dwyer (2023), and Rotar et al. (2019) SMEs play a crucial role in economic development by contributing significantly to GDP and employment. Their findings underscore that SMEs serve as the backbone of emerging economies, driving innovation, productivity, and inclusive growth.

Blue Cluster (research methodology) represents research methodologies, including terms like "research," "study," "data," and "method." This cluster suggests that much of the research on SMEs in Purwakarta involves empirical analysis, data collection techniques, and the application of various research methods. This cluster as mentioned by Dabić et al. (2020) emphasizes the academic rigor in SME research and highlights the importance of systematic studies to understand business dynamics.

Green Cluster (policy and development) consist of terms "development," "socialization," and "government" indicate a focus on policy-making and community development. This cluster points to the role of governance, social policies, and development programs in fostering SME growth. It suggests that there is an increasing interest in understanding how government initiatives support the sustainable growth of SMEs.

Purple Cluster (innovation and technology) underscores the importance of innovation, training, and technology in the SME sector. With terms "innovation" and "technology," this cluster highlights the role of modern advancements in business practices. Research in this area likely explores how adopting new technologies and fostering innovation can improve productivity, efficiency, and competitiveness in SMEs. The cluster's emphasis on "technology" and "implementation" aligns with the findings of Chen & Lai (2022), who argue that digital transformation is crucial for businesses in the modern era. SMEs that adopt digital tools and technologies according to Pfister & Lehmann (2024) tend to achieve higher efficiency and profitability.

Orange Cluster (market dynamics) featuring terms "consumer," "perception," and "market," suggests an emphasis on understanding consumer behavior and market trends. This area of research is crucial for SMEs to tailor their products and services to consumer needs. The presence of terms "consumer" and "market" indicates a focus on market research and consumer satisfaction. Cosenz & Bivona (2021) emphasize that consumer behavior analysis is important for SMEs businesses to tailor their strategies to meet market demands. Keywords such as "consumer" and "perception" suggest that SMEs in Purwakarta and similar contexts must focus on understanding customer preferences and decision-making processes.

Lastly, Teal Cluster (business operations) focuses on practical business operations, including cost analysis, surveys, and questionnaires. Terms "cost" and "survey" suggest a research interest in operational efficiency and feedback mechanisms for SMEs. This cluster likely investigates how SMEs assess their performance and gather insights to improve their business strategies. As mentioned by Prasanna et al. (2019) SMEs need to focus on survival improvement in the global market to effectively face global competition. The findings of this study align with Nguyen et al. (2023), who highlight that SMEs are predominantly concentrated in labor-intensive industries. This is attributed to the low entry barriers, relatively low fixed production costs, and SMEs focus on producing price-taker commodities

The VOSviewer network visualization depicts a set of terms that are connected through various links, with "problem" being the central node in the analysis. Figure below provides insight into the relationship between the term "problem" and other key concepts across several clusters.
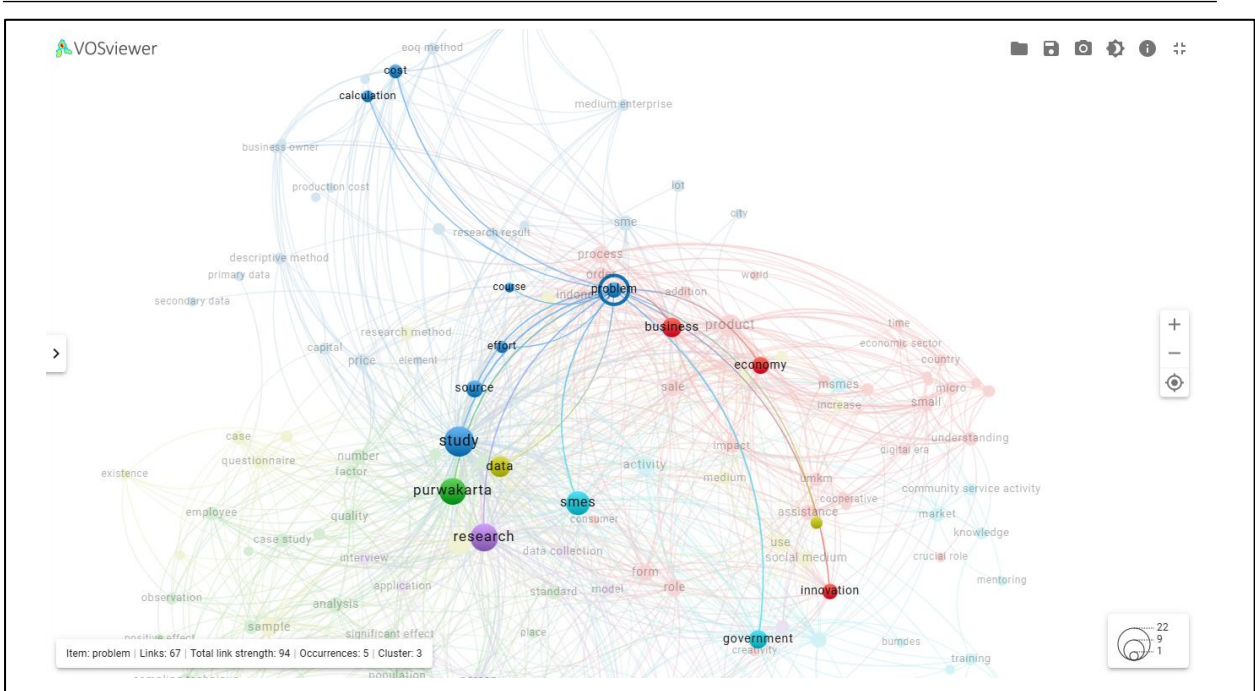
Figure 3. Terms Related to "Problem" in SMEs Research in Purwakarta
Source: Research Data (2024)

The term Purwakarta prominently appears with a weight of 3, emphasizing that the challenges faced by SMEs in Purwakarta are particularly relevant. This suggests that the focus of the research is on understanding the specific local issues faced by businesses in Purwakarta, which may differ from the challenges encountered in other cities. These unique challenges could stem from Purwakarta' economic environment, infrastructure limitations, or access to resources, thus making Purwakarta an area of interest for targeted studies and interventions for SME development. Previous studies have indicated that local economic contexts significantly influence the performance and resilience of SMEs (Gamage et al., 2020; Parmalasari & Purwani, 2023; Sulistyowati et al., 2020; Sunjoto et al., 2023).

The term "government", also with a weight of 3, is strongly connected to the concept of "problem," indicating the significant role the government plays in addressing the challenges faced by SMEs. This connection highlights the need for effective policies, regulations, and support programs from the government that could help mitigate issues such as limited access to financing, technology adoption challenges, or other barriers to business growth. Government intervention is critical in fostering a conducive environment for SMEs to thrive by creating policies that support innovation, entrepreneurship, and sustainable development. Research by previous scholars (Alkahtani et al., 2020; Park et al., 2020) highlights that government support, such as access to financing, training programs, and regulatory reforms, is essential for SME growth and sustainability.

Terms such as "innovation" and "social media", both with a weight of 2, suggest that SMEs are actively seeking innovative solutions to overcome their challenges. These solutions include adopting new technologies to improve operational efficiency and leveraging digital marketing platforms to enhance visibility, reach new customers, and stay competitive in an increasingly digital marketplace. Several previous scholars (Subagja et al., 2022; Tarambiwa Mataruka et al., 2023) also highlighted the importance of social media utilization and innovation in enhancing SME performance. The growing focus on innovation indicates that SMEs are exploring ways to modernize and adapt to new market demands and trends.

The "problem" node is highly connected to several other terms, including "Purwakarta" (3), "research" (3), "study" (4), "service" (2), "smes" (3), "source" (3), and "economy" (2). These connections suggest that the primary challenges SMEs face in Purwakarta are interlinked with broader themes such as economic development, access to resources, and the need for specialized research and study to address these problems. Research has shown that local economic conditions significantly affect the performance of SMEs (Shaikh & Khoso, 2019; Ullah, 2020). The link to "smes" and "business" (both with a weight of 2) highlights the specific business challenges related to production, costs, and market dynamics that need to be explored in more depth. The presence of terms "qualitative approach" (1), "survey" (1), and "interview" (1) signals that the research on these problems often involves qualitative methods for data collection, suggests that in-depth qualitative analyses are being used to better understand the multifaceted challenges faced by SMEs in Purwakarta. Researchers relying on surveys and interviews to gather rich, context-specific insights from business owners, government representatives, and other stakeholders involved in the SME ecosystem.
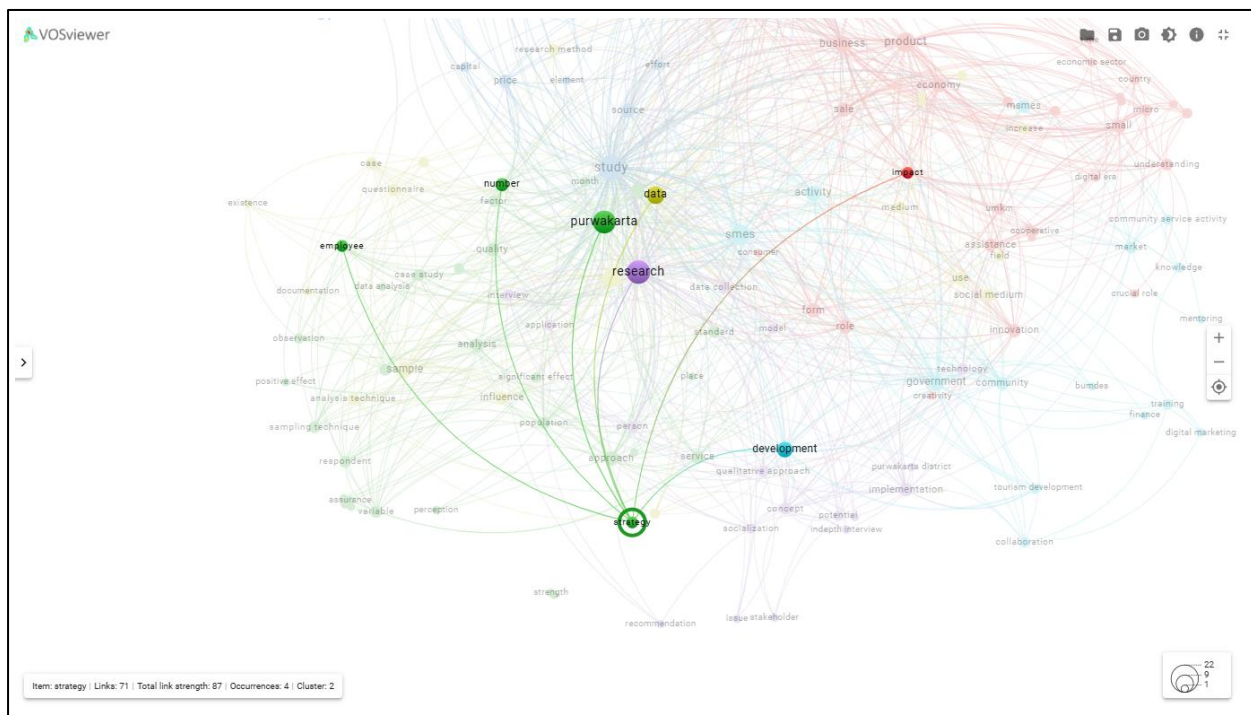
Figure 4. Network Visualization of "Strategy" in SMEs Research in Purwakarta
Source: Research Data (2024)

Another network in above figure, illustrates the interconnected of various factors influencing the development of SMEs in Purwakarta. The term "strategy" is highly connected to a range of concepts, including "impact," "study," "technology," and "development," reflecting its central role in guiding SMEs through the challenges they face. It appears that SMEs are focusing on strategic actions, such as leveraging technology and innovation, to grow and overcome obstacles like financing and market reach.

The term "strategy" in this network visualization plays a central role and is highly connected to several other key terms, highlighting its importance in SME development research in Purwakarta. The term "strategy" is linked to 71 other terms with a total link strength of 87, suggesting that it is a significant concept in the study of SME challenges and growth in

Purwakarta. The term "strategy" is associated with terms "development", "research", and "purwakarta" with strong connections, indicating that strategic approaches are being explored as part of the research on SME development in Purwakarta. Studies by Sastradinata et al. (2024) and Nugroho et al. (2024) have emphasized the importance of local context in developing effective strategies tailored to the specific challenges faced by SMEs in Purwakarta. Additionally, research by Ullah (2020) and Chandra et al. (2021) highlighted the role of strategic planning in fostering sustainable growth in regional SMEs, highlighting the need for region-specific approaches.

The term "strategy" has a connection weight of 3 with "Purwakarta" and "research", underscoring that strategies are being developed or analyzed within the context of Purwakarta and its business environment. The term "strategy" is linked to various elements related to SME management and growth, such as "data", "employee", "impact", "technology", and "innovation". These links suggest that the strategies under consideration may include the adoption of new technologies, understanding the impact of different factors on SME performance, and fostering innovation within small and medium enterprises (SMEs). The importance of this strategy has also been mentioned by several researchers (Prasetiyani & Vikaliana, 2020; Trena et al., 2023). The connection between "strategy" and terms "threat", "strength", and "understanding" indicates that the research is focusing on how strategies can foster growth. The strong connection with "implementation" shows that there is an emphasis on putting these strategies into action. The strong link between terms "strategy," "development," "research," and "Purwakarta" emphasizes the importance of region-tailored (Purwakarta) strategies for the growth and sustainability of small businesses. The use of qualitative research methods suggests that a deeper, more contextual analysis is being undertaken to address these challenges and propose actionable solutions.

4. CONCLUSION

The literatures on SMEs in Purwakarta demonstrates a broad exploration of various factors influencing SME development. Based on the analysis of the SME research literature in Purwakarta, the following conclusions can be drawn.

- The economic impact of SMEs is a dominant theme, particularly related to business performance, growth, and their role in the local economy. Research highlights the importance of SMEs as engines of economic growth, emphasizing their contributions to GDP and employment. This area of research is well-established, with a strong focus on financial performance and market expansion

- The SME research in Purwakarta shows a wide range of interconnected topics, including economic performance, research methodologies, policy development, innovation, market dynamics, and business operations. The six distinct clusters identified (economic impact, research methodology, policy development, innovation and technology, market dynamics, and business operations) reflect the nature of SME challenges and opportunities in Purwakarta.

- SMEs in Purwakarta play a critical role in economic development, contributing significantly to employment. To maximize their potential, SMEs in Purwakarta must implement strategies that enhance their financial performance and improve market expansion.

- The unique characteristics of Purwakarta in term of local economy, infrastructure limitations, or access to resources require SMEs to develop strategies that are specifically tailored to these conditions. A one-size-fits-all approach may not work,

and strategies must look for local market conditions, supply chain constraints, and community engagement

5. LIMITATION

The research is limited by the sample size of SMEs in Purwakarta, which may not fully represent the diversity of businesses in the west Java region. The study's findings may not be generalizable to all SMEs in west Java or in Indonesia, especially those in other regions with different economic, cultural, or regulatory conditions.

Future research is recommended to expand the scope beyond Purwakarta by incorporating primary data collection and comparative analysis across multiple regions. This would provide a more comprehensive understanding of the diverse challenges and strategies of SMEs in varying economic, cultural, and regulatory contexts, thereby enhancing the generalizability and practical relevance of the findings

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REVITALIZATION OF SURABAYA'S OLD PRECINCT: CHALLENGE AND STRATEGY OF GROWTH

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Abstract- The revitalization of Surabaya's old precinct holds strong potential to enhance the city's tourism appeal and stimulate local economic development. This heritage-rich area has historical and cultural value, making it a strategic destination for both domestic and international tourists. However, several challenges hinder its development, including a lack of interactive attractions, insufficient public facilities such as cafés, rest areas, and toilets, as well as limited visitor engagement and short tourist stays. This study employs a qualitative descriptive research design, using triangulated data from in-depth interviews with government officials, heritage community members, and tourism practitioners, along with field observations and document analysis. The research aims to identify key strategies, opportunities, and constraints in revitalizing the precinct. Findings highlight the critical role of multi-stakeholder collaboration in revitalization efforts, where the synergy between the government, local communities, and the private sector is essential to success. The study also shows that improved infrastructure, enhanced public awareness, and creative tourism programming are necessary to sustain heritage tourism in the area. This study contributes to the discourse on sustainable urban heritage management and offers practical recommendations to policymakers seeking to balance conservation with tourism-driven economic growth in historic urban districts.

Keywords: Heritage Tourism; Revitalization; Old Precinct; Economic Growth; Surabaya

1. INTRODUCTION
1.1 Research Background

The main focus of urban tourist growth in many nations is now the revival of old regions. In Indonesia, cities such as Semarang and Jakarta have implemented large-scale revitalization programs in their old precincts, such as Kota Lama Semarang and Kota Tua Jakarta. These efforts, backed by both government and public-private partnerships, have demonstrated varying degrees of success. For instance, revitalization in Kota Lama Semarang has increased

tourism arrivals by 18% annually between 2018 and 2022 (Dewi et al., 2020), while Jakarta's old town saw a resurgence of micro-businesses and increased pedestrian accessibility (Prabowo & Salaj, 2020). Despite these outcomes, challenges related to sustainability, local engagement, and spatial justice continue to emerge (Handaruni et al., 2021).

Surabaya's Old Precinct, also known as Kota Lama Surabaya, is an area rich in architectural heritage and colonial-era urban form. However, it has suffered from decades of neglect and functional decline. Unlike Jakarta and Semarang, academic attention to Surabaya's revitalization remains limited. Previous studies mostly focus on physical infrastructure or administrative planning, without exploring the broader socio-economic and ecological dimensions of the revitalization process or the stakeholder dynamics involved (Sihite & Pakpahan, 2023; Trifena & Dewi, 2021).

Numerous international studies show that well-managed revitalization can lead to substantial financial and social benefits, including increased tourism revenue, business growth, and improved community cohesion (Jelinčić & Mansfeld, 2019; Vázquez-Torres et al., 2022; Wu et al., 2022). Conversely, poorly planned revitalization may trigger gentrification, marginalization of local communities, and the erosion of intangible cultural values (Lak et al., 2020; Outón, 2020). Despite such concerns, research on these trade-offs in the Indonesian context, particularly in Surabaya, is still sparse.

However, there remains a lack of integrative studies that evaluate the revitalization process of heritage areas through a multi-stakeholder lens, particularly in the context of Surabaya's Old Precinct. There is also insufficient attention to how inclusivity, sustainability, and local community involvement intersect in shaping tourism-based regeneration. Therefore, this study seeks to address that gap by assessing the effectiveness and inclusivity of Surabaya's Old Precinct revitalization strategy, with attention to socio-cultural, economic, and environmental dimensions.

This study intends to give a whole picture of Surabaya's Old Precinct's renovation project in order to boost tourism visits. More precisely, this study will look at several important elements of the revival, namely: Identification of the tactics used in Surabaya's Old Precinct as well as the supportive and discouraging elements. This study also explores the potential outcomes of the revitalization program, including increased tourist visits and local economic development, while critically assessing the challenges in maintaining a balance between modernization and cultural preservation. Furthermore, it examines the environmental, social, and economic impacts of the revitalization of Surabaya's Old Precinct to provide a comprehensive understanding of its broader implications.

This study is important since it helps us to realize how the rejuvenation of Surabaya's Old Precinct may inspire the creation of cultural-based tourism in other Indonesian Precincts. Poorly handled revitalization can result in the loss of cultural identity and local community involvement, as several studies have demonstrated (Lak et al., 2020). Accordingly, this study aims to evaluate the extent to which inclusive and sustainable principles have been applied in the revitalization process and to identify practical strategies that can strengthen long-term heritage tourism development. Furthermore, this study can be a guide for the government and interested parties in developing more sensible rules for the administration of historical tourist destinations. With this study, it is envisaged that ideal techniques may be discovered to increase heritage tourism in Surabaya without compromising current historical values (Jagrati et al., 2020).

1.2 Research Objective

This study aims to critically examine the revitalization of Surabaya's Old Precinct, a heritage area undergoing physical and functional transformation through government-led interventions. Once neglected due to rapid modernization and urban sprawl, the area is now positioned as a potential hub for heritage tourism and cultural-based economic activities. While some progress has been made, particularly in infrastructure improvements and increasing visitor flows, significant challenges persist. These include limited community involvement, the risk of gentrification, weak institutional coordination, and questions surrounding the long-term sustainability of revitalization outcomes. To address these issues, this research focuses on identifying the strategies applied in the revitalization process, assessing the perceived impacts on local communities and urban tourism, and evaluating the inclusivity and effectiveness of multi-stakeholder collaboration. The study tries to explore how government institutions, heritage communities, and tourism practitioners interact within the revitalization framework. Ultimately, this study intends to generate practical insights for policymakers and contribute to theoretical discussions on sustainable urban heritage management, particularly in the Indonesian context where academic attention to multi-actor revitalization remains limited.

1.3 Literature Review

1.3.1. Concept of Revitalization

Revitalization has been widely studied through various perspectives. Previous research generally classifies revitalization into physical, social, economic, and cultural dimensions (Handaruni et al., 2021; Prabowo & Salaj, 2020). Physical revitalization often emphasizes infrastructure and restoration of buildings, while socio-economic revitalization tends to focus on improving livelihoods and increasing community participation (Outón, 2020). Wu et al. (2022), using a case-comparative method in East Asia, argue that successful revitalization requires multi-stakeholder governance and alignment with tourism-based development goals. Meanwhile, Lak et al. (2020) caution that such projects may lead to gentrification and exclude local communities.

These studies indicate a tension between modernization and cultural conservation. While many promote revitalization as a catalyst for growth, others highlight risks such as commodification and loss of authenticity. However, most of these works use either case study or qualitative approaches centered in non-Indonesian contexts, with limited exploration of stakeholder dynamics in Indonesian heritage areas.

1.3.2. Studies on Old Precincts

In Indonesia, prior studies have focused on Semarang and Jakarta (Dewi et al., 2020; Handaruni et al., 2021), highlighting policy implementation and spatial transformation. Trifena & Dewi (2021) employed observational and interview-based methods to assess socio-economic shifts post-revitalization in Semarang, while Aminuddin et al. (2023) examined youth behavior after physical renewal of Semarang's old town. However, these studies do not fully explore the interplay between government, community, and private sector in sustaining revitalization. Hence, this study fills a gap by using a qualitative descriptive approach focusing on multi-stakeholder perspectives in Surabaya's Old Precinct, aiming to uncover not only outcomes but also governance processes and community roles in heritage revitalization.

1.3.3. Surabaya in the Context of Revitalization

Surabaya has received relatively limited scholarly attention in terms of heritage revitalization compared to other Indonesian cities. Existing studies primarily examine

government programs or physical restoration efforts. For instance, Sihite & Pakpahan (2023) explored market revitalization in Surabaya using a mixed-method approach focusing on economic indicators, while Aminuddin et al. (2023) focused on post-revitalization social behavior among urban youth in Semarang, drawing indirect parallels to Surabaya.

More locally grounded studies, such as those by Trifena & Dewi (2021), emphasize the socio-spatial dynamics in Semarang's heritage areas, yet similar frameworks have not been widely applied to Surabaya. The dominant focus in Surabaya-based studies remains on infrastructure development and regulatory implementation, with less attention paid to the integration of community perspectives and the multi-dimensional impact of revitalization.

There is also a lack of comparative or longitudinal studies analyzing how different stakeholder groups, such as local authorities, community organizations, and tourism actors, perceive and contribute to the revitalization process. Furthermore, no research has thoroughly investigated how these revitalization efforts influence both cultural sustainability and economic resilience in Surabaya's Old Precinct. Thus, this study offers a novel contribution by using a triangulated qualitative approach to explore multi-actor dynamics and sustainable strategies in Surabaya's heritage regeneration efforts.

2. RESEARCH METHODOLOGY

2.1 Data Sources

This study applies a qualitative descriptive approach to explore the revitalization process of Surabaya's Old Precinct. The data consists of both primary and secondary sources. Primary data were obtained through in-depth, semi-structured interviews with three key informants representing different stakeholder groups. These included: (1) the Head of the Surabaya City Tourism Office, representing local government; (2) a representative from Surabaya Heritage Community, reflecting cultural preservation perspectives; and (3) a local heritage tourism activist, representing practitioners in the field.

The interviews were conducted face-to-face over the course of three separate sessions, each lasting approximately 45–60 minutes, and were guided by open-ended questions to explore experiences, perspectives, and challenges in the revitalization process. All interviews were audio-recorded with consent and transcribed for analysis. Secondary data were gathered through a literature review of more than 20 sources, including peer-reviewed journal articles, government reports, and academic books relevant to revitalization, heritage tourism, and historic urban precincts, including the work of (Muryani, 2019).

2.2 Data Collection

This research employed three primary qualitative data collection methods: in-depth interviews, field observations, and document analysis. These methods were selected to obtain a comprehensive understanding of the revitalization process and ensure research credibility through triangulation, as recommended in recent qualitative research methodologies (Nowell et al., 2017).

First, semi-structured interviews were conducted with three key informants representing the main stakeholder groups involved in the revitalization of Surabaya's Old Precinct: (1) the Head of the Surabaya City Tourism Office (government), (2) a representative from the Surabaya Heritage Community (civil society), and (3) a heritage tourism practitioner (private actor). Interviews were conducted between June and August 2023, each lasting 45 to 60 minutes, and guided by open-ended questions. All sessions were audio-recorded with informed consent and transcribed for analysis (Ivey, 2023). Second, non-participant observations were carried out in key areas of the Old Precinct, such as Jalan Gula, Jalan Karet, House of

Sampoerna, and Jembatan Merah, focusing on infrastructure quality, visitor experience, and the interaction between tourists and local residents. Observations were conducted on both weekdays and weekends to capture variations in tourist activity (Oladeji, 2022). Third, document analysis included the review of official revitalization reports, government planning documents, and academic publications related to heritage tourism and urban regeneration. These materials were sourced from municipal archives, the Ministry of Tourism, and scholarly databases. This method enriched the contextual understanding of policy implementation and stakeholder narratives (Balane et al., 2020).

To ensure data validity, this study applied methodological triangulation, comparing findings across the three data sources. For example, claims about improved public amenities were validated through on-site verification and cross-checked with relevant planning documents. This approach strengthens the trustworthiness and confirmability of the research (Megheirkouni & Moir, 2023).

2.3 Data Analysis

The analysis of qualitative data in this study followed the interactive model developed by Mezmir (2020), which emphasizes a cyclical and iterative approach to meaning-making. The process began with data condensation, where interview transcripts, observation notes, and supporting documents were carefully reviewed to identify relevant information in line with the research objectives. Redundant and irrelevant data were excluded, while essential statements were highlighted and categorized into preliminary codes. This step allowed the researcher to simplify large volumes of qualitative data while preserving their contextual richness.

Following condensation, the data were organized and displayed using thematic matrices and tables in Microsoft Excel to reveal emerging patterns and relationships between stakeholders, challenges, and revitalization outcomes. This visual representation of data facilitated a deeper understanding of the complex dynamics involved in the revitalization of Surabaya's Old Precinct, especially concerning how different actors perceive and influence the process.

The final stage involved drawing conclusions and verifying them through repeated comparison across data sources. Triangulation was used to enhance the credibility of findings by cross-checking information derived from interviews, field observations, and official documents. Although no computer-assisted qualitative data analysis software was used, the manual coding process, conducted systematically using Excel, ensured transparency, rigor, and traceability in the analytical process.

3. RESULT AND DISCUSSION
3.1 Rejuvenation of Surabaya's Old Precinct

The Surabaya City Government is working to revive Surabaya's Old Precinct in order to protect historical legacy and simultaneously improve tourism appeal. Based on the findings of the observation, revitalization is implemented via several primary stages: identification and mapping of the region, restoration of historical structures, construction of supporting infrastructure, and cooperation with the community and the business sector. The government works to match modern needs with the preservation of the local historical treasures. But problems in the execution of this revival effort now include limited public awareness, financial restrictions, and overlapping rules.

> *"We want the Old Precinct not only to be a symbol of history but also a center for sustainable cultural activities and creative economy," the Surabaya City Government Tourism Office chief said.*

3.2 Justification of Information on Old Precinct Revitalization

The results of the interview reveal that the two primary directions of the revitalization of the Old Precinct are the establishment of public amenities supporting heritage tourism and the actual restoration of historical buildings. While the infrastructure developed includes pedestrian paths, tourist information centers, and public areas that may be used by both the community and visitors, the restoration is executed with the historic character of the buildings.

> *"We continue to advocate that every development policy takes into account the aspect of historical preservation," the Surabaya Heritage management said. A progressive city is one that does not forget its roots.*

The revival of the Old Precinct directly affects visitor numbers, therefore influencing both domestic and foreign travel. Nonetheless, observations show that some factors still potentially impede the sustainability of this location as a top tourist destination, including the absence of public facilities and the low public awareness in preserving cleanliness.

3.3 Heritage Tourism in the Old Precinct

Old City Surabaya's heritage tourism has great potential to develop into a fresh commercial attraction. Observations suggest that the expansion of historical tourism can propel the creative economy—where MSME players such artists, chefs, and craftspeople can actively participate in the heritage tourist ecosystem. Still, there are flaws in the features of tourism attractions and promotion that can improve the attractiveness of the region.

> *"Heritage tourism can become one of Surabaya's main attractions, especially with the increasing public interest in destinations that have historical and cultural value," Surabaya's activists in heritage tourism said.*

According to interview data, the Old Precinct of Surabaya still requires creative presentation for heritage tourism. The idea presented has to be more than just a trip to historic sites; it also includes more participatory activities including theater performances, thematic walking tours, and storytelling.

> *"We try to package historical tourism in a more interesting way, such as storytelling, thematic walking tours, and theatrical performances in the Old Precinct area," the Surabaya Heritage Tourism Activists clarified further.*

3.4 Challenges in Revitalization

One of the most pressing challenges identified in the revitalization of Surabaya's Old Precinct is the lack of comprehensive tourism infrastructure that supports long-stay visitation. Field observations revealed that tourists often visit only to take photos in front of historic buildings and leave shortly after, due to the absence of supporting amenities such as rest areas, interactive attractions, and food stalls. As one informant noted,

> *"Many tourists come just to take photos in front of the historical building without any other activities that would make them stay longer."*

This indicates that revitalization efforts have so far prioritized physical restoration over experiential enhancement. In contrast to successful cases in Semarang or Penang, where interactive heritage tours, culinary hubs, and storytelling initiatives extend visitor engagement, Surabaya's Old Precinct remains underutilized in terms of cultural programming. The absence

of clean and accessible public toilets, minimal signage, and poor waste management further erode the overall tourist experience.

Although the government has initiated structural repairs, these efforts have not been matched with strategies to activate the space through community-based tourism or creative programming. This reflects a common gap in heritage-led regeneration, where urban aesthetics are improved without accompanying functional transformation (Outón, 2020; Wu et al., 2022).

To address these issues, we argue that revitalization must move beyond a conservation-driven model toward a visitor-centered and community-empowered approach. This includes activating unused spaces for performances, integrating digital interpretation tools, and involving local MSMEs to develop site-specific services. Without such a shift, revitalization will risk becoming symbolic rather than transformative.

3.5 Advantages of Revitalization

The revitalization of Surabaya's Old Precinct has generated several tangible and intangible benefits, both for the city and its residents. One of the most notable impacts is the emergence of a creative economy ecosystem, where local artisans, culinary entrepreneurs, and cultural performers begin to find a platform for their work. As noted by a heritage activist,

> *"Revitalization is not only the government's responsibility but also the community's. We actively inform locals about the need of conserving cultural legacy."*

This quote reflects a growing awareness and participation among local communities in reclaiming their cultural identity through tourism. The presence of micro, small, and medium enterprises (MSMEs) in restored areas offers new economic opportunities while simultaneously enhancing the authenticity of the visitor experience. Similar findings were reported by Jelinčić & Mansfeld (2019), who emphasized the role of local entrepreneurship as a pillar of sustainable heritage tourism.

However, while these benefits are visible, they are not yet systematized. Our field observations and interviews reveal that support for local businesses remains informal and sporadic. The absence of structured programs,such as incubation hubs, promotional campaigns, or tax incentives, limits the scalability of these community-driven initiatives. Moreover, although physical revitalization has improved building facades and pedestrian access, it has not yet fully translated into a vibrant, functional tourism space. This gap echoes the findings of Khorasgani & Eskandar (2024), who argue that revitalization without integrated economic planning risks superficial transformation.

Furthermore, the revitalization process has symbolic value in repositioning Surabaya as a city that respects its historical roots while embracing innovation. Cultural events held in the Old Precinct, such as heritage festivals or art installations, contribute to urban branding and place-making (Vázquez-Torres et al., 2022). Nonetheless, our data suggest that such initiatives are still occasional rather than embedded in long-term cultural policy. Without a coherent cultural calendar or dedicated governance body for heritage precinct management, the impact of these advantages may remain limited.

In addition, the revival of urban identity fosters collective memory and civic pride. Local residents reported a renewed sense of connection to their surroundings, particularly among youth who were previously disengaged. This finding aligns with Lak et al. (2020), who note that participatory revitalization models enhance social cohesion and spatial belonging. However, Surabaya's model still lacks mechanisms for sustained intergenerational engagement, such as youth-led storytelling projects or volunteer docent programs, which have

proven effective in cities like Yogyakarta and Seoul (Roosinda & Rachman, 2021; Wu et al., 2022).

We suggest that the advantages of revitalization can be deepened through structured policy support that targets capacity building, business incubation, and cultural programming. Government and private stakeholders should co-develop community partnership models to ensure equitable benefit-sharing, while academia can contribute through participatory research and monitoring frameworks. Only through such cross-sector collaboration can revitalization evolve from a physical beautification project into a transformative engine for cultural and economic renewal.

3.6 Strategy of Growth

Although the revitalization of Surabaya's Old Precinct has generated some initial momentum in cultural tourism development, its long-term success depends on the implementation of integrated and forward-looking growth strategies. One of the most pressing needs is the improvement of basic public infrastructure. Observations indicate a severe lack of accessible, clean public toilets, trash bins, seating areas, and informative signage throughout the heritage zone. As one informant from the Tourism Office emphasized,

> *"We must be careful in adapting old buildings to modern needs without damaging their historical value."*

This statement highlights a key dilemma—upgrading facilities while maintaining heritage authenticity. Such infrastructural challenges are not unique to Surabaya. Studies in other urban heritage contexts (e.g., Penang and Malacca) have shown that visitor comfort and convenience are critical to increasing tourist dwell time and spending (Puspitasari et al., 2024; Wu et al., 2022). However, Surabaya's revitalization strategy remains largely physical and architectural in nature, lacking robust planning for experiential and service-based enhancements. This is a missed opportunity, as tourism growth depends not only on restored structures but also on the depth of visitor engagement.

Beyond infrastructure, the strategic development of creative and immersive attractions is essential. Interviews with heritage tourism practitioners reveal a demand for programming that includes storytelling, guided walking tours, interactive exhibitions, and cultural performances, elements that are currently underdeveloped.

> *"We try to package historical tourism in a more interesting way, such as storytelling, thematic walking tours, and theatrical performances,"* said a heritage tourism activist.

These forms of engagement are supported in literature as catalysts for cultural learning and memory-making, which drive repeat visitation (Jelinčić & Mansfeld, 2019; Vázquez-Torres et al., 2022).

Importantly, growth must be inclusive. Our findings show limited participation from residents in tourism planning and management. The community's role is largely passive, with little capacity-building support or economic empowerment. This mirrors concerns raised in other studies, where top-down revitalization efforts risk excluding the very communities they intend to benefit (Lak et al., 2020; Outón, 2020). Strategic growth, therefore, should involve participatory planning forums, community tourism cooperatives, and training programs that equip locals to act as guides, hosts, or vendors within the precinct.

Additionally, digital transformation offers another pathway for growth. Smart tourism tools such as mobile applications, augmented reality heritage tours, and digital storytelling platforms can enhance visitor interaction while preserving physical assets. Cities like Seoul and Singapore have successfully implemented such innovations, balancing authenticity with

interactivity (Khorasgani & Eskandar, 2024)Surabaya has yet to explore these possibilities, despite growing smartphone penetration and digital tourism trends in Indonesia.

Based on the evidence gathered, we propose a growth strategy that consists of three interrelated components: infrastructure enhancement focused on accessibility and cleanliness; cultural programming and creative content development to enrich the visitor experience; and community inclusion and digital integration to build a resilient, future-oriented heritage tourism system. These strategic pillars, if developed collaboratively across stakeholders, can transform Surabaya's Old Precinct from a restored site into a living, dynamic cultural destination.

4. CONCLUSION

This study reveals that the revitalization of Surabaya's Old Precinct is not merely a physical restoration effort but a multidimensional process that intersects with issues of cultural sustainability, community participation, and economic regeneration. While the initiative has succeeded in improving the visual appeal and symbolic value of the heritage zone, critical challenges remain, including limited infrastructure, weak public engagement, and the absence of immersive tourism programs.

Theoretically, this research contributes to the discourse on urban heritage revitalization by emphasizing the importance of a multi-actor perspective. Unlike many previous studies that focus predominantly on architectural preservation or economic outcomes, this study highlights the interplay between government policies, community involvement, and private sector innovation. It expands the framework of heritage urbanism by integrating socio-cultural dynamics and visitor experience as essential components of sustainable regeneration.

From a managerial perspective, this study offers several practical implications for urban planners, heritage managers, and tourism stakeholders. First, revitalization efforts must be accompanied by clear institutional frameworks that support cross-sector collaboration. Local governments should establish dedicated heritage management units that involve representatives from the community and private sector to ensure that decisions are inclusive and adaptive. Second, strategic investments in public infrastructure, such as signage, sanitation, and digital interpretation, should be prioritized to enhance visitor experience and encourage longer stays. Third, programs to empower local communities and MSMEs through training, incubation, and market access are essential to prevent the exclusionary effects of gentrification and to ensure that the economic benefits of tourism are equitably distributed. Lastly, city branding strategies should integrate heritage values into long-term cultural planning, supported by regular events, partnerships with creative industries, and digital storytelling initiatives. These managerial steps will help ensure that revitalization is not only visually successful but also economically viable and socially inclusive.

The novelty of this study lies in its use of triangulated qualitative data to assess revitalization from the ground up, incorporating voices from policy, practice, and community. It addresses a research gap in the Indonesian context by providing a focused case study of Surabaya's Old Precinct, which has been relatively underexplored in comparison to cities like Semarang or Jakarta. Furthermore, the study advances methodological innovation by combining observational evidence with stakeholder narratives, resulting in a holistic understanding of revitalization impact.

Overall, this research underscores that revitalization is most effective when it transforms not only spaces but also the people and practices that animate them. Future efforts should prioritize inclusivity, long-term programming, and adaptive governance to ensure that heritage sites remain vibrant, relevant, and resilient in the face of urban change.

4.1 Limitations and Guideline for Next Research

Although this study effectively investigated several crucial elements of the regeneration of Surabaya's Old Precinct, there are several constraints that might provide chances for next studies.   First, while a more thorough examination of visitors' impressions and the effects of revitalization on their travel experiences is still lacking, this study concentrates more on the viewpoints of the government and the historical community.   Therefore, next studies should investigate how visitors perceive visiting the renovated heritage area and the elements influencing their satisfaction.   Second, this study has not particularly quantified the financial influence of revitalization on SME players and the creative economy sector in the Old Precinct of Surabaya; so, next studies should explore an economic effect analysis grounded on quantitative data.   Future studies should thus not only improve the management techniques for historical-based tourism regions but also offer more general understanding of the social, cultural, and financial effects of heritage area restoration.

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THE IMPACT OF BUMN HOLDINGS ON THE PERFORMANCE OF SUBSIDIARIES IN THE MINING AND OIL AND GAS CLUSTER

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Abstract-As a form of state-owned enterprises (BUMN) restructuring program, the government established several BUMN holdings. The ultimate goal of forming a holding company is that the company can have a strong position in the competition among its competitors. One of BUMN's contributions to the country is reflected in dividend payments. Dividends are one of the PNBP. This research analyzes the differences in PNBP from dividend payments before and after the policy of implementing BUMN holding in the mining and oil and gas BUMN cluster, case studies at PT Aneka Tambang (Antam) and PT Perusahaan Gas Negara (PGN). The analysis was carried out using profitability, solvency, liquidity and company operational costs (BOPO) ratios. This research uses the average difference test method for two independent samples. Based on tests on PT Antam's financial variables, it was found that holdingization has not had a significant impact on net profit margin (NPM), Debt to Equity Ratio (DER), dividend payout ratio (DPR) and BOPO. Another result is that the average current ratio (CR) before holding is lower compared to after holding. Based on tests on PT PGN's financial variables, it was found that holdingization has not had a significant impact on DER, DPR and BOPO. Meanwhile, testing the average CR shows that the average CR before holding is lower than after holding. Based on interviews with the management of PT Antam and PT PGN, they stated that the formation of the holding company had not had a significant impact on the company's performance.
Keywords: Holding; Net Profit Margin (NPM); Debt To Equity Ratio (DER); Dividend Payout Ratio (DPR); Current Ratio (CR); Liquidity And Company Operational Costs (BOPO) Ratios

1. INTRODUCTION

1.1 Research Background

The public often scrutinizes the performance of BUMN, which is considered to have contributed less than optimally to the national economy. When there are meetings between the executive and legislative bodies, questions and critical criticisms are often raised regarding BUMN performance. This occurs during meetings discussing the RAPBN, especially discussing the topic of dividend payments as PNBP and during meetings discussing the work plans of the Ministry of BUMN and the Ministry of Finance.

Conditions in many countries show that state-owned enterprises have relatively lower performance when compared to private companies. This condition occurs because of differences in objectives, where private companies are more profit-oriented while state-owned enterprises still carry a public interest mission (Kim, 2018). State-owned enterprises also tend to be less productive than private companies. Political parties tend to encourage state-owned enterprises to employ too many employees, where most of these employees are hired because they have a relationship with a particular political party, not because of their competence (Krueger, 2018).

Efforts to improve the performance of BUMN continue to be carried out by the Ministry of BUMN through 4 program initiatives, namely: 1) transformation of the health and rescue of strategic BUMN; 2) transformation of the BUMN portfolio structure, through the formation of clusters and sharpening of each cluster with the formation of a BUMN holding; 3) transformation of comprehensive governance and risk management both at the ministerial level and at the BUMN level and improving the quality of BUMN human resources to be more inclusive; and 4) creation of breakthroughs in new business models and innovations including the formation of a holding for BUMN for Oil and Gas and BUMN for Mining.

As a form of contribution to the BUMN restructuring program, the government has established several BUMN holdings. The BUMN Fertilizer Industry Holding and the BUMN Cement Industry Holding are holdings that were established in the early stages. In addition, the BUMN Oil and Gas Cluster and Mining Cluster holdings have also been established several years ago.

The formation of a holding will increase profitability according to a number of studies. After integration in terms of quick ratio, interest coverage ratio, current ratio, and return on capital employee, the company's financial performance will improve (Leepsa & Mishra, 2012). Companies that merged had a better impact on accounting and company performance when compared to joint ventures or alliances (M.dress, 2004). Mergers applied to the restaurant industry resulted in a significant increase in company income (Chatfield et al., 2011).

The policy regarding the establishment of BUMN holding companies has caused policy impacts, namely public anxiety and polemics about the benefits of establishing holding companies that are still ambiguous and the costs spent on BUMN reorganization policies are high (Kim, 2018). The establishment of BUMN holding companies with subsidiaries operating in geographical locations and business segments that are far different will result in smaller profits when compared to the profits that will be generated. On the other hand, the establishment of BUMN holding companies makes monitoring by external stakeholders more difficult due to the addition of entities to the ownership structure.

Examples of two companies that are major contributors of PNBP in their respective holdings are PT PGN Tbk and PT Aneka Tambang Tbk. The two companies were established long before the holding effort was carried out. In addition, PT PGN Tbk and PT Aneka Tambang Tbk were associated in the holding at almost the same time, namely PT PGN Tbk in

2017 and PT PGN Tbk in 2018. Therefore, the two companies were made the objects of this study.

The tendency of PNBP deposits from oil and gas holdings and mining holdings tends to decrease every year as can be seen in Figure 1. This is due to the transfer of share ownership from the Government of the Republic of Indonesia to the parent holding, resulting in dividend deposits being deposited to the parent holding compared to previously being deposited directly into the state treasury.
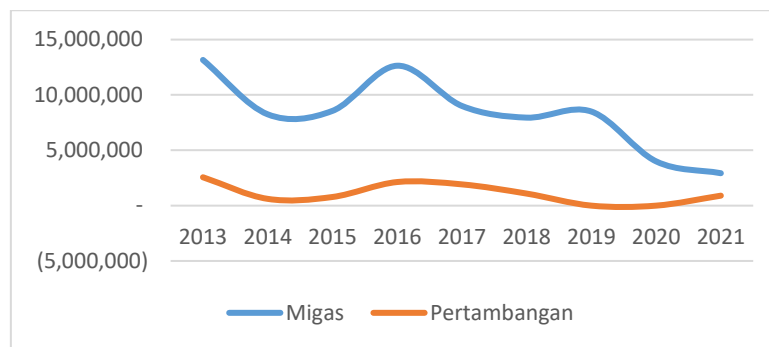
Figure 1. Trend of PNBP Dividends for Oil and Gas and Mining Clusters

There are several studies stating that the establishment of a holding company has a positive correlation with the increase in company income. In addition, there are also several studies stating that the establishment of a holding company causes a decrease in company income. The payment of BUMN dividends tends to decrease after the establishment of a holding company according to dividend payment data. Several studies examine the effect of holdingization on its holding company, while this study will focus on examining the effect of holdingization on subsidiaries. The company's ability to make a profit is one of the attractions for investors. Solvency ratio, profitability, return on equity (ROE), return on assets (ROA), and profit margin are some of the ratios used in assessing financial performance.

This study uses the variable of company operational costs which is a novelty of this study. This is done because this study wants to find out how cost efficiency as one of the benefits arising from holdingization can be felt by the company. This condition is very interesting to conduct research because the purpose of establishing a BUMN holding company is to increase leverage, encourage efficiency, increase capacity, and develop the potential of BUMN so as to increase the opportunity for increasing income and profit of the business entity. The problem studied is how the financial performance of PT Aneka Tambang and PT Perusahaan Gas Negara was before and after the implementation of the BUMN holding policy.

1.2 Literature Review
1.2.1 BUMN Holding
Holding companies are also called parents companies or controlling companies. A holding company is a company that controls another company, while a subsidiary is a controlled company, both companies are called a group of companies (Utoyo, 2019). This holding gives the parent company the right to control the subsidiary. The parent company can choose management in the subsidiary through shares owned in the subsidiary (Utoyo, 2019). The formation of a holding company can also help achieve consolidation goals because each subsidiary has the same goals as the parent company (Nishino et al., 2010).

The issuance of Government Regulation Number 47 of 2017 concerning the Addition of State Capital Participation of the Republic of Indonesia into the Share Capital of PT Inalum (Persero)

formed a holding company for BUMN Mining. The holding company, commonly referred to as MIND ID, aims to increase business and funding capabilities, manage mineral and coal resources, conduct downstreaming and increase local content to increase added value, and make costs more efficient by carrying out the collaboration. PT. Indonesia Asahan Aluminium (Persero) acts as the parent holding company and PT. Aneka Tambang Tbk, PT. Bukit Asam Tbk, PT. Timah Tbk, PT. Vale Indonesia Tbk, and PT. Freeport act as members of the holding company.

1.2.2 Performance Measurement

The Ministry of BUMN also issued regulations on the assessment of the health level of BUMN. Based on the Decree of the Minister of State for BUMN Number Kep-100/MBU/2002 dated June 4, 2002 on the assessment of the health level of BUMN, the health level of BUMN is assessed based on several aspects, namely financial aspects, operational aspects and administrative aspects (BUMN, 2002).

    a. Profitability

There are three aspects in measuring company performance based on international strategy, namely financial, operational and effectiveness. A company is considered a value-creating company if the company is able to generate profits greater than the company's cost of capital (Bansal et al., 2020). The financial aspect shows the fulfillment of the company's economic goals, including using return on investment (ROI), return on assets (ROA), return on Equity (ROE) and return on sales (ROS), profit margin, earnings per share, sales growth (Venkatraman & Ramanujam, 1986). Financial and non-financial parameters can measure the performance of BUMN. Performance assessment in the financial aspect can be done by measuring the company's ability to obtain company profits. This indicator can be assessed by profitability, solvency, rentability, and asset turnover. The higher rate of return on investment is indicated by an increase in the ROE value (Sumarsidi & Hairudinor, 2021). The higher the profitability ratio value, the greater the company's profits and the higher the level of efficiency (Fitriana, 2022).

    b. Leverage

The creation of an internal capital market for companies involved in the establishment of a holding company for those who have difficulty in obtaining an external market is one of the objectives of establishing a holding company. Collaboration of companies in the form of a holding company aims to secure the internal market for business continuity (Nishino et al., 2010). Companies in the form of holding companies provide an easy way to obtain sources of funds so that BUMN has the opportunity to increase its financial resources thanks to the company's restructuring process. This increase in capital sources encourages BUMN to carry out development activities so that the community can feel the benefits (Sumarna & Solikin, 2018). Holding also increases financial performance in the form of company leverage. This increase is measured by the interest coverage ratio (Leepsa & Mishra, 2012). The formation of a holding will also make the company's income flow stable. This condition will make creditors trust them to increase their loan limits

    c. Dividends

The establishment of a holding company has the ultimate goal of enabling the company to improve its position strongly in the competition among its competitors. This goal can be achieved by increasing collaboration and cooperation between the company's headquarters and its branches. This increase in competitiveness will

provide opportunities for the company to expand its market not only domestically but also abroad. The company's ability to pay dividends shows the company's value (Ayem & Nugroho, 2016). This opportunity will increase the company's income so that it will increase the value of dividend deposits to the state treasury in the form of non-tax state revenues (Sumarna & Solikin, 2018).

d. Liquidity

The establishment of a holding company has the ultimate goal of allowing the company to have a strong position in the competition among its competitors. If it already has a strong position in the market, the company will easily intervene in the market. The opportunity for this position will trigger an increase in the company's income, which will later improve the company's cash flow, resulting in increased liquidity. Liquidity is an indicator that can assess whether a company is able to meet its obligations in the short term with the current assets it has. The company's liquidity increases if a holding company is established (Leepsa & Mishra, 2012)

e. Operational Costs

The establishment of a holding company provides an opportunity for a more stable company income stream. This opportunity can provide a sense of security for creditors so that the company's loan limit can be increased. The loan can be used as additional capital, which will later increase the company's operational performance (Sumarna and Solikin, 2018). Long-term cash flow can be increased with good cooperation and collaboration efforts so that it can increase business diversification and minimize costs (Kumar & Bansal, 2008). The formation of a holding company is expected to provide facilities for parent companies and subsidiaries to improve their performance, because synergy can be more efficient (Utoyo, 2019).

2. RESEARCH METHODOLOGY

This study uses secondary data, namely the financial reports of state-owned companies start from 2008 until 2022. The financial report data is submitted to the Ministry of Finance in charge of non-tax state revenues (PNBP), namely the Directorate General of Budget (DJA). The approach used in this study is a quantitative approach. In addition, researchers also conducted interviews with resource persons in focus group discussions (FGD) to obtain some information related to the results of data processing. The resource persons interviewed were management directors at PT Aneka Tambang and PT Perusahaan Gas Negara.

2.1 Variable and Measurement

a) Profitability

Profitability ratios can describe the effectiveness of company management so that it can generate profits (Sumarna & Solikin, 2018). The final calculation of profit obtained after deducting taxes or can be said as net profit. The greater the net profit, the greater the net profit margin (Bionda & Mahdar, 2017). The effectiveness of company management can be measured by several ratios, namely gross margin, net profit margin, return on total assets, and return on equity. This study uses net profit margin with the following formula:

$$\text{Net Profit Margin} = (\text{Net Income}) / \text{Revenue}$$

b) Leverage

The solvency or leverage indicates the proportion of debt to finance a company's investments (Bramaputra & Musfitria, 2022). Investors tend to avoid the additional risk imposed on shareholders as a result of a company's use of debt (Prasetyorini, 2013). The

proportion of debt to finance investment can be measured using several ratios, namely debt to asset ratio, debt to equity ratio, long-term debt to equity, and interest coverage ratio. This study uses the debt to equity ratio to measure leverage with the following formula:

$$\text{Debt to Equity Ratio} = (\text{Total Liability}) / (\text{Total Equity})$$

c) Dividends

Dividends according to PSAK number 23 (revised 2010:103) are the distribution of profits to equity holders according to their respective proportions derived from certain capital, not regulating the recognition of dividends on equity securities announced from net income before acquisition. Dividend payout ratio (DPR) is a comparison of how much of the net profit after tax is paid as dividends to shareholders (Prasetyorini, 2013). The DPR formula is :

$$\text{DPR} = (\text{Dividend Per Share}) / (\text{Earnings Per Share})$$

Dividends per share are called Dividend Per Share (DPS). Income per share is called Earning Per Share. EPS is the value of profit distributed to shareholders for each share ownership.

d) Liquidity

Liquidity is the ability of a company to meet its short-term obligations. The company's ability to meet short-term obligations can be measured by several ratios, namely the current ratio, quick ratio, cash ratio, and operating cash flow. To measure liquidity, the author uses the current ratio with the formula:

$$\text{Current Ratio} = (\text{Current Asset}) / (\text{Current Liability})$$

e) Operational Costs

Operational costs are costs that arise because the company carries out business management activities. The company's operational costs are measured by the ratio between the company's operational costs and operating income (BOPO). This measurement is carried out to calculate performance based on operational costs.

2.2 Data Analysis

Quantitative research is used as an approach in this study. The quantitative data analysis method used in this study is the average difference test for two independent samples. This method is used to determine the average difference before the establishment of the BUMN holding and after the establishment of the BUMN holding. To analyze the impact of holding using the average difference test, the data must first be tested whether it is normally distributed. This distribution test is important to run to determine whether further analysis will use parametric or non-parametric analysis. The study is continued with parametric analysis, namely by applying the t-test for two independent samples if based on the test it is found that the data results for certain variables are normally distributed. In addition, the study is continued with non-parametric analysis, namely by applying the Mann-Whitney test if based on the test it is found that the data is not normally distributed.

3. RESULT AND DISCUSSION

PT ANTAM received an average net profit of 6.38%. The maximum net profit ever achieved by PT ANTAM was 28.64%. However, PT ANTAM once experienced a loss, namely

a minus profit of 13.68%. The minus profit that occurred caused PT ANTAM to retain all profits in that year so that it did not provide dividends to shareholders. PT ANTAM's financial performance experienced instability in the period before the holding was implemented.

The results of the analysis show that the average NPM, CR, and BOPO figures owned by PT ANTAM after the holding was implemented were smaller than before the holding was implemented. In addition, the average DER and DPR figures after the holding was implemented were greater than the average before the holding was implemented. This result does not apply to PT PGN which experienced negative profits after the holding was established. The company's losses were seen in the NPM figure component which had a negative coefficient, which was -9.18%. In addition, PT PGN in the same year did not distribute dividends to shareholders. The results of the analysis show that the average financial performance in the NPM, DER, DPR and CR ratios owned by PT PGN after the holding was implemented was smaller than before the holding was implemented. Meanwhile, the average BOPO financial performance after the holding was implemented was greater than the average before the holding was implemented.

The results of the analysis show that there are a number of financial performances that show a positive influence after the establishment of the holding, but there are also a number of financial performances that show a negative influence due to the holding based on descriptive analysis. Therefore, the analysis will be deepened by examining the influence of the establishment of the holding on each company and also looking at the comparison of the impact on the two companies before and after the holding is implemented. In addition, the assessment process will be followed by an evaluation of the advantages based on the financial performance of the two companies. In the final section, the author will see how good company performance causes an increase in dividends given to shareholders.

To analyze the impact of holding using the mean difference test, the data must first be tested whether it is normally distributed. The normal distribution test used is the Kolmogorov-Smirnov Test using $\alpha = 5\%$. Table 1 shows the results of the data distribution test.

Table 1 Data Distribution Test Results

Variable	Test Result
NPM	Data follows a normal distribution
DER	Data does not follow normal distribution
DPR	Data follows a normal distribution
CR	Data does not follow normal distribution
BOPO	Data does not follow normal distribution

The hypothesis used is that the data is normally distributed (H_0) with the alternative hypothesis that the data is not normally distributed. Table 1 shows that by using $\alpha = 5\%$, it is known that the NPM and DPR variables are normally distributed. Meanwhile, the DER, CR, and BOPO variables are not normally distributed. Therefore, to test the difference in the average of the NPM and DPR variables using the t-test for two independent samples, while the DER, CR and BOPO variables are analyzed using the Mann-Whitney Test.

This study will focus on testing to see the influence of holding and to find out the tendency of financial performance each year of the two companies. Both analyses will be applied to each research variable.

3.1 NPM Variable

The level of company profitability can be measured by the NPM ratio. This profitability explains how the company carries out effective management which can result in profits. The

company's ability to obtain net profit from each company's sales that have been reduced by tax can be measured by this NPM ratio. The higher the NPM, the more efficient the costs incurred. The amount of NPM will cause the level of net profit returns received. For investors, NPM is a consideration in assessing the condition of the company. The greater the NPM means the better the company's ability to generate net profit, so that the shares will also increase. The higher the stock price, the higher the stock return obtained. The greater the NPM value indicates that the company's performance is more productive, thus increasing investor confidence.
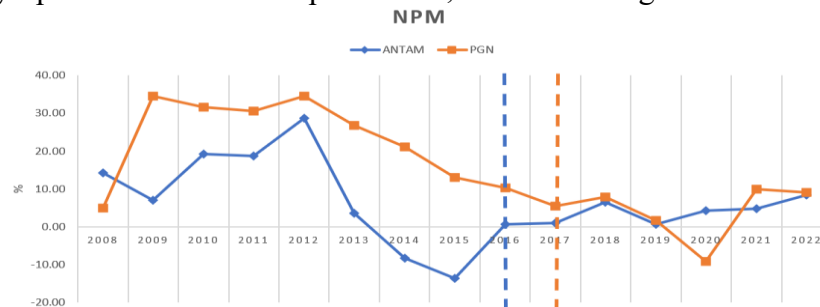
Figure 2 NPM Trends from 2008 to 2022

If we look at Figure 2, it turns out that the average NPM is lower after holding, both for PT ANTAM and PT PGN. Referring to Law number 19 of 2003 concerning BUMN, the purpose of restructuring is:

a) to improve the performance and value of the company,

b) to provide benefits in the form of dividends and taxes to the state,

c) to produce products and services at competitive prices to consumers.

However, from the perspective of the NPM trend, PT ANTAM shows an increasing trend after the holding. Meanwhile, PT PGN experienced a significant decline before the holding and still fluctuated after the holding. To compare the impact of the holding on the NPM variable in PT ANTAM and PT PGN, an analysis was carried out using a t-test for two independent samples because the data on the NPM variable were normally distributed. The test results are presented in Table 2.

Based on the testing of Table 2, it is known that PT Antam does not yet have enough evidence to state that the formation of holding has an impact on NPM or in other words, the average NPM before and after holding is not different. However, PT PGN obtained different results, namely there was a significant difference in the average NPM value between before and after holding. The interview method was conducted to obtain data on the NPM condition. Interviews were conducted by the author on September 13, 2023 and September 15, 2023 to the management of PT PGN and PT Antam. The results obtained were an explanation that the NPM trend condition was mostly caused by external factors of the company. According to PT PGN Management, the decline in NPM in 2016 and 2017 occurred due to the acquisition of PT Pertagas. The decline in 2019 was due to a tax dispute due to a Supreme Court decision stating that PT PGN had lost and had to pay taxes. Meanwhile, in 2020, the decline in NPM was caused by the pandemic, tax disputes due to the Supreme Court's decision on 18 lost cases, and government policies regarding certain natural gas prices (HGBT), so that PT PGN could not sell at commercial prices.

Table 2. Results of Testing the Impact of Holding on the NPM Variable

Variable	t-stat	p-value and decision	Conclusion
PT ANTAM Median Value Before : 7,79 Median Value After : 4,25	0,615	0,549 Failed to Reject H_0	There is no difference in the mean value of NPM between before and after holding
PT PGN Median Value Before : 21,31 Median Value After : 3,92	2,924	0,012 Reject H_0	There is a difference in the mean value of NPM between before and after holding

The same condition also occurs in PT Antam where the NPM trend is largely caused by the company's external conditions. If seen from the movement of the NPM trend that goes up and down, but there is an upward trend after holding. In 2012, NPM experienced a significant increase compared to the previous and subsequent years. This happened because there was a mark to market for free carried shares obtained from investments in gold companies in Indonesia. In 2014 and 2015, NPM also decreased because there was a ban on the export of nickel ore and bauxite. There was an improvement in 2016 due to the contribution of gold products, so that PT Antam began to strengthen the domestic gold business which provided better profits. The construction of a smelter in 2017 made bauxite exports reopen. In addition, the existence of impairment makes subsidiaries one of the burdens. The Covid pandemic in 2020 closed the trading doors which affected non-gold commodities, while gold experienced an increase in price and volume which was able to help the NPM in 2020. This condition will continue until 2022 and will continue to improve with the end of the pandemic and the price conditions of vero nickel which tend to improve in the global market.

3.2 DER Variable

The average DER variable at PT ANTAM and PGN after holding is greater than before holding, this is the opposite of the NPM variable. DER is a measure to measure leverage. This leverage shows the proportion of debt to finance investment. DER shows the comparison of debt and equity in the Company's funding and the ability of its own capital to meet all its obligations.

A smaller DER figure indicates good solvency and condition of the company because it is better at paying all obligations. Conversely, a larger DER means a larger debt which results in increasing the company's interest expense which will eventually reduce the company's income. A larger DER ratio indicates a company's capital structure that utilizes more debt than equity so that the company's risk reflected is relatively high.

The Mann-Whitney test is used as an analysis method to see the impact of holding on the DER variable in both companies. This test is used because one or both variables are not normally distributed. The test results can be seen in Table 3.

Table 3. Results of Testing the Impact of Holding on DER Variables

Variable	t-stat	p-value and decision	Conclusion
PT ANTAM Median Value Before : 50,7 Median Value After : 61,6	-1,061	0,289 Failed to Reject H_0	There is no difference in the mean value of DER between before and after holding

Variable	t-stat	p-value and decision	Conclusion
PT PGN Median Value Before : 111,36 Median Value After : 133,7	-1,102	0,27 Failed to Reject H_0	There is a difference in the mean value of DER between before and after holding

From the test results in Table 3, it was found that the formation of a holding has not had a significant impact on financial performance, especially the DER variable, both in PT ANTAM and PT PGN. According to PT PGN management, debt was incurred for capital expenditure in order to expand the gas network on the Rokan pipeline. PT ANTAM management explained that the increase in DER occurred because of capital investment made using debt such as the renewal of factory facilities in Pomala, the construction of a smelter in Halmahera, and the acquisition of PT ICE, not because of the formation of a holding.

3.3 DPR Variable

Both companies have similar trends so that they have differences with the previous analysis of the NPM and DER variables. For the DPR variable between the average before and after holding shows different results in both companies. PT ANTAM shows a larger average DPR after holding than before holding. While PT PGN DPR given to shareholders after holding decreased compared to before holding.

DPR is a ratio to calculate the dividend variable that compares how much proportion of net profit after tax is paid as dividends to shareholders. Usually companies are reluctant to reduce the dividends they share, because a decrease in dividends will give a bad perception to investors. Companies that cut dividends are considered to be experiencing liquidity problems so they need to get additional funds through dividend cuts. This condition is in accordance with what happened at PT ANTAM which showed that the average DPR of PT ANTAM after holding was greater than before holding. However, there is a difference at PT PGN, where the average DPR after holding was lower than before holding.

There have been many studies that strengthen the opinion that profitability is the most important element for managers in deciding dividend policy (Le et al., 2019). The liquidity ratio shows the Company's ability to pay its debt obligations (Le et al., 2019). Therefore, in order to meet debt repayment obligations and other obligations, the Company can reduce their dividends. Increasing the debt ratio will decrease DPR and decreasing the debt ratio will decrease DPR.

If profitability is calculated using the NPM ratio and liquidity is calculated using the DER ratio, the DPR ratio of PT ANTAM has a different tendency from the research of Lintner, Nguyen and Tran. Although the NPM ratio and DER ratio of PT ANTAM after holding tend to be less good, the DER ratio tends to be greater after holding. The debt to equity ratio does not affect the dividend payment ratio (Fitriana, 2022). Signaling theory explains that companies that do not distribute dividends can be categorized as experiencing financial difficulties. BUMN tends to pay dividends routinely as long as the leverage level is still normal and the financial condition is in good condition.
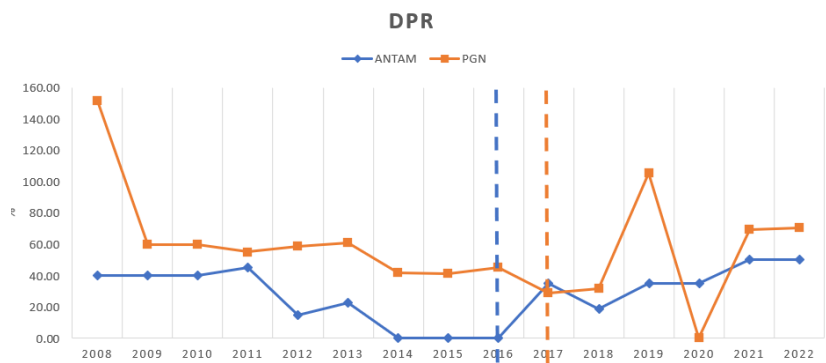
Figure 3. DPR Trends from 2008 to 2022

The trend of DPR data from 2008 to 2022 shows that the DPR value given by PT ANTAM is always lower than the DER given by PT PGN. Except in 2017 and 2020 which showed that the DPR value of PT ANTAM was higher than that of PT PGN. After the holding was carried out at PT PGN, the DPR given by PT PGN still fluctuated, in one condition it would be very high but after that it could be very low and even reach zero percent. Meanwhile, at PT ANTAM, three years before the holding was carried out, the DPR given by PT ANTAM was zero percent which would then improve after the holding was carried out.

The t-test for two independent samples was conducted to see the impact of holdingization on the DPR variable. The test results can be seen in Table 4. The test results show that holdingization has not had a significant impact on financial performance, especially DPR. In the descriptive analysis, it is known that DPR at PT ANTAM increased when compared to before holding. However, the test results showed that the increase that occurred was not significant so that the average before and after holding at PT ANTAM was concluded to be no different.

Table 4 Results of Testing the Impact of Holding on the DPR Variable

Variable	t-stat	p-value and decision	Conclusion
PT ANTAM Median Value Before : 22,5 Median Value After : 37,28	-1,666	0,12 Failed to Reject H_0	There is no difference in the mean value of DPR between before and after holding
PT PGN Median Value Before : 60,26 Median Value After : 55,43	0,246	0,81 Failed to Reject H_0	There is a difference in the mean value of DPR between before and after holding

According to PT PGN management, the amount of DPR depends on the policy at Pertamina. In determining the amount of DPR, there are certain criteria made by Pertamina such as cash needs at Pertamina and loan payments. The policy had an impact in 2019 where DPR was very high because there was a request from Pertamina. In 2020 there was a decrease because NPM in that year also decreased.

PT ANTAM also has the same condition, PT ANTAM management explained that the dividend payment has increased in the last 3 years. Initially, the dividend payment was carried out based on the policy promised in the dividend prospectus, which was 30%. This condition changed when the Ministry of BUMN requested an increase in contribution of up to 50%.

3.4 CR Variable

CR is a measure to measure the company's liquidity. Liquidity shows the company's ability to meet short-term obligations. CR can be used to see the company's ability to pay current obligations with owned assets. The higher the CR ratio, the better the company's ability to pay current debts with owned assets. With the holding, it is expected to increase the value of a Company's assets so that it is able to meet short-term obligations compared to before holding. However, if seen from Table 5, the CR value after holding is lower than before holding.
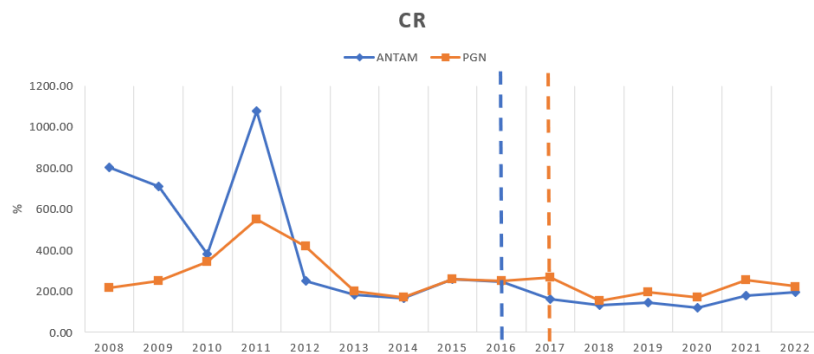
Figure 4. CR Trends from 2008 to 2022

Based on the graph in Figure 4, the movement of CR data shows that the CR value of PT ANTAM tends to be smaller when compared to the CR of PT PGN after 2011. Only in 2008 to 2011 was the CR value of PT ANTAM higher than that of PT PGN.

Table 5 Results of Testing the Impact of Holding on the DPR Variable

Variable	t-stat	p-value and decision	Conclusion
PT ANTAM Median Value Before : 452,56 Median Value After : 155,77	-2,828	0,048 Reject H_0	There is a difference in the mean value of CR between before and after holding
PT PGN Median Value Before : 292,4 Median Value After : 199,29	-1,96	0,05 Reject H_0	There is a difference in the mean value of CR between before and after holding

The results of the test of the average difference in CR before and after holding showed no different results in both PT ANTAM and PT PGN, namely there is sufficient evidence to state that the average CR before holding is lower than the average CR after holding. So it can be concluded that in PT ANTAM and PT PGN, the ability to pay current debts with owned assets has decreased after holding.

Based on the explanation from PT PGN management, the decrease in CR after holding was due to the acquisition of Pertagas where payments were made in stages in 2017 and 2018, provisions for tax disputes in 2019 and 2020 recorded in current liabilities and the difference between HGBT and commercial prices recorded in current liabilities. A similar thing was felt by PT ANTAM, namely the decrease in CR caused by the high dividends distributed up to 50% as requested by the Ministry of BUMN.

3.5 BOPO Variable

Operational costs are costs incurred by a company in running and managing a business. BOPO is the ratio between a company's operational costs and operational income. BOPO is also called the efficiency ratio because the BOPO ratio is used to see management's ability to control operational costs. Increasingly efficient operational cost control is indicated by a smaller BOPO ratio. This operational cost efficiency can drive the company's profits to be even greater.

The average BOPO of PT ANTAM is getting lower after holding. This is in line with the results of previous studies such as Utoyo (2019) where the formation of a holding company is expected to be a facility to facilitate the parent company and improve the performance of subsidiary companies due to more efficient synergy. From an average perspective, BOPO of PT PGN is higher than before holding. From the trend that occurred in 2008-2022, the BOPO ratio of PT ANTAM and PT PGN has a tendency that is not different before and after holding. However, it should be noted that at PT ANTAM when holding was carried out, the BOPO ratio of PT ANTAM increased sharply.
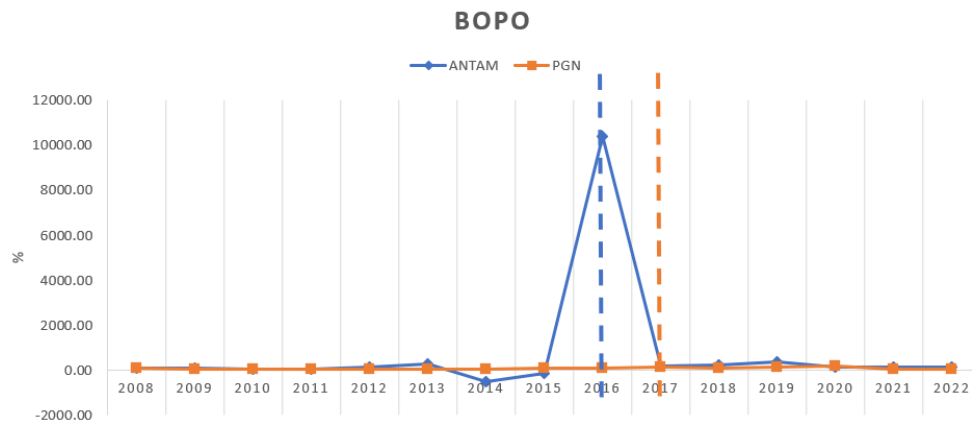
Figure 5. BOPO Trends from 2008 to 2022

The test results to determine the impact of holding can be seen in Table 6. Both companies do not have enough evidence to state that there is a significant impact of holding on BOPO.

Table 6 Results of Testing the Impact of Holding on the BOPO Variable

Variable	t-stat	p-value and decision	Conclusion
PT ANTAM Median Value Before : 1153,33 Median Value After : 183,24	-1,65	0,509 Failed to Reject H_0	There is no difference in the mean value of BOPO between before and after holding
PT PGN Median Value Before : 63,9 Median Value After : 99,2	-0,857	0,44 Failed to Reject H_0	There is no difference in the mean value of BOPO between before and after holding

From the explanation of PT PGN management, after holding there were indeed some efficiencies due to cost sharing. However, in terms of the BOPO ratio, there was no difference between before and after holding. Based on the interview results, there was no difference because the decrease in operational costs was followed by a decrease in operational income as reflected in the NPM after holding which tended to decrease.

PT ANTAM management explained that with the holding, there are several efficiencies that are carried out, such as joint procurement in the "Bersatu Jaya" program. This procurement is carried out because there is the same need for all members of the holding, so it is hoped that they will get a cheap price if the procurement is carried out in large volumes. In terms of funding, national pooling is carried out to obtain cheap funding. However, this step does not have much effect on BOPO because there are fluctuations in income and costs. Despite the increase in commodity prices, PT Antam also experienced fluctuations in costs such as the increase in gasoline prices in 2021, the purchase of gold raw materials which must be done through exports. Table 14 presents a summary of hypothesis testing to answer the first research problem. The results show whether or not there is a significant influence on the formation of a holding based on financial report data

4. CONCLUSION
4.1 Conclusion
Based on the analysis and hypothesis testing, several things can be concluded as follows:
    a. The results of the test analysis show a decrease in the NPM and CR variables at PT PGN after holding, while for financial performance, namely DER, DPR, and BOPO, there is no difference between before and after holding. At PT ANTAM, only the CR variable is significantly different between before and after holding, while for the other four financial performances there is no difference.
    b. Testing on the financial variables of PT ANTAM shows that holdingization has not had a significant impact on NPM, DER, DPR, and BOPO. In addition, the results of the analysis show that the mean value of CR before holding is greater than after holding. The decrease in CR after holding was due to the high dividends distributed, reaching 50% as requested by the Ministry of BUMN.
    c. The results of testing on the financial variables of PT PGN state that holdingization has not had a significant impact on DER, DPR, and BOPO. In addition, the results of the analysis show that the mean value of CR before holding is greater than after holding. The decrease in CR after holding was due to the acquisition of Pertagas where payments were made in stages in 2017 and 2018, provisions for tax disputes in 2019 and 2020 recorded in current liabilities and the difference between HGBT and commercial prices recorded in current liabilities.
    d. In general, the impact of holding has not been seen significantly. Holding which is expected to be able to improve the company's financial performance has not been seen.

4.2 LIMITATION
The research limitations that researchers experienced are as follows:
    a. This study only analyzes the impact of holdingization on PT Antam and PT PGN, the study will be more comprehensive if research is conducted on other subsidiaries in each holding;
    b. Based on interviews with PT Antam management, it was explained that there was a change in the holding strategy applied to the parent company, where initially it was a strategic holding then became an active strategic holding. The research would be better if it included the period of this holding strategy change;
    c. The research period after holding is carried out for performance until 2022, this means that the impact study after holding is only carried out for 5 years. The research will be more comprehensive if the impact period after holding is longer.

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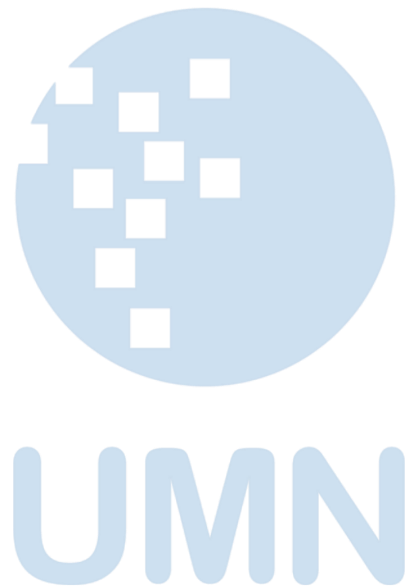
LEVEL UP PERFORMANCE: THE ROLE OF COMPETENCE AND TRAINING THROUGH MOTIVATION AT KPPN PAMEKASAN WORK UNIT

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Abstract - HR is a key factor in the success of an organization, including the government sector. In the context of accelerating budget absorption, the role of the SATKER treasurer is very crucial. This study aims to analyze the effect of competence, motivation, and training on employee performance in supporting the acceleration of budget absorption in the Pamekasan KPPN work area. The type of quantitative research with a descriptive approach. The population in this study were all SATKER treasurers totaling 105 people with a saturated sampling technique. Data collection was carried out through a Likert-scale questionnaire. Data analysis used SEM PLS through the SmartPLS application with outer and inner model assessment indicators. The results of the study showed that competence and motivation didn't have a positive and insignificant effect on performance while training had a positive and significant effect on performance. Indirectly, competence didn't have a significant but significant effect on motivation while training didn't have a significant effect on motivation. The results of the mediation test showed that motivation didn't mediate the relationship between competence and training on performance. These findings indicate the importance of increasing training for SATKER treasurers to support the effectiveness of budget absorption and state financial reform..
Keywords: Performance; Competence; Training; Motivation; KPPN Pamekasan

1. INTRODUCTION
1.1. Background of the research

Human resources (HR) are important assets in an organization that determine long-term success. Employees who have high competence, integrity and skills play a vital role in achieving organizational goals, including in the government sector. In the context of accelerating development and economic growth, government employees are required to perform optimally, especially in supporting the acceleration of budget absorption as stipulated in the Work Plan and Budget of the Ministry/Institution (RKA-KL) and various related regulations, such as Presidential Regulation No. 53 of 2010 and Circular Letter of the Minister of Administrative and Bureaucratic Reform No. 10 of 2014.

However, slow budget absorption, especially at the end of the budget year, is still a classic problem in many Work Units (SATKER), including in the Pamekasan State Treasury Service

Office (KPPN). Based on monitoring by the Directorate General of Budget, there are still many SATKER with absorption rates below target. This indicates that there are obstacles to employee performance, especially SATKER treasurers who have important responsibilities in the budget management and absorption process.

Further observations conducted at KPPN Pamekasan showed that the low budget absorption was suspected to be caused by limited competence, high workload, work motivation and lack of training for treasurer employees in operating the ever-evolving financial accounting information system. This condition has an impact on the effectiveness of performance and achievement of organizational goals.

To answer this phenomenon, this study was conducted with a focus on the main variables: competence and training. Both variables are believed to have an influence on the performance of SATKER employees which ultimately has a direct impact on the acceleration of budget absorption. In addition, there is a motivation variable as an intervening variable between the influence of competency and training variables on performance. Where this is based on several previous studies such as (Huda & Abdullah, 2022; Krisnayanti et al., 2024; Masruroh & Fatimah, 2023) which discuss motivation as an intervening variable between competence and performance and several other previous studies such as (Khuluq et al., 2025; Mulyadi et al., 2025; Neza & Rivai, 2020) which discuss motivation as an intervening variable between training and performance.

From the background above, the problems in this study can be formulated including: 1. Does competence directly affect employee performance?; 2. Does training directly affect employee performance?; 3. Does motivation directly affect employee performance?; 4. Does competence indirectly affect employee performance through motivation?; 5. Does training indirectly affect employee performance through motivation?; 6. Is motivation a mediating variable between the influence of competence on employee performance? and 7. Is motivation a mediating variable between the influence of training on employee performance?

1.2. Literature review
1.2.1 Performance

Performance is the result or level of success of a person as a whole during a certain period in carrying out tasks compared to various possibilities, such as work result standards, targets or goals or criteria that are determined in advance and have been agreed upon together (Emmyah, 2009). Work assessment is an assessment of employee working conditions that is carried out formally and is linked to work standards that have been determined by a particular agency (Rezita, 2015). In improving the performance of an organization, employee performance assessment is very important. Employee performance assessment requires several aspects (Sugiyono, 2009) including: 1. Quality of work; 2. Quantity of work; 3. Job knowledge; 4. Teamwork; 5. Creativity; 6. Innovation; and 7. Initiative.

1.2.2 Competence

Competence is an ability to carry out a job or task based on skills and knowledge and supported by the work attitude required by the job (Wibowo, 2018). Competence itself can be divided into two, namely technical competence (Hard skill) and behavioral competencies (Soft skill). Hard skills are needed by employees in carrying out their work based on their knowledge, while soft skills are needed in relation to how a person behaves in carrying out their work well (Hutapea & Thoha, 2008).

1.2.3 Training

Training is a process that includes a series of actions (efforts) that are carried out intentionally in the form of providing assistance to workers carried out by professional training personnel in a unit of time that aims to improve the work ability of participants in certain fields of work in order to increase effectiveness and productivity in an organization (Hamalik, 2007). The objectives of education and training related to performance (Rezita, 2015) are: 1. Train and improve work mechanisms and sensitivity to carry out tasks; 2. Improve knowledge and work skills; 3. Improve personality and spirit of devotion to the organization and society; 4. Improve knowledge, expertise, skills and attitudes to be able to carry out job duties professionally based on personality and ethics.

1.2.4 Motivation

Motivation is as a provider of driving force that creates a person's work passion, so that they are willing to work together, work effectively and integrate with all efforts to achieve satisfaction (Keran, 2010). Motivation can encourage humans to achieve a goal and of course the goal is a need or desire that must be achieved by every human being. Humans will be driven to fulfill the strongest needs according to the time, circumstances and experiences concerned following a hierarchy (Stoner et al., 1996).
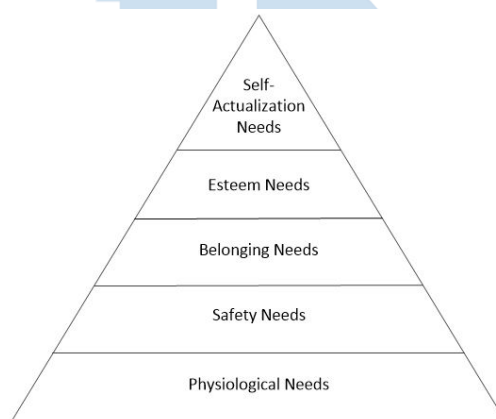
Figure 1. Maslow's Theory

1.3 Research Framework and Hypothesis

The following is the research framework in this research:
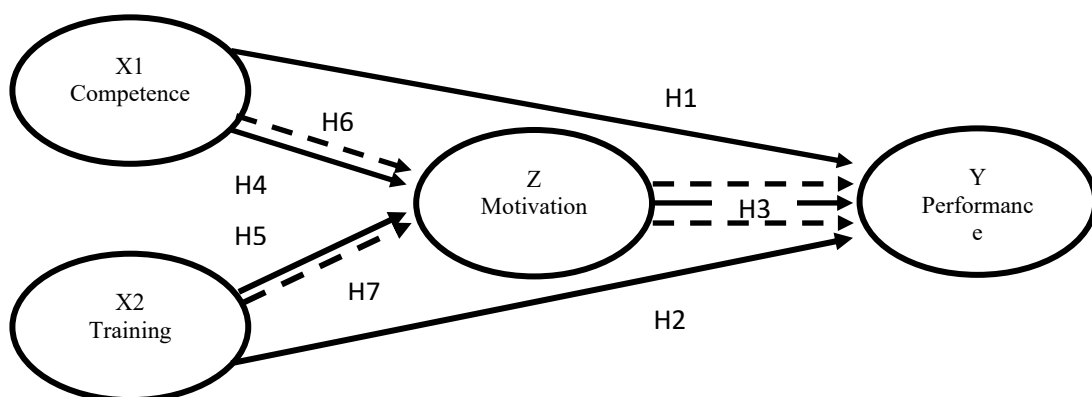
Figure 2. Research Framework

Based on this framework, The following is the hypothesis in this study:

Good competence will increase the effectiveness, productivity and quality of employee work, thus having a direct impact on improving performance (Ganting & Supriadi, 2025). Competent employees are able to make the right decisions, face work challenges and adapt to change (Koroh et al., 2025). From several previous research results, competence affects performance (Riskal et al., 2025) so that researchers formulate the following hypothesis:

 H1 : Competence has a direct impact on performance

Training has a positive effect on performance because it provides new knowledge, updates skills and increases self-confidence in completing work (Iskandar et al., 2025). Through training, employees are better prepared to face new tasks and challenges which lead to increased individual and organizational performance (Widyaningrum et al., 2025). From several previous research results, training has an effect on performance (Riskal et al., 2025) so that researchers formulate the following hypothesis:

 H2 : Training has a direct impact on performance

Motivated employees show high work commitment, initiative and loyalty in working so as to produce optimal performance (Ibura et al., 2025). Motivation is an important bridge that determines whether what employees have is correctly translated into optimal performance. From several previous research results, motivation has an effect on performance (Rozi et al., 2025) so that researchers formulate the following hypothesis:

 H3 : Motivation has a direct effect on performance

When employees feel competent and able to complete tasks well, they will feel more confident, appreciated and have meaning in their work, all of which encourage work motivation (Fauzi & Nugroho, 2024). Competence makes employees feel more empowered, involved and want to continue to develop, thereby increasing work enthusiasm and commitment. From several previous research results, competence has an effect on motivation (Ismail et al., 2024) so that researchers formulate the following hypothesis:

 H4 : Competence has an indirect effect on performance through motivation.

Training provides opportunities for employees to learn and develop which can increase self-confidence and work readiness. Training also increases job satisfaction because employees feel supported in career development which ultimately increases work motivation (Anton, 2024). From several previous research results, training has an effect on motivation (Meliza et al., 2025) so that researchers formulate the following hypothesis:

 H5 : Training has an indirect effect on performance through motivation.

Motivation also acts as a mediating variable between competence and performance. This means that good competence does not necessarily have a big impact if it is not accompanied by high work motivation (Fauzi & Nugroho, 2024; Ismail et al., 2024). From several previous research results, researchers formulated the following hypothesis:

 H6 : Motivation is a mediating variable between the influence of competence on performance.

Motivation also acts as a mediating variable between training and performance. This means that good training will not necessarily have a big impact if it is not accompanied by high

work motivation (Anton, 2024; Meliza et al., 2025). From several previous research results, researchers formulated the following hypothesis:

    H7   : Motivation is a mediating variable between the influence of training on performance

2. RESEARCH METHODOLOGY
2.1 Methodology

This study uses a quantitative approach with a descriptive research type that aims to test hypotheses through measurable data and produce conclusions that can be generalized (Triyuwono, 2007). The location of the study was at the Pamekasan State Treasury Service Office (KPPN), with the research object being all treasurers of the Work Unit (SATKER) in the Pamekasan KPPN work area, totaling 105 people. Because the population is relatively small, this study uses a saturated sampling technique (census), namely all members of the population are sampled (Sugiyono, 2020). Data collection was carried out using a closed questionnaire with a Likert scale of 1–5. The questionnaire was distributed directly (personal-administered) by approaching respondents and asking for their willingness to fill in. This technique was chosen to ensure data validity and maximize response rates. This study was conducted to examine the influence of competence and training on employee performance through work motivation in supporting the acceleration of budget absorption and state financial reform.

The data analysis technique used in this study is SEM PLS using an analysis tool in the form of SmartPLS with several assessment indicators including: 1. Outer model and 2. Inner model (Ghozali & Latan, 2015). Where for the outer model, it consists of: Outer loading, AVE, discriminant validity (Fornell Larckers and HTMT) and reliability test consisting ofcronbach alpha And composite reliable. For the inner model, it consists of: R square, Q square, model of fit, hypothesis test to mediation test.

3. RESULTS AND DISCUSSION
3.1. Respondents Profile

The respondent profile in this study amounted to 105 people and is presented in the following table :

Table 1. Respondents Profile

No.	Gender	Frequency	Percentage
1	Male	58	55.24%
2	Female	47	44.76%
No.	**Age**	**Frequency**	**Percentage**
1	20 - 30 years	26	24.76%
2	31 - 40 years	42	40.00%
3	41 - 50 years	24	22.86%
4	➤ 50 years	13	12.38%
No.	**Educational background**	**Frequency**	**Percentage**
1	SLTA	17	16.19%
2	D1 – D3	11	10.48%
3	S1	72	68.57%
4	S2	5	4.76%
No.	**Grade**	**Frequency**	**Percentage**
1	Grade IV	4	3.81%

2	Grade III	78	74.29%
3	Grade II	23	21.90%
No.	**Years of service**	**Frequency**	**Percentage**
1	1 – 5 years	33	31.43%
2	6 – 10 years	41	39.05%
3	11 – 15 years	15	14.29%
4	16 – 20 years	11	10.48%
5	> 21 years	5	4.76%
No.	**Participating in Training Activities**	**Frequency**	**Percentage**
1	< 3 training	33	31.43%
2	> 4 training	72	68.57%

3.2 Reliability Test

For the reliability test in this study, 2 measuring instruments were used, which are composite reliability (CR) and Cronbach's alpha (CA). The results show all values are > 0.7, which means that all variables in this study are reliable.

Table 2. CA and CR test

Construct Reliability and Validity	Cronbach's Alpha	Composite Reliability
Employee Performance (Y)	0.959	0.963
Job Training (X2)	0.940	0.947
Work Competency (X1)	0.911	0.926
Work motivation (Z)	0.906	0.921

Source: processed data

The results of the data processing above show that the results of this study are valid and reliable, so that it can be continued for further data processing calculations using several measuring instruments in this study.

3.3 Validity Test

Below are the results of data processing for the validity of research results from the aspect ofouter loading presented in the table below, where all indicator values areouter loading in this research variable > 0.7 where this result shows valid results.

Table 3. Outer Loading

Outer Loading	Employee Performance (Y)	Job Training (X2)	Work Competency (X1)	Work motivation (Z)
X1.1			0.747	
X1.10			0.701	
X1.2			0.784	
X1.3			0.753	
X1.4			0.766	
X1.5			0.756	
X1.6			0.754	
X1.7			0.742	
X1.8			0.741	
X1.9			0.706	
X2.1		0.728		
X2.10		0.704		

Outer Loading	Employee Performance (Y)	Job Training (X2)	Work Competency (X1)	Work motivation (Z)
X2.11		0.763		
X2.12		0.758		
X2.13		0.720		
X2.14		0.727		
X2.15		0.751		
X2.2		0.709		
X2.3		0.718		
X2.4		0.754		
X2.5		0.741		
X2.6		0.759		
X2.7		0.745		
X2.8		0.743		
X2.9		0.724		
Y1.1	0.799			
Y1.10	0.768			
Y1.11	0.795			
Y1.12	0.800			
Y1.13	0.786			
Y1.14	0.820			
Y1.15	0.801			
Y1.2	0.776			
Y1.3	0.786			
Y1.4	0.808			
Y1.5	0.799			
Y1.6	0.808			
Y1.7	0.809			
Y1.8	0.786			
Y1.9	0.797			
Z1.1				0.732
Z1.10				0.709
Z1.2				0.743
Z1.3				0.714
Z1.4				0.720
Z1.5				0.710
Z1.6				0.767
Z1.7				0.740
Z1.8				0.783
Z1.9				0.709

Source: processed data

Below are the results of data processing from the AVE value aspect, where the results show that all variables in this study have an AVE value > 0.5, where the results are valid.

Table 4. AVE test

Construct Reliability and Validity	Average Variance Extracted (AVE)
Employee Performance (Y)	0.633
Job Training (X2)	0.542
Work Competency (X1)	0.556
Work motivation (Z)	0.537

Source: processed data

For further validity measurements in this study, this study assessed HTMT aspects where the value of each variable was <0.9, which means the results are valid.

Table 5. Discriminant Validity - HTMT test

Heterotrait-Monotrait Ratio (HTMT)	Employee Performance (Y)	Job Training (X2)	Work Competency (X1)
Job Training (X2)	0.602		
Work Competency (X1)	0.176	0.422	
Work motivation (Z)	0.219	0.254	0.302

Source: processed data

To measure discriminant validity, this study also used Fornell Larcker where the results show that each variable has a higher value compared to the value of the other variables so that the results are valid.

Table 6. Fornell Larcker test

Fornell-Larcker Criterion	Employee Performance (Y)	Job Training (X2)	Work Competency (X1)	Work motivation (Z)
Employee Performance (Y)	**0.796**			
Job Training (X2)	0.582	**0.737**		
Work Competency (X1)	0.154	0.390	**0.745**	
Work motivation (Z)	0.218	0.248	0.301	**0.733**

Source: processed data

3.4. Inner Model

The following is the result of data processing in the form of a model in this study. Where this is done after carrying out the stages of discriminant validity and reliability, then the process is carried out boothstrapping in data processing in this study
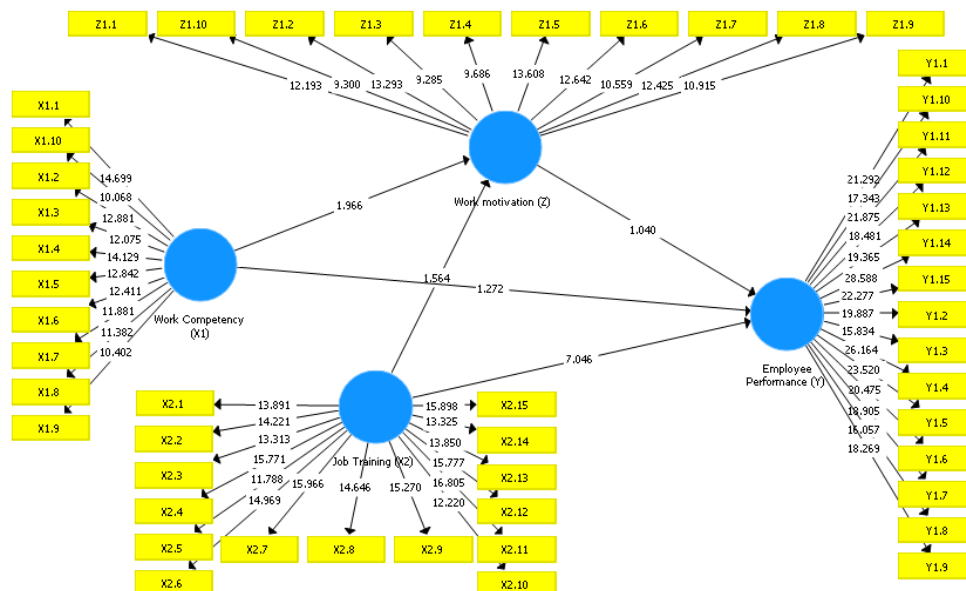
Figure 3. Inner Model

The calculation result for R square in this study is 0.355 or 35.5% for variable Y and 0.111 or 11.1% for variable Z. This shows that performance is influenced by competence and

training by 35.5% and motivation is influenced by competence and training by 11.1%. From these results, it is known that performance and motivation are influenced by other variables outside of competence and training, namely 53.4%. The Q square result is an indication that the model has predictive relevance, meaning that the model can predict endogenous variables well. The result for variable Y is 0.211 and variable Z is 0.041 where both have values > 0.00.

Table 7. R Square (R^2) and Q Square (Q^2) test

	R^2	Adjusted R^2	Q^2 (=1-SSE/SSO)
Employee Performance (Y)	0.355	0.336	0.211
Work motivation (Z)	0.111	0.093	0.041

Source: processed data

The following are the results of the values goodness on fit model by using the SRMR indicator where the results are said to be good if the value is <0.08. With the SRMR result of 0.078, it illustrates goodness on fit model in this study is good.

Table 8. Model goodness of fit

Goodness of Fit Model	Estimated Model
SRMR	0.078

Source: processed data

3.5 Hypothesis Testing

The results of the hypothesis test in this study can be seen from the magnitude of the calculated t value as follows:

Table 9. Hypothesis Testing

Path Coefficients	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Job Training (X2) -> Employee Performance (Y)	0.600	0.615	0.085	7.046	0.000
Job Training (X2) -> Work motivation (Z)	0.154	0.163	0.098	1.564	0.118
Work Competency (X1) -> Employee Performance (Y)	-0.111	-0.105	0.087	1.272	0.204
Work Competency (X1) -> Work motivation (Z)	0.241	0.263	0.123	1.966	0.050
Work motivation (Z) -> Employee Performance (Y)	0.103	0.098	0.099	1.040	0.299

Source: processed data

a. H1: t count of competency variable on performance is 1.272 with a significance value of 0.204. Thus, the t count value of 1.272 < t table of 1.984 and the significance value of 0.204 > 0.05, which means that competency does not have a significant effect on performance, so H1 in this study is rejected.

b. H2: t count of training variable on performance is 7.046 with a significance value of 0.000. Thus, the t count value of 7.046 > t table of 1.984 and the significance value of 0.000 < 0.05, which means that training has a significant effect on performance so that H2 in this study is accepted.

c. H3: t count of motivation variable on performance is 1.040 with a significance value of 0.299. Thus, the t count value of 1.040 < t table of 1.984 and the significance value of 0.299 > 0.05, which means that motivation does not have a significant effect on performance, so H3 in this study is rejected.

d. H4: t count of competence variable on motivation is 1.966 with a significance value of 0.050. Thus, the t count value of 1.966 < t table of 1.984 and the significance value of 0.050 < 0.05, which means that competence has no effect but is significant on motivation so that H4 in this study is rejected.

e. H5: t count of training variable on motivation is 1.564 with a significance value of 0.118. Thus, the t count value is 1.564 < t table of 1.984 and the significance value is 0.118 < 0.05, which means that training does not have a significant effect on motivation, so H5 in this study is rejected.

f.

3.6 Mediation Test

The following is a continuation of the hypothesis test above using variable Z as a mediating variable. The results below show that variable Z is not a mediating variable between competence and performance or training and performance. This is evidenced by the significant value between competence and performance of 0.404 > 0.05 and the significant value between training and performance of 0.450 > 0.05. With these results, H6 and H7 in this study are rejected.

Table 10. Mediation Test

Specific Indirect Effects	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Job Training (X2) -> Work motivation (Z) -> Employee Performance (Y)	0.016	0.017	0.021	0.756	0.450
Work Competency (X1) -> Work motivation (Z) -> Employee Performance (Y)	0.025	0.024	0.030	0.836	0.404

Source: processed data

H1 : Competence (X1) has a significant direct influence on performance (Y)

The results of the study showed that competence had no positive and insignificant effect on performance. Thus, H1 in this study **rejected**. These results are in line with several previous studies (Padli & Hehanussa, 2023; Radista & Edalmen, 2024; Salvano et al., 2023; Supiyanto, 2015). Although competence is one of the important factors in an organization, the results of the study show that increasing competence has not been able to directly encourage increased performance of SATKER KPPN Pamekasan employees in order to accelerate budget absorption. Although competence is considered important, these results show that increasing the technical competence of SATKER KPPN Pamekasan treasurers alone is not enough to improve performance. This can be caused by a mismatch between the competence possessed and actual work demands or a lack of opportunity to apply competence optimally. Therefore, organizations need to review the form of competence development provided to be more applicable and relevant to task needs. Increasing competence through formal education, technical certification, or work experience will help employees achieve optimal work output in accordance with organizational targets.

H2 : Training (X2) has a significant direct effect on performance (Y)

The results of the study showed that training had a positive and significant effect on performance. Thus, H2 in this study accepted. These results are in line with several previous studies (Fajriansyah, 2021; Hendrianto et al., 2023; Putri & Irawanto, 2013; Tanjung & Septiyawati, 2025). The training provided to the treasurers of the Pamekasan KPPN SATKER has proven effective in improving their performance so that training can be a strategic intervention in supporting financial management and accelerating budget realization. This finding confirms that the training provided to the Pamekasan KPPN SATKER treasurers has a direct contribution to improving performance, especially in the budget absorption process. Therefore, the government needs to routinely hold structured training that is relevant to the development of financial systems and is based on practices such as technical training, state financial workshops or information system technical guidance to encourage efficiency and accuracy in the implementation of administrative tasks and public services. Training also needs to be evaluated for its impact on work so that it is more targeted.

H3 : Motivation (X3) has a significant influence on performance (Y)

The results of the study showed that motivation had no positive and insignificant effect on performance. Thus, H3 in this study rejected. These results are in line with several previous studies (Ernawati et al., 2023; Firya & Sucipto, 2025; Herawati & Ermawati, 2020; Nadira et al., 2022). Internal employee motivation is not strong enough to improve the performance of SATKER KPPN Pamekasan if it is not supported by a supportive work system, incentives or work environment. Work motivation that does not have a significant influence on performance indicates the possibility that external factors such as strict regulations, limited resources or bureaucracy are obstacles to the actualization of motivation in the form of performance in the scope of SATKER KPPN Pamekasan. This indicates the need for improvements to the work system and supportive work environment so that motivation can truly be actualized in better work results. Motivation can be increased through a reward system, recognition of performance and the creation of a supportive work environment. This is important to encourage SATKER KPPN Pamekasan employees to exceed their performance targets.

H4 : Competence (X1) has a significant indirect influence on motivation (Z)

The results of the study showed that competence did not have a positive but significant effect on motivation. Thus, H4 in this study rejected. These results are in line with several previous studies (Djalip et al., 2024; Dliya'uddin et al., 2024). Competence can increase employee work motivation, but this motivation does not have a significant impact on the performance of the Pamekasan KPPN SATKER. This shows a gap between increasing motivation and realizing optimal performance of the Pamekasan KPPN SATKER. These results mean that increasing competence can actually encourage employee work motivation even though it does not directly increase performance. This means that Pamekasan KPPN SATKER employees who feel competent tend to have a higher work motivation. However, in order for this motivation to have a real impact on performance, support is needed from a balanced work system, policies and rewards.

H5 : Training (X2) has a significant indirect effect on motivation (Z)

The results of the study showed that training had no positive and insignificant effect on motivation. Thus, H5 in this study rejected. These results are in line with several previous studies (Nurhayat & Wahyuni, 2021; Yunior, 2018). The training in the scope of KPPN Pamekasan has not been able to improve employee work motivation as a whole. This can be

caused by the form of training that is less participatory or does not suit individual needs. The training provided has not been able to improve the work motivation of SATKER KPPN Pamekasan. This can happen if the training is considered only as an administrative obligation or does not suit individual needs. Therefore, it is necessary to evaluate the quality of training, delivery methods and strengthening psychological aspects such as recognition and post-training support. Training programs such as state financial technical training or digital application management encourage SATKER KPPN Pamekasan employees to be more enthusiastic, feel cared for by the organization and be more motivated in carrying out their duties.

H6 : Motivation (Z) is a mediating variable between competence and performance
The results of the study indicate that motivation does not mediate the competence variable on performance. Thus, H6 in this study rejected. These results are in line with several previous studies (Rusdiana et al., 2023; Wanma et al., 2023). Motivation variables are unable to act as intermediaries in bridging the influence of competence on improving employee performance. The inability of motivation as a mediating variable indicates that increasing competence has not been able to optimally drive the motivation of SATKER KPPN Pamekasan to produce high performance. This emphasizes the importance of other interventions such as incentive systems, work environment and leadership style, so that motivation can play a more effective role in improving the performance of SATKER KPPN Pamekasan.

H7 : Motivation (Z) is a mediating variable between training and performance
The results of the study indicate that motivation does not mediate the training variable on performance. Thus, H7 in this study rejected. This result is in line with several previous studies (Ernur et al., 2014; Hemaputra, 2024). Motivation variables are unable to act as intermediaries in bridging the influence of training on improving employee performance. The inability of motivation as a mediating variable indicates that increasing training has not been able to optimally drive the motivation of SATKER KPPN Pamekasan to produce high performance. This emphasizes the importance of other interventions such as incentive systems, work environment and leadership style, so that motivation can play a more effective role in improving the performance of SATKER KPPN Pamekasan

4. CONCLUSION
Based on the results of the research that has been conducted on the influence of competence, training, and motivation on employee performance in supporting the acceleration of budget absorption in the Work Unit (SATKER) in the Pamekasan KPPN work area, several things can be concluded as follows: 1. Direct influence, competence variables (X1) and motivation (Z) do not have a positive and insignificant effect on performance (Y) while for the training variable (X2) it has a positive and significant effect on performance (Y); 2. Indirect influence, competence variables (X1) do not have an effect but are significant on motivation (Z) and for the training variable (X2) it does not have a significant effect on motivation (Z); 3. The results of the mediation test indicate that motivation does not mediate the relationship between competence and training on performance.

Based on the research results and conclusions that have been described, the following suggestions are proposed for future improvements and developments, including:

1. **Improving the quality of employee training**

    The results of the study indicate that the training variable (X2) has a positive and significant influence on the performance (Y) of SATKER KPPN Pamekasan

employees. This means that the better the quality and effectiveness of the training given to employees, the higher the performance produced. Therefore, improving the quality of training is the main strategy that has the most direct impact on improving employee performance. Training that is more applicable, oriented to work needs and based on real competencies will provide maximum results.

2. **Evaluation and development of work motivation systems**
   Although motivation (Z) does not have a direct and significant effect on performance, the results of the study show that competence (X1) has a significant effect on motivation, although not on performance. This indicates that employee motivation still has an important role in the organizational structure, but the current system is not strong enough to be a performance driver. Therefore, an evaluation of the motivation system (eg: incentives, rewards, work environment, or career development) needs to be carried out, to find and implement a more effective approach so that motivation can be a catalyst for future performance.

3. **Periodic technical assistance**
   The results of the study showed that competence did not have a significant direct effect on performance. This could be caused by a gap between the competence possessed and the demands of the work that continue to develop. Technical guidance carried out periodically can help bridge this gap. With regular bimtek, employees can hone the latest technical skills, understand the latest regulations, and synchronize competence with daily operational needs, which ultimately supports increased work effectiveness..

4. **Strengthening competencies that are integrated with managerial aspects.**
   Competence does not directly have a significant effect on performance, but has an effect on motivation. This shows that the current competencies do not fully cover strategic or managerial aspects that can drive performance. Most likely, the competencies in question are still purely technical. Therefore, it is necessary to strengthen competencies that are not only technical, but also include managerial, leadership and decision-making aspects. This comprehensive competency will strengthen the role of individuals in the organization and indirectly drive motivation and work productivity.

4.2 Implications/ Limitations and Suggestions for Further Research

This study has several limitations that need to be considered in interpreting the results. First, the scope of the study only covers the Regional Work Unit (SATKER) in the Pamekasan KPPN work area, so that the findings obtained cannot be generalized widely to other regions or agencies with different characteristics. Second, the motivation variables in this study were measured generally without grouping specific dimensions such as intrinsic and extrinsic motivation, which have the potential to affect the results of the analysis. Third, from a technical aspect, data analysis was carried out quantitatively using a regression model and mediation test, but was not accompanied by a qualitative approach that could enrich understanding of the empirical context in the field. In addition, limitations in the number of samples and data collection techniques through questionnaires have the potential to cause bias in respondent perceptions.

From these limitations, the researcher provides several recommendations for further researchers, including: 1. Expanding the scope of the research area; 2. Grouping motivation variables into more specific dimensions, for example intrinsic and extrinsic motivation or considering replacing them with contextual factors and organizational culture variables; 3.

Using a mixed methods approach; 4. Increasing the size and sampling techniques; 5. Diversifying data collection techniques.

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TRUMP TARIFF ON INDONESIA STOCK EXCHANGE. DOES THE MARKET RECOVER ONE MONTH AFTER THE ANNOUNCEMENT?

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Abstract - This study examines the Indonesian stock market's reaction to the U.S. tariff announcement on April 1, 2025. The Indonesian Stock Market tends to overreact to the Trump Announcement. This paper presents the latest empirical findings on the effect of the Trump Tariff announcement, made immediately after the market reopened following a long holiday and a month after the event. Employing an event study methodology, the research analyses abnormal returns of 782 listed firms using the Capital Asset Pricing Model (CAPM) to estimate expected returns. The analysis focuses on two critical points: April 8th 2025, when the market reopened after the announcement, and April 30th, the end of the post-event window. The findings reveal a significant negative abnormal return immediately after the market reopened, followed by a strong positive abnormal return at the end of the month. A paired-sample test confirms a statistically significant difference in abnormal returns between these two periods. Cross-sectional analysis across beta tertiles shows that systematic risk levels influenced investor reactions, with low-beta stocks experiencing the most pronounced reversal. These results highlight the sensitivity of emerging markets to global policy shifts and underscore the importance of risk exposure in shaping investor behaviour.
Keywords: Event Studies; Tariff Effect; Abnormal Return; Efficient Market Hypothesis; Policy Spilover

1. INTRODUCTION
1.1 Research Background

In recent years, trade tensions, protectionist policies, and geopolitical uncertainty have increasingly shaped the global economic landscape. A prominent example of this trend was the trade stance adopted by Donald Trump during his presidency in 2025, which continued into his subsequent political narrative, marked by a series of tariff announcements targeting major global economies. The existing literature has examined the impact of U.S. tariff policies on developed markets and direct trading partners such as China (Fajgelbaum & Khandelwal, 2022). The potential spillover effects on emerging economies, particularly through investor sentiment and financial markets, remain underexplored.

Capital markets are susceptible to macroeconomic policy announcements, especially those perceived to influence international trade dynamics (Andritzky et al., 2007). The specific macroeconomic announcements have a significant influence on the jump intensity in stock markets, highlighting the market's sensitivity to such news and affecting stock market behaviour (Kiriu & Hibiki, 2024; Rangel, 2011). Announcements such as tariff hikes can introduce policy uncertainty, alter global demand and supply chain expectations, and shift investor risk perception, particularly in globally integrated markets. In this context, financial

markets in emerging economies like Indonesia may exhibit measurable reactions to global policy signals, even when not directly targeted.

While the impact of tariff announcements on global capital markets has been widely studied, the focus has predominantly centred on developed economies or direct trade partners such as China. In contrast, empirical evidence on how emerging markets respond to the latest Trump Announcement remains relatively sparse, particularly in the short term. This is especially true in Southeast Asia, where capital markets are increasingly integrated yet still subject to local economic frictions and investor behaviour unique to the region. Moreover, most prior studies have treated markets as homogeneous entities, with limited attention to cross-sectional variations in systematic risk exposure. The role of beta, as a proxy for a stock's sensitivity to market movements, has rarely been explored as a moderator in event-driven reactions within emerging markets like Indonesia. This gap is notable given that investors with differing risk appetites may respond asymmetrically to the latest Trump announcements, such as tariff impositions.

This study aims to address these gaps by investigating how the Indonesian stock market responded to Donald Trump's April 1st, 2025, tariff announcement. In particular, it examines whether the event generated statistically significant abnormal returns and whether these responses varied across beta-tiered stocks. This provides insight into the differential sensitivity of high and low-risk assets. To address these aims, the study is guided by the following research questions:

1. Did significant abnormal returns occur when the Indonesian market reopened after the April 1st 2025 tariff announcement?
2. Was there a statistically significant change in abnormal returns between the start (April 8th 2025) and end (April 30th 2025) of the post-announcement period?
3. Did the abnormal return response to the tariff announcement differ across stocks grouped by their levels of systematic risk (beta tertiles)?

This study contributes to the literature in several ways. First, it adds to the growing but still limited body of empirical research on how emerging markets respond to the latest international policy shocks, particularly under short-term conditions. Second, unlike previous event studies that treat the market as a homogeneous entity, this paper introduces a cross-sectional dimension by examining how stock-level risk exposure moderates the market reaction. Third, the paper incorporates a paired comparison approach to capture investor sentiment at two critical points: immediately after the market reopened and at the end of the month, offering insights into both immediate and delayed responses to global policy signals. These findings provide a nuanced understanding for investors, policymakers, and academics interested in the intersection of international trade policy and financial market behaviour in emerging economies.

1.2 Tariff Announcement and Stock Market Reaction

Tariff announcements, especially those initiated by major economies like the United States, are among the most influential trade policy shocks that can trigger global market responses. Prior literature consistently demonstrates that capital markets are highly responsive to such announcements due to their direct and indirect implications for corporate earnings, supply chains, investor confidence, and international relations.

A key body of research has examined the U.S. and China trade war, highlighting how tariff escalation periods were associated with increased volatility, pricing inefficiencies, and shifts in risk perception. U.S. tariffs were passed to domestic consumers and importers,

reverting cost shocks across supply chains (Amiti et al., 2019). Similarly, China's stock market experienced negative abnormal returns in response to U.S. tariff impositions, particularly in sectors reliant on foreign trade (Shi et al., 2021). These findings indicate that markets often interpret tariff announcements as signals of economic friction and rising uncertainty.

In addition to direct trade partners, there is growing recognition that emerging markets can also be impacted, even when not explicitly targeted. The U.S.-China trade war increased return and volatility connectedness across markets, with particularly pronounced effects in downside conditions (Bissoondoyal-Bheenick et al., 2022). Countries with trade deficits, those directly subjected to tariff impositions, showed muted and mixed market reactions, indicating that investors may have already anticipated trade tensions or expected a policy reversal. In contrast, trade-surplus countries exhibited significant positive cumulative average abnormal returns (CAARS), suggesting investor optimism regarding potential benefits from trade diversion or reallocation (Rao et al., 2025). This indicates that even non-targeted emerging markets like Indonesia may experience sentiment-driven spillovers from global policy announcements.

However, much of the existing literature focuses on broad market indices or specific sectors, and rarely accounts for the cross-sectional heterogeneity among stocks. The role of firm-level characteristics, particularly systematic risk (beta), in moderating market response to trade policy shocks remains underexplored. This gap is particularly relevant in emerging markets, where investor behaviour may differ due to thinner markets, more substantial sentiment effects, and greater sensitivity to global cues.

2. RESEARCH METHODOLOGY
2.1 Methodology

This study adopts a quantitative, event-study approach to examine the impact of Donald Trump's April 1st 2025, tariff declaration on the Indonesian stock market. The research design assumes that financial markets respond quickly to new information and that such reactions can be captured by analysing abnormal returns surrounding the event window. The event study methodology is well-suited for assessing how investors reassess asset values in response to discrete, unanticipated events. In this case, the Indonesian market was closed during the announcement and reopened on April 8th, providing a clean post-announcement observation window. The study estimates monthly abnormal returns representing the post-announcement market response. To strengthen the findings' robustness, the study compares these abnormal returns with those observed before the event (captured through a return window ending on April 8). It classifies stocks into beta tertiles to detect heterogeneous responses based on systematic risk exposure. The Capital Asset Pricing Model (CAPM) estimates expected returns, allowing abnormal returns to be isolated and interpreted as market reactions to the announcement. Overall, the research design integrates cross-sectional analysis, pre- and post–event comparison, and risk segmentation, aligning with established practices in financial event studies while tailoring the framework to an emerging market context.

2.2 Data Collection

The study utilises secondary data comprising stock prices, market indices, and financial indicators for 782 companies listed on the Indonesia Stock Exchange (IDX). The selection of firms is based on data availability, with only those stocks for which return and beta data could be reliably retrieved included in the analysis. The primary period of interest spans from April 8 to April 30, 2025, representing the post-announcement window following the U.S. tariff policy disclosure on April 1st, 2025. Since the Indonesian market was closed during the

announcement (April 1–7 2025), April 8th 2025 marks the first trading session that could reflect investor reaction.

Daily stock prices were obtained from IDX, while Yahoo Finance provided the 5-year monthly beta estimates used to calculate expected returns under the CAPM framework. The Jakarta Composite Index (IHSG) proxied the market return, and the risk-free rate was based on the Bank Indonesia 7-Day Reverse Repo Rate (BI7DRR), converted to a monthly equivalent for consistency with the beta frequency. Stock prices were adjusted for corporate actions such as stock splits or dividends where appropriate. Based on their CAPM beta values, firms were classified into three beta tertiles: low, medium, and high systematic risk to facilitate comparative and cross-sectional analysis. This classification enabled the study to assess whether investor responses to the announcement varied depending on the stock's risk profile.

2.3 Variable and Measurement

Two actual returns are measured based on the stock price from the beginning of March 2025 (March 3rd, 2025), the day of the first trading day after the Trump announcement (April 8th, 2025), and the post-event on April 30th, 2025. Each stock return is calculated using Equation 1.

$$R_i = \frac{P_t - P_0}{P_0} \qquad \ldots\ldots\ldots \text{Equation (1)}$$

The expected return is estimated using CAPM. This paper estimates it monthly using monthly beta, market return, and risk-free rate. The expected return is calculated using Equation 2.

$$E(R)_i = R_F + \beta_i(R_M - R_F) \ldots\ldots\ldots \text{Equation (2)}$$

The abnormal return is the difference between actual and expected returns. This value indicates whether a stock's performance deviated positively or negatively from the market-based benchmark during the event period. The abnormal return is calculated based on Equation 3.

$$AR_i = R_i - E(R)_i \ldots\ldots\ldots \text{Equation (3)}$$

To examine the role of systematic risk in moderating market responses, firms are classified into three beta tertiles, where each tertiles account for 33% of the research sample. This grouping facilitates cross-sectional analysis of abnormal return behaviour across different levels of risk exposure. The classification of the beta tertile is:

- Tertile 1 (Low Beta): Stocks with the lowest one-third of beta values
- Tertile 2 (Moderate Beta): Middle third
- Tertile 3 (High Beta): Highest third, representing risk-sensitive assets

2.4 Hypothesis Development and Data Analysis

According to the semi-strong form of the Efficient Market Hypothesis, stock prices should incorporate all publicly available information, including policy announcements (Fama, 1970). Market reaction to policy announcements can provide insights into the welfare effects of these decisions, which can be reflected in abnormal returns (Beigi & Budzinski, 2013; Pandey & Kumari, 2021). When markets reopen after a major geopolitical or economic shock, such as a tariff imposition, investors adjust their expectations, often resulting in abnormal returns. Prior research shows that trade-related news can trigger either negative or positive market responses depending on perceived economic impact, investor sentiment, and market

anticipation(Amiti et al., 2019; Bissoondoyal-Bheenick et al., 2022). Given the market closure on April 1–7, any price adjustment is expected to be reflected when the market reopens on April 8th.

> H1: Following the tariff announcement, the Indonesian stock market exhibited statistically significant monthly abnormal returns on April 8th and April 30th, 2025.

Market reactions may evolve beyond the initial shock period. The delayed response hypothesis suggests that markets may not fully price new information immediately, particularly in emerging markets with lower liquidity or when the news is ambiguous (Barberis et al., 1997; Kiky, 2020). A comparison between April 8 and April 30 returns allows for detecting whether investor sentiment, confidence, or interpretation of the policy announcement shifted throughout the post-event window.

> H2: Monthly abnormal returns on April 30th will be higher than those on April 8th, indicating a change in market perception one month after the announcement.

Under CAPM, beta measures a stock's exposure to systematic market risk. High-beta stocks are more volatile and sensitive to macroeconomic and political events, while low-beta stocks are more defensive. Empirical studies show that high-beta stocks react more strongly during economic shocks or uncertainty, often amplifying market responses (Benou & Richie, 2003; Choudhry, 2005). This study tests whether abnormal returns differ across beta tertiles, suggesting a heterogeneous investor response conditioned by risk exposure.

> H3: There is a significant difference in abnormal returns across beta tertiles, with high-beta stocks exhibiting stronger market reactions to the tariff announcement.

To test the proposed hypotheses, this study employs a combination of descriptive statistics and inferential statistical tests on calculated abnormal returns. To address Hypothesis 1, a one-sample t-test is conducted to determine whether abnormal returns on April 8 and April 30, 2025, differ significantly from zero, indicating market reaction to the tariff announcement. For Hypothesis 2, a paired-sample t-test compares abnormal returns between the start and end of the post-announcement window, assessing whether investor sentiment shifted over time. Lastly, Hypothesis 3 is tested using the ANOVA test to compare abnormal return distributions across the three beta tertiles. These methods collectively enable a robust evaluation of immediate and cross-sectional market reactions to the event.

3. RESULT AND DISCUSSION

3.1 Descriptive Analysis

Table 1. Descriptive Result of Beta and Abnormal Return

Variables	Min	Max	Mean	Std Dev
Beta	-4.70	2.90	0.1895	0.6644
AR1	-0.87	0.98	-0.0502	0.1644
AR2	-0.42	1.79	0.0829	0.1966

Source: Author's work

The descriptive statistics provide a preliminary overview of the distribution of key variables used in the analysis, including beta values and abnormal returns before and after the tariff announcement. The average beta across all 782 stocks was 0.1895, with a standard deviation of 0.6644, suggesting a predominance of low-risk stocks in the sample. The beta

values ranged from -4.70 to 2.90, indicating substantial variation in systematic risk exposure. The detail can be seen in Table 1. Regarding abnormal return, the average abnormal return on April 8 (AR1), the first trading day after the announcement, was 0.0502, with a standard deviation of 0.1644, indicating a modestly negative market response upon reopening. In contrast, the average abnormal return on April 30 (AR2) was 0.0829, with a higher dispersion (std dev = 0.1966), suggesting a rebound in investor sentiment or partial price recovery by the end of the month.

Table 2. Abnormal Return based on Beta Tiers

Variables	AR1		AR2	
Beta Tier	Mean	Std Dev	Mean	Std Dev
Tier 1	-0.09	0.18	0.15	0.20
Tier 2	-0.05	0.14	0.07	0.19
Tier 3	-0.01	0.16	0.03	0.18

Source: Author's work

When disaggregated by beta tiers, the pattern becomes more nuanced as presented in Table 2. Stocks in Tier 1 (low beta) exhibited the most pronounced reversal, with a negative mean abnormal return of -0.09 on April 8, followed by a strong positive return of 0.15 on April 30. Stocks in Tier 2 (moderate beta) moved from -0.05 to 0.07, while those in Tier 3 (high beta) showed a more minor swing, shifting from -0.01 to 0.03. This pattern suggests that lower-risk stocks experienced sharper initial pessimism and stronger post-event optimism, while high-beta stocks were relatively stable throughout the observation window. These preliminary findings support that the market reaction to the Trump tariff announcement was time-dependent and risk-sensitive, laying the foundation for further inferential analysis.

3.2 Normality Test of Data Distribution

Table 3. Kolmogorov-Smirnoff Test Result

Indicators	AR1	AR2	NAR1	NAR2
Kolmogorov-S Test	0.124	0.130	0.003	0.003
P-Value	< 0.001	< 0.001	0.200	0.200

Source: Author's work

Before conducting parametric statistical tests, a normality assessment was carried out using the Kolmogorov-Smirnov (K-S) test for both raw abnormal return variables (AR1 and AR2). The results show that the original abnormal returns, AR1 and AR2, significantly deviate from normality, with p-values less than 0.001. This violates the normality assumption required for parametric tests. Therefore, the Box-Cox transformation was applied, and the raw abnormal return was transformed into NAR1 and NAR2, achieving p-values of 0.200, indicating that the transformed data followed a normal distribution. This confirms the appropriateness of parametric methods such as the one-sample t-test, paired t-test, and ANOVA in subsequent analyses. The normality correction ensures that statistical inferences from the data are valid and reliable.

3.3 Hypothesis Testing

Table 4. One Sample T-Test Result

Variables	Std Error	t	p-value (2-tail)	Mean difference
NAR1	0.00584	-8.592	< 0.001	-0.0502
NAR2	0.00699	11.865	< 0.001	0.0829

Source: Author's work

To test the first hypothesis, a one-sample t-test was conducted on the normalised abnormal returns (NAR1 and NAR2) to examine whether the market experienced statistically significant deviations from expected monthly return on the two key dates: April 8 and April 30, 2025. The results reveal a significant negative abnormal return on April 8 (mean = –0.0502, $t = –8.058$, $p < 0.001$), suggesting that the market initially reacted pessimistically upon reopening after the tariff announcement. This aligns with prior evidence that markets may price in uncertainty or overreact to protectionist policy news.

By contrast, the test for April 30 shows a significant positive abnormal monthly return (mean = 0.0829, $t = 11.323$, $p < 0.001$), indicating a substantial recovery in investor sentiment or adjustment in market valuation for the month. Both tests reject the null hypothesis that abnormal returns are zero, supporting Hypothesis 1 and confirming that the Trump tariff announcement generated a statistically significant reaction in the Indonesian stock market.

Table 5. Paired T-Test Result

Paired Test	Mean D	Std Dev	Std Error	t	p-value (1-tail)
NAR2 – NAR1	0.1326	0.29931	0.01072	12.379	< 0.001

Source: Author's work

A paired-sample t-test was conducted comparing normalised abnormal returns on NAR1 and NAR2 to assess whether there was a statistically significant change in market response over time. The results indicate a substantial difference between the two periods, with a mean difference of 0.1331, t-value of 14.297, and $p < 0.001$. This finding confirms that abnormal returns increased significantly from the initial post-announcement market reopening to the end of April. The result supports Hypothesis 2, indicating a strong recovery in investor sentiment or adjustment of risk expectations as the implications of the tariff announcement became clearer. It also suggests that the market may have initially overreacted or responded cautiously, only to rebound in the weeks following, consistent with the delayed reaction hypothesis often observed in emerging markets.

Table 6. ANOVA Test Between Beta Tier

Variables	F	P-Value
NAR1	33.061	< 0.001
NAR2	50.594	< 0.001

Source: Author's work

To examine whether the abnormal return response to the tariff announcement differed across risk levels, a one-way ANOVA followed by Tukey's HSD post hoc test was conducted using the normalised abnormal monthly return variables (NAR1 and NAR2). The results (Table 6) confirm statistically significant differences in abnormal monthly return across all three beta tertiles for both NAR1 and NAR2 observations ($p < 0.001$ for all pairwise comparisons).

Table 7. Post Hoc Tukey Test

Dependent Variable	(I) Tier	(J) Tier	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
						Lower Bd	Upper Bd
NAR2	1.00	2.00	0.09841*	0.01616	<0.001	0.0605	0.1364
		3.00	0.16051*	0.01608	<0.001	0.1227	0.1983
	2.00	1.00	-0.09841*	0.01616	<0.001	-0.1364	-0.0605
		3.00	0.06210*	0.01612	<0.001	0.0243	0.0999
	3.00	1.00	-0.16051*	0.01608	<0.001	-0.1983	-0.1227
		2.00	-0.06210*	0.01612	<0.001	-0.0999	-0.0243
NAR1	1.00	2.00	-0.05249*	0.01381	<0.001	-0.0849	-0.0201
		3.00	-0.11144*	0.01371	<0.001	-0.1436	-0.0792
	2.00	1.00	0.05249*	0.01381	<0.001	0.0201	0.0849
		3.00	-0.05895*	0.01375	<0.001	-0.0912	-0.0267
	3.00	1.00	0.11144*	0.01371	<0.001	0.0792	0.1436
		2.00	0.05895*	0.01375	<0.001	0.0267	0.0912

Source: Author's work

Table 7 presents the Post Hoc (Tukey) test. On NAR1, low-beta stocks (Tier 1) experienced significantly more negative abnormal monthly returns compared to both moderate-beta (Tier 2) and high-beta stocks (Tier 3), with mean differences of –0.05249 and –0.11144, respectively. High-beta stocks had the least negative abnormal monthly returns, indicating greater resilience or investor tolerance toward systematic risk during the initial shock.

NAR2 reverses this pattern. Low-beta stocks (Tier 1) generated significantly higher positive abnormal monthly returns than Tier 2 and Tier 3, with mean differences of 0.09841 and 0.16051, respectively. The consistent significance across all tier comparisons suggests that systematic risk levels meaningfully influenced investor behaviour, with low-beta stocks exhibiting a stronger rebound post-announcement. These results strongly support Hypothesis 3, indicating that stock response to the tariff announcement was not uniform, but varied significantly across levels of market sensitivity (beta).

3.4 Discussion

The results of this study provide strong evidence that the Indonesian stock market responded significantly to the tariff announcement made by Donald Trump on April 1st, 2025. The presence of abnormal monthly returns on April 8 and April 30, coupled with the significant difference between these two points, underscores the short-term volatility and recovery pattern triggered by international trade policy announcements. These findings align with the broader literature suggesting that capital markets react sharply to macroeconomic and geopolitical shocks, particularly when such events originate from major global economies (Bartholdy & Peare, 2003; Fama & French, 2004).

The initial negative abnormal return on April 8 supports the notion of investor uncertainty and pessimism immediately following the policy shock. This is consistent with studies by Amiti et al. (2019) and Shi et al. (2021), which document similar short-term market declines in response to U.S.–China trade tensions. However, the positive abnormal return observed on April 30 suggests that the market adjusted or reinterpreted the implications of the tariff announcement, potentially viewing it as less damaging or more sector-specific than initially feared. This supports behavioural finance perspectives, such as those proposed by Barberis et al. (1997), which argue that markets are prone to overreaction and delayed correction.

Recent research by Rao et al. (2025) reinforces this interpretation, showing that tariff announcements can induce immediate negative reactions and subsequent rebounds, especially when market participants recalibrate their expectations in light of global supply chain shifts.

Similarly, Bissoondoyal-Bheenick et al. (2022) emphasise the role of sentiment-driven spillovers, where investor mood and policy interpretation drive return connectedness across markets, effects observed in the recovery phase of the Indonesian market in this study.

The analysis of abnormal returns across beta tertiles revealed that systematic risk significantly moderates investor response. Low-beta stocks (Tier 1) initially experienced the most severe negative returns but also exhibited the strongest rebound, whereas high-beta stocks (Tier 3) showed more muted movement. This supports the hypothesis that less volatile assets are more susceptible to temporary overreaction and stronger reversals, a finding aligned with Benou & Richie (2003) and Choudhry (2005), who document beta-dependent volatility in emerging markets under economic stress. Gazilas (2025) also validates this cross-sectional behaviour. This shows that abnormal return intensity varies across risk exposure within affected sectors. The significant differences confirmed by Tukey's HSD test in this study further demonstrate that systematic risk is a key explanatory factor in understanding heterogeneous investor behaviour during policy-driven uncertainty.

The broader implication of this study is that emerging markets like Indonesia are not insulated from global economic policy decisions, even when not directly targeted. This paper provides additional empirical evidence that the Indonesian stock market is not a strong form. As highlighted in Bissoondoyal-Bheenick et al. (2022), tariff shocks originating from the U.S. can lead to significant spillover effects, particularly in markets with high external exposure. The positive return observed at the end of April may reflect investor repositioning and optimism about trade diversion opportunities, a phenomenon also supported by Rao et al. (2025) in their asymmetric market response framework. These findings contribute to a nuanced understanding of how short-term shocks evolve into medium-term realignments and stress the importance for investors and policymakers to monitor direct trade channels and the sentiment pathways that amplify or mitigate market reactions in non-targeted economies.

4. CONCLUSION
4.1 Conclusion

This study investigates the short-term market reaction of the Indonesian stock exchange to the U.S. tariff announcement by Donald Trump on April 1st, 2025. Employing an event study approach and using the Capital Asset Pricing Model (CAPM) to estimate expected returns, the research provides robust evidence that the announcement generated significant abnormal returns immediately after the market reopened and at the end of the month. These abnormal monthly returns reflect a clear pattern of initial market pessimism, followed by a notable recovery, indicating that investors reevaluated the announcement over time as its implications became clearer.

Furthermore, the analysis demonstrates that market reactions were not uniform across stocks. The systematic risk, measured by beta, moderated investor response. Low-beta stocks were more negatively affected immediately after the announcement but exhibited stronger positive reversals by the end of April. High-beta stocks, by contrast, remained relatively stable throughout the event window. This cross-sectional behaviour underscores the role of risk exposure in shaping investor decision-making during periods of policy uncertainty.

The findings have important implications. For investors, the results highlight the value of understanding systematic risk in navigating global policy shocks, particularly in emerging markets. For policymakers, the evidence suggests that even untargeted economies can experience financial spillovers from international trade actions, reinforcing the interconnectedness of global capital markets. Finally, for academics, this research contributes

to a growing literature on trade policy uncertainty, sentiment-driven market behaviour, and the heterogeneous effects of macroeconomic announcements.

Future research may expand this framework by incorporating firm-level fundamentals, sectoral analysis, or alternative models such as the Fama-French multifactor approach. Additionally, the behavioural component behind investor reactions, especially in emerging markets, warrants deeper exploration using sentiment indices or high-frequency data. Nonetheless, this study offers a timely and rigorous examination of how global trade tensions influence financial behaviour beyond immediate borders.

4.2 Limitation and Future Development

While this study provides valuable insights into how the Indonesian stock market responded to the April 2025 U.S. tariff announcement, several limitations must be acknowledged. First, the analysis relied on secondary data sources, including Yahoo Finance for stock returns and beta values, which may contain rounding or reporting discrepancies. Second, the study focuses solely on listed companies in the Indonesia Stock Exchange (IDX), excluding delisted or illiquid stocks that may also react to external shocks. Third, using the Capital Asset Pricing Model (CAPM) as the sole method for estimating expected return may not fully capture other risk factors relevant in emerging markets, such as size, value, or momentum effects. Although the CAPM offers simplicity and clarity, future research could employ multifactor models to enhance robustness.

The research examines only one event within a limited time frame, potentially overlooking longer-term reactions or the compounding effects of policy. Therefore, caution should be exercised when generalising the findings to other markets or events. Future studies could explore sectoral differences, integrate sentiment indices, or apply high-frequency data to capture intraday dynamics more precisely.

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THE INFLUENCE OF STORE ATMOSPHERE, ISLAMIC SERVICE QUALITY, AND TASTE ON CONSUMER LOYALTY OF MIE GACOAN WITH CONSUMER SATISFACTION AS AN INTERVENING VARIABLE

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Abstract - This study examines the influence of store atmosphere, Islamic service quality, and taste on customer loyalty at Mie Gacoan Salatiga, with consumer satisfaction as a mediating variable. The culinary industry is growing rapidly in Indonesia, and Mie Gacoan has become a popular brand. In Salatiga, Mie Gacoan holds a 4.6-star rating based on 3,022 reviews despite some negative feedback. The research uses a quantitative approach with purposive sampling, involving 100 respondents from Salatiga. The findings show that store atmosphere and Islamic service quality do not significantly influence consumer loyalty, while taste has a positive and significant impact. Store atmosphere also does not significantly affect consumer satisfaction, whereas Islamic service quality and taste positively and significantly influence satisfaction. Furthermore, consumer satisfaction significantly affects loyalty and mediates the relationship between Islamic service quality and loyalty. However, it does not mediate the influence of store atmosphere or taste on loyalty. The results suggest that Islamic service quality and taste are key to improving consumer satisfaction. Satisfied consumers are more likely to recommend the product, which enhances consumer loyalty and drives business growth.

Keywords: Store Atmosphere; Islamic Service Quality; Taste; Customer Satisfaction; Customer Loyalty.

1. INTRODUCTION
1.1 Background

Indonesia's food and beverage (F&B) industry has grown significantly over the past decade. This growth is driven by changing consumer lifestyles, increased urbanization, and a rising middle class with higher disposable incomes. One notable trend is the emergence of unique and affordable culinary brands that cater to younger consumers, such as Mie Gacoan , which has rapidly gained popularity among millennials and Gen Z due to its distinctive menu and competitive pricing. In Salatiga, for example, Mie Gacoan has received over 3,000 reviews with a high average rating, reflecting its strong consumer engagement despite some negative feedback.

However, sustaining customer loyalty is a critical challenge in a competitive market. Loyalty is not only influenced by the quality of the food itself but also by several other factors, including the store atmosphere, service quality, and overall customer satisfaction. In Muslim-majority countries like Indonesia, Islamic service quality—which incorporates ethical and Sharia-compliant principles—has become increasingly relevant in shaping consumer perceptions and behaviors. Studies suggest that such cultural and religious considerations play a vital role in the decision-making process of Muslim consumers (Randeree, 2019).

Furthermore, the *Theory of Planned Behavior* (Ajzen, 1991) provides a framework for understanding the intentions behind consumer loyalty. This theory posits that attitudes, subjective norms, and perceived behavioral control influence an individual's behavioral intentions, including their intention to remain loyal to a brand or service. In the context of F&B, a positive store atmosphere can enhance emotional attachment, Islamic service quality can increase trust, and food taste directly impacts satisfaction, which contributes to building loyalty.

Despite numerous studies on loyalty, limited research has examined the combined effects of these variables in the specific context of Islamic service quality within the Indonesian F&B industry. Additionally, the mediating role of customer satisfaction remains an area of interest. Satisfaction can bridge the gap between service perceptions and actual loyalty behavior, making it a key determinant in customer retention strategies (Kottler & G, 2005).

Given the dynamic nature of consumer preferences and the increasing demand for culturally relevant services, this study explores how store atmosphere, Islamic service quality, and taste influence customer loyalty at Mie Gacoan Salatiga, with customer satisfaction as a mediating factor. By investigating these relationships, the study aims to provide insights for F&B businesses to enhance customer experience and foster long-term loyalty.

The method used in this article is a quantitative study by testing regression and mediation tests. The test was carried out with SPSS software. This test is the right method to answer the questions in this study.

Based on the phenomena in the background, the problem formulation can be described as follows:

1. Does Store Atmosphere affect consumer loyalty?
2. Does Islamic service quality influence consumer loyalty?
3. Does taste affect consumer loyalty?
4. Does store atmosphere influence consumer satisfaction?
5. Does the quality of Islamic service affect consumer satisfaction?
6. Does taste influence consumer satisfaction?
7. Does customer satisfaction influence consumer loyalty?
8. Does store atmosphere have an effect on consumer loyalty through consumer satisfaction as a mediator?
9. Does Islamic service quality influence consumer loyalty through consumer satisfaction as a mediator?
10. Does taste influence consumer loyalty through consumer satisfaction as a mediator?

1.2 Literature Review
1.2.1 Theory Of Planned Behavior

Theory of Planned Behavior, namely Perceived Behavioral Control. So, the Theory of Planned Behavior has three things that cause individuals to behave, namely attitudes toward behavior (Attitude Toward The Behavior), Subjective Norms, and Perceived Behavioral Control (Alejos, 2017)

Some of the variables in this model are attitudes, subjective norms, behavioral control, and intentions (Jehane, 2019)

a. Attitude: A person's feelings towards something they like or dislike about an object or the object in question, such as the service provided, product, and other things.
b. Subjective Norms: A person's attitude towards purchasing products or services based on references to the surrounding environment.
c. Behavioral Control: A person's belief that ultimately carrying out a specific action, from this individual's belief, some factors hinder and factors that support the individual from carrying out that action.

1.3.2 Store Atmosphere

According to researchers, Store Atmosphere is the use of various elements such as visuals, lighting, color, music, and fragrance in environmental design to form emotional reactions and consumer perspectives, which ultimately encourage consumers to purchase the product (Levy & Weitz, 2001)

Several factors influence the Store Atmosphere, as stated by (Levy & Weitz, 2001), namely as follows:

a. Visual Communication (Visual Communication)
b. Lighting (Lighting)
c. Colors
d. Music (Music)
e. Scent (Aroma)

1.3.3 Islamic Service Quality

According to Abdul Qawi Othman (2001), Islamic service quality refers to a person's assessment of the quality of services provided by service providers who comply with ethical standards that align with Islamic teachings.

According to the opinion of Othman and Owen (Setiawati, 2019), Service Quality has several dimensions, namely:

1) Tangible
   Where a company or shop provides facilities that make visitors or consumers comfortable in that place.
2) Reliability
   Where the company or shop provides service promptly, on time, and with employee reliability in using the shop's tools.
3) Responsiveness
   The company or shop provides fast, responsible service.
4) Assurance
   The company or shop provides guarantees to customers, such as the quality of the products sold as promised and a guarantee of timely service.
5) Empathy
   Forms of attention to customers include providing information services and handling customer complaints.
6) Compliance
   Shop or company compliance in implementing Sharia principles, such as implementing halal service and product provisions.

1.3.4 Taste

According to Zulfa et al. (2022), taste is the final result formed after consumers consume food or drinks, and it arises from the combination of various senses during consumption.

There are several indicators of taste, according to (Maimunah, 2020), namely:

1) Smell

   One of the components in food or drink that gives a distinctive aroma to the food or drink.

2) Taste

   Taste can be determined by trying the food or drink through stimulation of the tongue, we can find out whether the food is spicy, whether the drink is sweet, and so on.

3) Oral Stimulation

   It is a feeling when someone has eaten or drunk a food or drink product so that it can stimulate the Taste buds.

1.3.5 Customer Satisfaction

Consumer satisfaction is a person's feeling of being happy or disappointed due to comparing the resulting impression of performance with the expectations they desire (Kotler & Keller, 2009)

There are several indicators of consumer satisfaction, according to Suwardi (Nuristiqomah et al., 2020), namely:

1) Repurchase
2) Creating Word of Mouth
3) Creating a Brand Image
4) Creating purchasing decisions at the same company

1.3.6 Customer Loyalty

Customer loyalty is the strength of the relationship between an individual's relative attitude towards an entity (brand, service, Store, or supplier) and repeat purchases (Selang, 2023)

There are several indicators of customer loyalty, according to (Inggil, 2013), namely:

1) Make regular repeat purchases.
2) Buy other products from the same manufacturer (Purchase across product and service lines).
3) Recommend other products (Refer to different ones).
4) Demonstrates immunity to the attraction of similar products from competitors (Demonstrates an immunity to the full of the competition).

1.4. Hypothesis Formulation

Store Atmosphere: When the store environment is pleasant, customers will feel comfortable and happy, which will make consumers spend more time in the Store and feel satisfied because they feel comfortable and as desired. If the store atmosphere is better, it will make consumers spend more time and want to return to the shop, increasing customer loyalty. This aligns with research from (B. Berman et al., 2018). It has a significant influence on customer loyalty. And according to research (B. Berman et al., 2018)

H1: Store Atmosphere has a significant effect on Customer Loyalty.

Islamic service quality: If the company continues to provide high-quality services that are based on Islam, customers, especially Muslims, will feel happy, and Muslim customers will be happier when their Sharia needs are met. If quality Islamic services are provided, especially for Muslim visitors, they will feel satisfied with the services provided per Islamic law. This is in line with research of Hakunta & Sujianto (2022) that states that Islamic service quality significantly influences customer loyalty.

H2: The quality of Islamic Service has a significant effect on Customer Loyalty

Taste is how a person chooses food or drink, distinguishing it from the taste of the food itself. Taste emerges from food or beverages, including its appearance, smell (aroma), taste, texture, and temperature. The influence of taste on consumer loyalty is evident because it affects products with a unique taste that consumers like. This is in line with research (Maimunah, 2020) and (Sari, 2018), who say that Sanya Cita Rasa has a significant and positive effect on customer loyalty.

H3: Taste has a significant effect on Customer Loyalty.

Store Atmosphere is when the Atmosphere of the Store makes customers happy. Customers will feel comfortable and happy, which results in consumers spending more time in the Store and feeling satisfied because it meets what consumers want. A store atmosphere that makes customers comfortable will create a sense of satisfaction so that it can make customers feel at home spending time in the Store. This is in line with research (Fauzi et al., 2022) and (Fauzi et al., 2022), which state that store atmosphere significantly affects consumer satisfaction.

H4: Store Atmosphere has a significant effect on Customer Satisfaction

Islamic service quality is an assessment made by customers regarding service delivery that is rooted in ethical principles and in line with the teachings established by Islamic law. The quality of the service is good, and the customer feels satisfied with it, so the customer will make a repeat purchase, stating that the customer is satisfied with the quality of the service provided. This is in line with research (Siagian et al., 2020) and (Fauzi et al., 2022), which states that Islamic Service Quality significantly influences Consumer Satisfaction.

H5: Islamic Service Quality has a significant effect on Customer Satisfaction.

Taste refers to a customer's choice of food or drink. Taste is a combination of elements such as visual appeal, fragrance, taste, texture, and temperature of the food or drink, all of which contribute to our overall senses. If customers like the taste of the shop, such as the aroma of the food, the appearance the shop gives, and the taste of the food, then the customer will feel satisfied with the shop. This aligns with research (Maimunah, 2020) and (Putri et al., 2021), which states that taste significantly affects consumer satisfaction.

H6: Taste has a significant effect on Customer Satisfaction.

Customer satisfaction is when a customer feels satisfied with a particular item or brand. They will tend to maintain loyalty, continue to subscribe to that product, and automatically share positive experiences with others when purchasing a product. If a customer is satisfied with a shop or company, the customer will repeat and buy a product. This aligns with research (Fauzi et al., 2022) and (Putri et al., 2021), which states that customer satisfaction significantly affects customer loyalty.

H7: Customer Satisfaction has a significant effect on Customer Loyalty.

Store Atmosphere can satisfy customers by providing a good atmosphere and a beautiful layout. That way, customers will be interested in returning and can create a sense of loyalty to the shop. With satisfaction with the Store Atmosphere, customers will be loyal to the Store. This is in accordance with research (Fauzi et al., 2022). Then researchers (Putri et al., 2021) stated that Customer Satisfaction has a positive and significant effect on Customer Loyalty.

H8: Store Atmosphere has a positive effect on loyalty through customer satisfaction.

Islamic service quality is a person's assessment of the services provided by ethical principles and the teachings established by Islamic law. When customers feel satisfied with the service provided, they can return to the shop, thereby giving customers an attitude of loyalty. Satisfaction with the quality provided can impact customer loyalty to the shop. This is in line with research (Siagian et al., 2020). Then, researchers (Fauzi et al., 2022) said consumer satisfaction has a positive and significant effect on customer loyalty.

H9: Islamic Service Quality Positively Affects Loyalty through Customer Satisfaction.

Taste refers to a customer's choice of food or drink. Customers can be attracted by elements such as visual appeal, fragrance, taste, texture, and food temperature, which ultimately make them feel satisfied and return. Satisfaction with the taste provided will have a positive impact on customer loyalty. This is in line with research (Maimunah, 2020) that shows that taste significantly positively affects satisfaction. Then, Hasibuan et al. (2022) believe customer satisfaction positively impacts customer loyalty.

H10: Taste Positively Affects Loyalty through Customer Satisfaction.

1.5. Research Framework
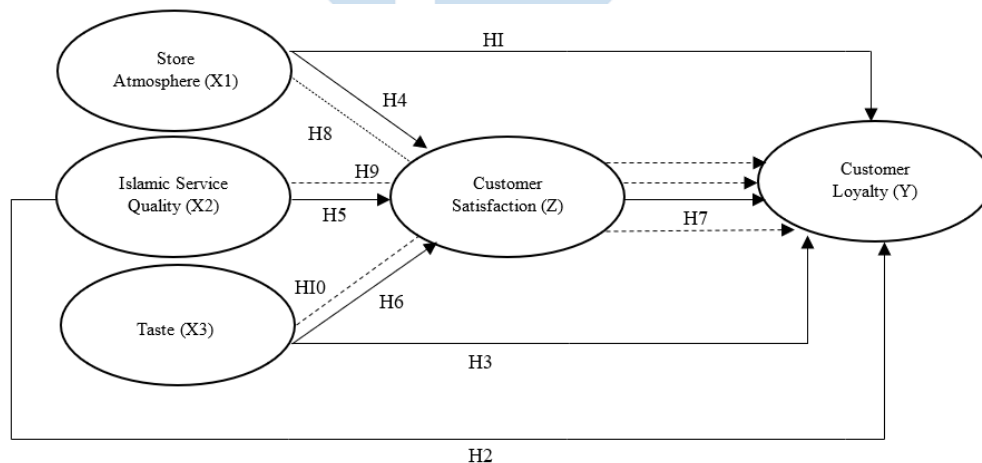
Figure 1.. Research Framework

2. Research Methodology

The population in this research is consumers who have made purchases at Mie Gacoan, the number of which has not been determined with certainty. When calculated using the Cochran formula, the number found was 96.04 respondents, but to make the data more relevant, the sample used 100 respondents. In this study, researchers used purposive sampling based on specific considerations and criteria, where the considerations in question are consumers who have made purchases at Mie Gacoan with appropriate criteria and can be used as a data source (Sugiyono, 2011).

This research uses primary data obtained from questionnaires distributed to Mie Gacoan consumers. Researchers developed this data, containing various questions aligned with indicators and research theory.

Likert is used to measure attitudes, arguments, and perceptions of individuals or groups regarding social phenomena determined by researchers, which are then called research variables. This research requires quantitative analysis, so each instrument item answer is given a score as follows: Strongly agree: 5, Agree: 4, Neutral: 3, Disagree: 2, Strongly disagree: 1.

The validity test measures the validity of the questionnaire or questionnaire data. The questionnaire is valid if the calculated r value > r table (Ghozali, 2018). The reliability test measures the reliability of the questionnaire. This test was measured using the Cronbach Alpha (α) statistical test. The data is reliable if the Cronbach Alpha value is > 0.70 (Ghozali, 2018).

3. Research Results
3.1 Respondent Profile

Table 1. Respondents Profile

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Man	34	34.0	34.0	34.0
	Woman	66	66.0	66.0	100.0
Age	<18 Year	19	19.0	19.0	19.0
	18-25 Year	57	57.0	57.0	76.0
	25-35 Year	24	24.0	24.0	100.0
Status	Student\Student	43	43.0	43.0	43.0
	PNS	6	6.0	6.0	49.0
	Swasta	25	25.0	25.0	74.0
	Entrepreneurial	10	10.0	10.0	84.0
	Farmer	3	3.0	3.0	87.0
	Other	13	13.0	13.0	100.0

The table above illustrates the gender distribution among respondents. 66 out of 100 respondents are women, while 34 are men. Therefore, it can be concluded that female respondents buy Mie Gacoan in Salatiga the most. Meanwhile, based on the table, there were 57 respondents aged 18-25, 24 respondents aged 25-35, and 19 respondents aged under 18 who have purchased Mie Gacoan. The table also illustrates the work of respondents who bought Mie Gacoan . The largest group were students or students, as many as 43 respondents, and civil servants, as many as six respondents. Private employment comprised 25 respondents, entrepreneurship to 10 people, and agricultural work to as many as three people. In addition, 13 respondents were categorized under "other" occupations.

3.2 Validity Test

Table 2. Validity Test

Variables	Indicators	Corrected Item Total Correlation	R table 5% (df=N-k=98)	Conclusion
Store Atmosphere (X1)	X1.1	,781	0,196	Valid
	X1.2	,780	0,196	Valid
	X1.3	,818	0,196	Valid
	X1.4	,867	0,196	Valid
	X1.5	,825	0,196	Valid
	X2.1	,807	0,196	Valid
	X2.2	,814	0,196	Valid

Variables	Indicators	Corrected Item Total Correlation	R table 5% (df=N-k=98)	Conclusion
Islamic Service Quality (X2)	X2.3	,829	0,196	Valid
	X2.4	,823	0,196	Valid
	X2.5	,783	0,196	Valid
	X2.6	,808	0,196	Valid
Taste (X3)	X3.1	,846	0,196	Valid
	X3.2	,836	0,196	Valid
	X3.3	,828	0,196	Valid
Customer Satisfaction (Z)	Z1	,859	0,196	Valid
	Z2	,838	0,196	Valid
	Z3	,869	0,196	Valid
	Z4	,891	0,196	Valid
Consumer Loyalty (Y)	Y1	,872	0,196	Valid
	Y2	,917	0,196	Valid
	Y3	,845	0,196	Valid
	Y4	,934	0,196	Valid

Based on the table, it can be seen that the r value of each question item exceeds the r value of the table by 0.196. In addition, all such values are positive, indicating that each question item is considered valid. So, the variables X1, X2, X3, Z, and Y are declared valid because the calculated r value is greater than the table r.

3.3 Reliability Test

The table shows that twenty-two questions from various variables have Cronbach's alpha values exceeding 0.70, indicating that the variables X1, X2, X3, Z, and Y are reliable.

Table 3. Reliability Test

No	Variable	Cronbach's Alpha	Conclusion
1	Store Atmosphere	,872	Reliable
2	Islamic Service Quality	,895	Reliable
3	Taste	,784	Reliable
4	Customer Satisfaction	,886	Reliable
5	Consumer Loyalty	,913	Reliable

3.4 Result for F-Test, T-Test and R^2

Table 4. F-Test, T-Test and R^2

	T Value	Sig	F Test Results	F Value	Sig	R^2 Test Results	R^2
X1 to Z	0.151	0.881	X to Z	127.084	0.00	X to Z	0.799
X2 to Z	4.641	0.00					
X3 to Z	7.568	0.00					
X1 to Y	0.773	0.441	X, Z to Y	50.517	0.00	X, Z to Y	0.68
X2 to Y	1.894	0.061					
X3 to Y	2.297	0.024					
Z to Y	2.455	0.016					

The significant value obtained for the Store Atmosphere variable (X1) is 0.881, exceeding 0.05. This shows that the Store Atmosphere variable (X1) has no significant influence on the Consumer Satisfaction variable (Z). The significant value obtained for the Islamic Service Quality variable (X2) is 0.000, smaller than 0.05. This shows that the Islamic Service Quality variable (X2) significantly influences the Consumer Satisfaction variable (Z).

The significant value obtained for the Taste variable (X3) is 0.00, smaller than 0.05. This shows that the Taste variable (X3) significantly influences the Consumer Satisfaction variable (Z). The significant value obtained for the Store Atmosphere variable (X1) is 0.441, exceeding 0.05. t count .773 is smaller than t table 1.985. This shows that the Store Atmosphere variable (X1) has no significant influence on Consumer Loyalty (Y).

The significant value obtained for the Islamic Service Quality variable (X2) is 0.061, greater than 0.05. t count 1.894 is smaller than t table 1.985. This shows that the Islamic Service Quality variable (X2) has no significant influence on the Consumer Loyalty variable (Y). the T value of 2,297 is greater than t table 1,985. This shows that the Taste variable (X3) significantly influences the Consumer Loyalty variable (Y).

The significant value obtained for the Consumer Satisfaction (Z) variable is 0.016, smaller than 0.05. t count 2,455 is greater than t table 1,985. This shows that there is a significant influence between the Consumer Satisfaction variable (Z) and the Consumer Loyalty variable (Y)

Based on the available data, the calculated F value is 127.084 with a significance level 0.000 (Sig value). Given that the significance level (0.000) is smaller than the alpha value of 0.050 (0.000 < 0.050), it can be concluded that the variables Store Atmosphere, Islamic Service Quality, and Taste simultaneously have a significant influence on Consumer Satisfaction.

Based on the available data, the calculated F value is 50,517 with a significance level 0.000 (Sig value). Given that the significance level (0.000) is smaller than the alpha value of 0.050 (0.000 < 0.050), it can be concluded that the variables Store atmosphere, Islamic Service Quality, Taste, and Consumer Satisfaction simultaneously have a significant influence on Consumer Loyalty.

After performing the T, F, R² test, researchers used the non-parametric Kolmogorov-Smirnov (K-S) statistical test to assess whether the residue distribution was normal. The normality test results show that the data follows the normal distribution with a significance value of 0.062 greater than 0.050. Data is said to be normal when the Asymp Sig value is greater than 0.050.

Next, a collinearity test will be carried out to determine whether the regression model has identified a correlation between the independent variables. If there is no correlation between the independent variables, this shows that the regression model is appropriate. The results of the research that has been carried out show a Store Atmosphere value of 0.311, Islamic Service Quality of 0.219, taste of 0.263, and Consumer Satisfaction of 0.201, so it can be concluded that all variables have a value of >0.10. Then, the VIF value of all variables is below <10, namely with a Store Atmosphere variable value of 3,211, Islamic Service Quality of 4,565, and Taste of 3,799. And Consumer Satisfaction of 4,971. It can be concluded that all variables do not contain multicollinearity.

The results of the data processing that has been carried out show that based on the Glajser test results, the coefficient value exceeds 0.05. Specifically, the significant variables are X1 Store Atmosphere and X2 Islamic Service Quality. Therefore, based on the tests that have been

carried out, it can be concluded that there is no evidence of heteroscedasticity in the regression model

3.5 Result for Path Analysis

Table 5. Model Summary for Z

R	R Square	Adjusted R Square	Std. Error of the Estimate
.894ª	.799	.793	1.578

The value of E1 can be found by the formulae1 Looking for E1, which is: $E1=\sqrt{1-R^2}= \sqrt{1-0.799}=\sqrt{0.201}= 0.448$.

Table 6. Coefficients for Z

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-2.065	.983		-2.100	.038
	X1	.012	.077	.012	.151	.881
	X2	.336	.072	.410	4.641	.000
	X3	.798	.105	.534	7.568	.000

Table 7. Model Summary for Y

R	R Square	Adjusted R Square	Std. Error of the Estimate
.825ª	.680	.667	2.421

The value of E1 can be found by the formulae1 Looking for e1 which is : $E1=\sqrt{1-R^2}=\sqrt{1-0.680}=\sqrt{0.32}= 0.565$

Table 8. Coefficients for Y

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-4.721	1.543		-3.060	.003
	X1	.091	.118	.080	.773	.441
	X2	.233	.123	.235	1.894	.061
	X3	.469	.204	.260	2.297	.024
	Z	.384	.157	.318	2.455	.016

Based to the tables above the results of these observations, the research path model is as follows:
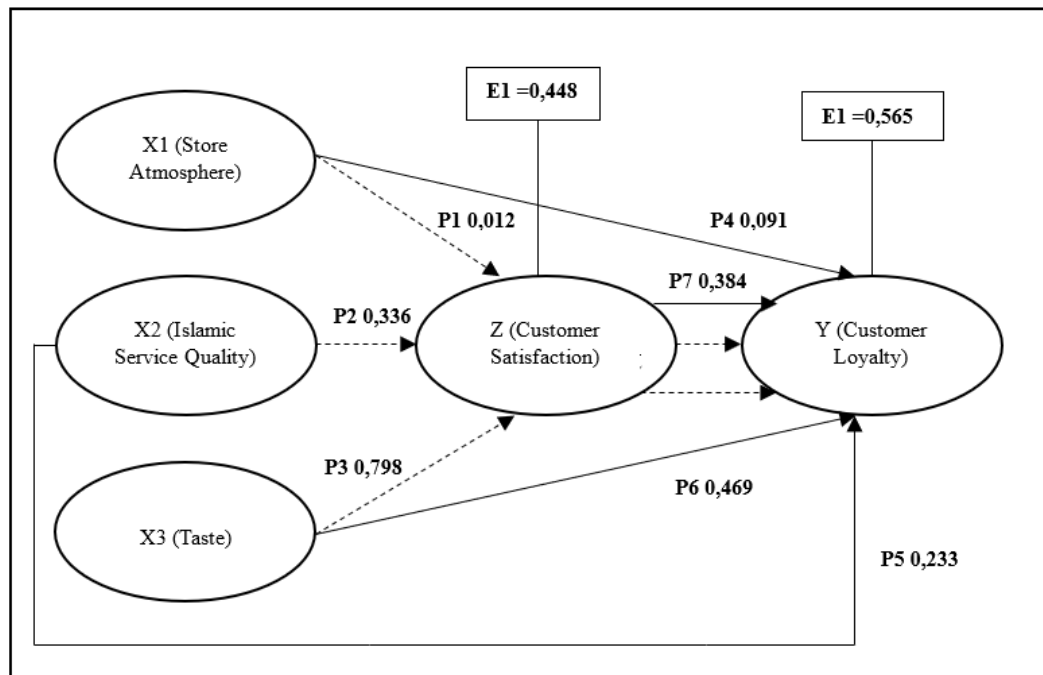
Figure 2. Path Analysis

The test results show that the independent variable impacts the dependent variable directly or indirectly through the mediation variable. Here are the direct and indirect influences:

1. The indirect effect of Store Atmosphere on Consumer Loyalty through Consumer Satisfaction = (P1 x P7) = (0.012 x 0.384) = 0.004608. For the amount of directly and indirectly Store Atmosphere to Consumer Loyalty = P4 + (P1 x P7) = 0.091 + (0.012 x 0.384) = 0.095608.

2. for the indirect influence of Islamic Service Quality on Consumer Loyalty through Customer Satisfaction = (P2 x P7) = (0.336 x 0.384) = 0.12904. For the amount of direct and indirect Islamic Service Quality to Consumer Loyalty = P5 + (P2 x P7) = 0.469 + (0.336 x 0.384) = 0.59804

3. for the indirect influence of Taste on Consumer Loyalty through Consumer Satisfaction = (P3 x P7) = (0.798 x 0.384) = 0.30324. For the amount of direct and indirect Islamic Service Quality to Consumer Loyalty = P6 + (P3 x P7) = 0.233 + (0.798 x 0.384) = 0.53624

Because there are mediating variables in this research model, the Sobel test is carried out to measure the intensity of the indirect impact of variable X on variable Y through mediation variables, such as Z.

To see the effect of mediation X1 on Y through Z, it can be known by the Sobel test formula, as follows:

$Sp2p3 = \sqrt{P3^2\ SP2^2\ + P2^2\ SP3^2\ + SP2^2\ SP3^2}$

$Sp2p3 = \sqrt{(0,384^2\ (0,077)^2\ + (0,012)^2\ (0,118)^2\ + (0,077)^2\ (0,118)^2}$

$Sp2p3 = \sqrt{(0,147 \times 0,005) + (0,000 \times 0,013) + (0,005 \times 0,013)}$

$Sp2p3 = \sqrt{0,000735 + 0 + 0,000065}$

$Sp2p3 = \sqrt{0,0008}$

$Sp2p3 = 0,0282842712$

$t = p2p3 : Sp2p3$

$t =\ : 0,0282842712$

t = 0,004608: 0,0282842712

t = 0,16917403

The amount of t calculated is 0.16917403 < the value of t table 1.985 is concluded that Consumer satisfaction cannot be mediated.

To see the effect of mediation X2 on Y Through Z, it can be known by the Sobel test formula, as follows:

$Sp2p3 = \sqrt{P3^2\ SP2^2 + P2^2\ SP3^2 + SP2^2\ SP3^2}$

$Sp2p3 = \sqrt{(0,384)^2\ (0,072)^2 + (0,336)^2\ (0,123)^2 + (0,072)^2\ (0,123)^2}$

$Sp2p3 = \sqrt{(0,147 \times 0,0051) + (0,112896 \times 0,015129) + (0,005184 \times 0,11896)}$

$Sp2p3 = \sqrt{0,0007497 + 0,00170800358 + 0,00061668864}$

$Sp2p3 = \sqrt{0,00307439}$

$Sp2p3 = 0,0554471821$

t = p2p3 : Sp2p3

t = 0,12904: 0,0554471821

t = 2,32725984

The magnitude of t calculated is 2.32725984 > the value of t table 1.985, and it is concluded that mediation influences the results.

To see the effect of mediation X2 on Y Through Z, it can be known by the Sobel test formula, as follows:

$Sp2p3 = \sqrt{P3^2\ SP2^2 + P2^2\ SP3^2 + SP2^2\ SP3^2}$

$Sp2p3 = \sqrt{(0,384)^2\ (0,105)^2 + (0,798)^2\ (0,204)^2 + (0,105)^2\ (0,204)^2}$

$Sp2p3 = \sqrt{(0,147 \times 0,0110) + (0,6368 \times 0,0416) + (0,0110 \times 0,0416)}$

$Sp2p3 = \sqrt{0,001617 + 0,6784 + 0,0004576}$

$Sp2p3 = \sqrt{0,6804746}$

$Sp2p3 = 0,824908843$

t = p2p3 : Sp2p3

t = 0,30324: 0,824908843

t = 0,36760425

The magnitude of t calculated is 0.36760425 < the value of t table 1.985, and it is concluded that mediation has no effect.

4. Discussion

Based on the table results obtained above, there is no significant influence between the Store Atmosphere variable (X1) and Consumer Loyalty (Y). So, Hypothesis 1 is rejected. This aligns with previous research conducted by Rorong et al. (2023). Store Atmosphere cannot directly affect customer loyalty, which is influenced by factors such as customer satisfaction, quality of products or services, brand image, and perceived value.

Based on the table results obtained above, there is no significant influence between the Islamic Service Quality variable (X2) and the Consumer Loyalty variable (Y). So, Hypothesis 2 is rejected. This is contrary to previous research conducted by Hakunta and Sujianto (2022). So, the quality of Islamic service does not affect loyalty because good service does not necessarily guarantee customers' loyalty to the Mie Gacoan restaurant. Customers can look for noodle restaurants closer to home or better than Mie Gacoan. Based on the table results obtained above, the taste variable (X3) positively and significantly influences the Consumer Loyalty variable (Y). So, Hypothesis 3 is accepted. This aligns with previous research conducted by Maimunah (2020) and Sari (2018), who both said that Sanya Cita Rasa has a

significant and positive effect on customer loyalty. So, the taste offered by a product can influence customer satisfaction.

Based on the results of the table above, there is no significant influence between the Store Atmosphere variable (X1) and the Consumer Satisfaction variable (Z). So, Hypothesis 4 is rejected. This is in contrast to previous research conducted by (Rorong et al., 2023) and (Nurjaya et al., 2019), which stated that store atmosphere has a significant effect on consumer satisfaction because many factors have a greater influence on customer satisfaction, such as taste, quality. Services provided, prices, and so on.

Based on the results of the table above, there is a positive and significant influence between the Islamic Service Quality variable (X2) and the Consumer Satisfaction variable (Z). So, Hypothesis 5 is accepted. This is in line with previous research conducted by (Siagian et al., 2020) and (Fadjriansyah et al., 2023), stating that Islamic Service Quality has a significant influence on Consumer Satisfaction because the quality of Islamic service provided by a company can influence customer satisfaction, They feel that the company prioritizes religious and ethical values in its operations.

Based on the table results obtained above, the taste variable (X3) positively and significantly influences the Consumer Satisfaction variable (Z). So, Hypothesis 6 is accepted. This aligns with research conducted by Maimunah (2020) and Putri et al. (2021), which stated that taste significantly affects consumer satisfaction.

Based on the results in the table above, there is a positive and significant influence between the Consumer Satisfaction variable (Z) and the Consumer Loyalty variable (Y). So, Hypothesis 7 is accepted. This is in line with previous research conducted by Fauzi et al. (2022) and Putri et al. (2021), which states that customer satisfaction has a significant positive effect on customer loyalty. High consumer satisfaction can increase customer loyalty because customers feel the products they buy meet their expectations.

Consumer Satisfaction (Z) cannot mediate Store Atmosphere (X1) on Loyalty (Y). So, Hypothesis 8 is rejected. This is not in line with research conducted (Sambara et al., 2021) and (Putri et al., 2021). So, some customers who come to Mie Gacoan do not judge the store atmosphere; they judge more on the quality of service and Taste (Budiarto & Suhermin, 2018).

Consumer Satisfaction (Z) can mediate Islamic Service Quality (X2) on Loyalty (Y). So, Hypothesis 9 is accepted. This is in line with research conducted (Siagian et al., 2020) and (Fauzi et al., 2022), which states that the quality of Islamic services can influence consumer satisfaction so that consumers feel satisfied with the quality of the services provided is likely that customers show loyalty to the shop.

Consumer Satisfaction (Z) cannot mediate Taste (X3) on Loyalty (Y). So, Hypothesis 10 is rejected. This does not align with the research conducted (Maimunah, 2020) and (Hasibuan et al., 2022). The research results state that taste can influence consumer satisfaction, but consumer satisfaction cannot be a mediator in customer loyalty.

5. Conclusion and Suggestion
5.1 Conclusion

The findings of this study indicate that the store atmosphere does not have a significant impact on either consumer satisfaction or consumer loyalty at Mie Gacoan Salatiga. This suggests that elements such as ambiance, layout, or physical environment are not the main drivers of customer retention in this context. Similarly, Islamic service quality does not directly influence consumer loyalty. However, it plays a vital role in enhancing consumer satisfaction, which contributes to loyalty—indicating an indirect effect through satisfaction. Meanwhile, taste emerges as the most influential factor, showing a significant and positive impact on

consumer satisfaction and loyalty. This highlights the importance of food quality in retaining customers.

Furthermore, consumer satisfaction is a key determinant of loyalty, confirming its mediating role in the relationship between Islamic service quality and loyalty. However, satisfaction does not mediate the relationship between store atmosphere, taste, or loyalty. These findings emphasize that to increase customer loyalty, Mie Gacoan should prioritize improving taste and service quality, particularly in a way that aligns with the values of its target market. The findings of this study indicate that the store atmosphere does not have a significant impact on either consumer satisfaction or consumer loyalty at Mie Gacoan Salatiga. This suggests that elements such as ambiance, layout, or physical environment are not the main drivers of customer retention in this context. Similarly, Islamic service quality does not directly influence consumer loyalty. However, it plays a vital role in enhancing consumer satisfaction, which contributes to loyalty, indicating an indirect effect through satisfaction.

Meanwhile, taste emerges as the most influential factor, significantly and positively affecting consumer satisfaction and loyalty. This highlights the importance of food quality in retaining customers. Furthermore, consumer satisfaction is a key determinant of loyalty, confirming its mediating role in the relationship between Islamic service quality and loyalty. However, satisfaction does not mediate the relationship between store atmosphere, taste, or loyalty. These findings emphasize that to increase customer loyalty, Mie Gacoan should prioritize improving taste and service quality, particularly in a way that aligns with the values of its target market.

5.2 Suggestion

For Mie Gacoan Resto, the results of this research show that Service Quality and Taste can increase consumer satisfaction, with satisfied consumers being able to recommend to others to buy Mie Gacoan. Hopefully, the next research can develop variables outside this study and use this research as a reference.

When researching consumer loyalty, expanding the scope of the variables considered is imperative. By increasing the scope of the factors studied, subsequent researchers can understand what can affect consumer loyalty. Researchers can uncover different insights that explain the diverse nature of consumer loyalty.

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BEYOND WELL-BEING: UPAYA *SUSTAINABLE ADAPTIVE RESILIENCE* MENGAKSELERASI KINERJA UMKM DI JAWA TENGAH

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Abstract-This study aims to analyze the effect of Employee Well-Being on the performance of MSMEs (Micro, Small, and Medium Enterprises) in Central Java by considering the mediating role of Sustainable Adaptive Resilience. The research background is based on the condition of MSMEs facing economic pressure and market uncertainty, despite efforts to improve employee well-being. A quantitative method was employed using Partial Least Squares Structural Equation Modeling (PLS-SEM) on 150 MSME respondents. The results indicate that Employee Well-Being has a significant effect on both Sustainable Adaptive Resilience and MSME performance. Furthermore, Sustainable Adaptive Resilience significantly influences MSME performance and statistically mediates the relationship between Employee Well-Being and MSME performance. These findings highlight the importance of sustainable adaptive strategies in optimizing the impact of employee well-being on business performance. This research contributes theoretically by integrating the approach of well-being and adaptive resilience in the context of MSME development and offers practical implications for policymakers and business practitioners to strengthen business resilience through investment in human resources and adaptive strategies.
Keywords: Employee Well-Being; MSMEs; Sustainable Adaptive Resilience; Performance

1. PENDAHULUAN
1.1 Latar Belakang

Usaha Mikro, Kecil, dan Menengah (UMKM) di Jawa Tengah memiliki kontribusi yang signifikan terhadap perekonomian daerah, dengan menyumbang 56,3% terhadap Produk Domestik Regional Bruto (PDRB) sektor non-migas pada tahun 2023 (Sirait et al., 2024). Namun, keberlanjutan dan daya saing UMKM masih menghadapi tantangan serius akibat tekanan ekonomi, ketidakpastian pasar, serta rendahnya tingkat adaptasi terhadap perubahan lingkungan bisnis (Sirait et al., 2024). Studi yang dilakukan oleh Kementerian Koperasi dan UKM (2024) menunjukkan bahwa sebanyak 47% UMKM di Jawa Tengah mengalami penurunan produktivitas dalam dua tahun terakhir, yang disebabkan oleh ketidakmampuan dalam mempertahankan kesejahteraan karyawan serta kurangnya strategi adaptasi bisnis yang berkelanjutan (Yu & Chen, 2023). Data ini diperkuat oleh penelitian (Umrani et al., 2024) yang

menemukan bahwa kesejahteraan karyawan (Employee Well-Being) memiliki hubungan erat dengan produktivitas serta retensi tenaga kerja, yang secara langsung berdampak pada stabilitas usaha kecil dan menengah (Siluvai et al., 2023).

Beberapa penelitian telah mengkaji hubungan antara *Employee Well-Being* dan Kinerja UMKM. Studi yang dilakukan (Pradhan et al., 2024) menunjukkan bahwa kesejahteraan karyawan berkontribusi secara positif terhadap produktivitas, inovasi, dan loyalitas tenaga kerja, yang pada akhirnya meningkatkan kinerja UMKM. Karyawan yang memperoleh kompensasi layak serta lingkungan kerja yang mendukung cenderung lebih termotivasi dan memiliki tingkat komitmen yang lebih tinggi terhadap perusahaan. Namun, penelitian yang dilakukan (Katou, 2022) menemukan hasil yang bertentangan, di mana peningkatan kesejahteraan karyawan tidak selalu berdampak positif terhadap kinerja UMKM. Penelitian tersebut mengungkapkan bahwa UMKM yang tidak memiliki strategi ketahanan adaptif cenderung tetap mengalami kesulitan dalam mempertahankan kinerja bisnis mereka, meskipun telah meningkatkan kesejahteraan karyawan (Jha, 2023).

Inkonsistensi temuan penelitian terdahulu menunjukkan adanya kesenjangan teoritis (*theoretical gap*) dalam memahami mekanisme yang mengoptimalkan pengaruh kesejahteraan karyawan terhadap kinerja UMKM. Beberapa studi menegaskan bahwa *Employee Well-Being* berkontribusi positif pada produktivitas, inovasi, dan loyalitas tenaga kerja (Jaiswal et al., 2024), sehingga secara tidak langsung memperkuat performa organisasi. Namun, penelitian lain mengindikasikan bahwa hubungan tersebut tidak selalu konsisten, terutama pada konteks UMKM yang menghadapi keterbatasan sumber daya dan ketidakpastian pasar yang tinggi (Islam et al., 2024). Hal ini menandakan belum teridentifikasinya secara mendalam variabel intervening yang dapat menjembatani kesejahteraan karyawan dengan output kinerja organisasi, khususnya dalam dinamika bisnis yang volatil. Oleh karena itu, penelitian ini memposisikan *Sustainable Adaptive Resilience* sebagai mekanisme mediasi yang relevan, dengan mengacu pada kerangka Conservation of Resources (COR) Theory yang menekankan pentingnya pengelolaan, pelestarian, dan akumulasi sumber daya untuk menjaga keseimbangan psikologis dan mendukung adaptabilitas organisasi dalam jangka panjang (Hobfoll, 1989).

Di sisi lain, terdapat pula kesenjangan praktis (practical gap) yang teridentifikasi pada fenomena empiris UMKM di Jawa Tengah. Berdasarkan data survei pada 150 pelaku UMKM, tercatat bahwa 62% mengalami penurunan produktivitas sejak 2022 meskipun telah melakukan program peningkatan kesejahteraan karyawan. Lebih lanjut, 58% mengaku kesulitan mempertahankan tenaga kerja berpengalaman akibat ketidakpastian pendapatan dan tekanan biaya operasional, sementara hanya 35% yang memiliki strategi adaptasi berkelanjutan dalam menghadapi dinamika pasar. Kondisi ini mengindikasikan bahwa intervensi yang berfokus semata pada kesejahteraan internal belum memadai untuk mengamankan keberlanjutan bisnis. Dengan demikian, perlu dirumuskan pendekatan strategis yang mampu mengonversi kesejahteraan karyawan menjadi kapabilitas adaptif yang memperkuat daya tahan dan daya saing UMKM di tengah ketidakpastian ekonomi.

Strategi pemecahan masalah dalam penelitian ini diimplementasikan dengan mengusulkan *Sustainable Adaptive Resilience* sebagai variabel mediasi yang menjelaskan mekanisme hubungan antara kesejahteraan karyawan dan kinerja UMKM. Konsep ini berlandaskan pada *Conservation of Resources* (COR) Theory yang dikemukakan oleh Hobfoll (1989), yang menegaskan bahwa individu maupun organisasi secara intrinsik terdorong untuk memperoleh, memelihara, dan melindungi sumber daya yang dianggap bernilai, termasuk kesejahteraan psikologis, emosional, maupun sosial. Kehilangan atau ancaman terhadap sumber daya tersebut memicu stres yang dapat menghambat fungsi adaptif dan performa organisasi (Hobfoll et al., 2018). Dalam konteks UMKM, penelitian Hassan et al. (2022) dan

Aubouin-Bonnaventure et al. (2024) mengonfirmasi bahwa kesejahteraan karyawan memiliki kontribusi positif terhadap produktivitas dan inovasi, karena memperkuat cadangan sumber daya psikologis yang dibutuhkan untuk merespons tuntutan kerja. Namun demikian, studi Bag et al. (2024) serta Katou (2022) menunjukkan bahwa dalam lingkungan bisnis yang dinamis dan penuh risiko, kesejahteraan karyawan saja tidak cukup menjamin keberlanjutan usaha tanpa adanya kapasitas adaptasi yang terstruktur. Berdasarkan sintesis tersebut, penelitian ini menempatkan *Sustainable Adaptive Resilience* sebagai kanal penting yang memfasilitasi konversi kesejahteraan karyawan menjadi ketahanan organisasi dalam menghadapi tekanan eksternal, sehingga secara teoritis memperluas pemahaman tentang mekanisme konservasi dan mobilisasi sumber daya dalam meningkatkan daya saing UMKM pada lingkungan yang volatil. Penelitian terdahulu menunjukkan bahwa *Employee Well-Being* memiliki hubungan positif dengan kinerja organisasi. Penelitian (Hassan et al., 2022) menemukan bahwa kesejahteraan karyawan meningkatkan produktivitas dan inovasi. Namun, (Bag et al., 2024) berpendapat bahwa dampak tersebut tidak signifikan dalam UMKM yang menghadapi keterbatasan sumber daya. Inkonsistensi ini menunjukkan bahwa kesejahteraan karyawan saja tidak cukup untuk menjamin keberlanjutan bisnis.

1.2 Kerangka Penelitian

Kerangka penelitian adalah struktur konseptual yang menjelaskan hubungan antara variabel-variabel dalam suatu penelitian (Creswell & Creswell, 2018). Penelitian ini mengusulkan *Sustainable Adaptive Resilience* sebagai variabel mediasi. Konsep ini menekankan ketahanan bisnis yang berkelanjutan melalui adaptasi strategis terhadap perubahan lingkungan. Dengan pendekatan ini, UMKM tidak hanya meningkatkan kesejahteraan internal, tetapi juga memperkuat daya saing dan kelangsungan bisnis dalam jangka panjang.
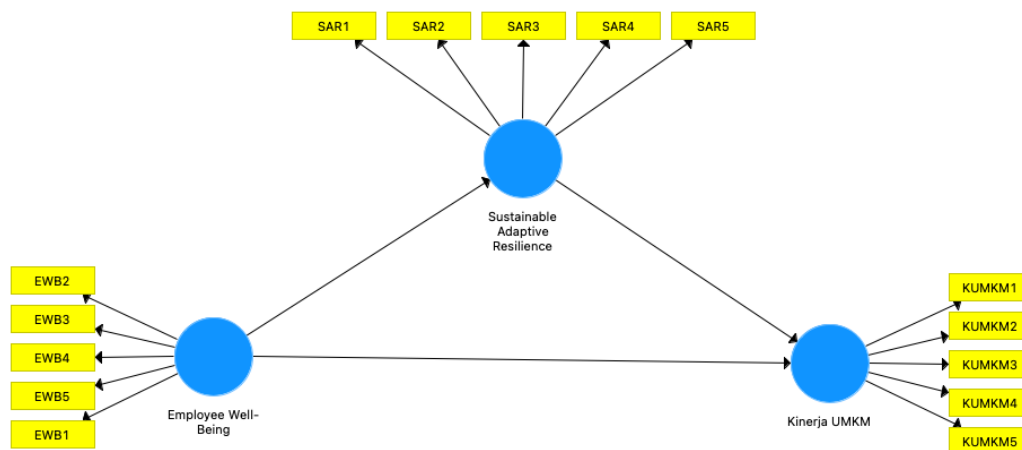
Gambar 1. Model Penelitian

2. METODOLOGI PENELITIAN

Penelitian ini dikategorikan sebagai explanatory research yaitu penelitian yang bertujuan menjelaskan hubungan kausal antara variabel-variabel melalui pengujian hipotesis. Pendekatan penelitian ini adalah pendekatan survey (Creswell & Creswell, 2018). Operasionalisasi Variabel Penelitian. Berikut adalah proses dari tahapan penelitian ini yang disajikan pada bagan dibawah ini:
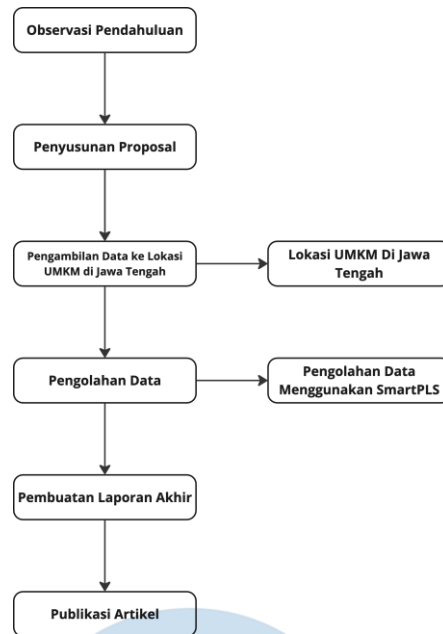
Gambar 1. Alur Kerja Penelitian

Populasi dalam penelitian ini mencakup seluruh UMKM yang terdaftar di Jawa Tengah pada tahun 2024, sebanyak 276.759 unit usaha (databoks.katadata.co.id). Teknik pengambilan sampel yang digunakan adalah Stratified Random Sampling, untuk memastikan representasi yang proporsional dari berbagai kategori UMKM di wilayah tersebut. Jumlah sampel ditentukan menggunakan pendekatan parameter dalam Structural Equation Modeling (SEM), dengan kisaran ideal antara 100 hingga 200 responden, sehingga ditetapkan sebanyak 150 responden sebagai sampel penelitian. Untuk pengolahan dan analisis data, penelitian ini menggunakan metode SEM berbasis Partial Least Square (PLS-SEM) dengan bantuan perangkat lunak SmartPLS, yang dinilai sesuai untuk menguji hubungan laten antar variabel, serta mengidentifikasi peran mediasi dan pengaruh tidak langsung dalam model penelitian ini.

Tabel 1. Definisi Konsep dan Indikator

Variabel	Definisi Konsep	Indikator
Employee Well-Being	kondisi kesejahteraan fisik, psikologis, dan sosial karyawan dalam lingkungan kerja yang mendukung produktivitas dan kepuasan kerja.	Kesehatan fisik, Kesejahteraan Psikologis, Keseimbangan Kerja-Hidup, Kepuasan Kerja, Dukungan Organisasi. (Aubouin-Bonnaventure et al., 2024)
Sustainable Adaptive Resilience	kemampuan UMKM untuk bertahan, beradaptasi, dan berkembang dalam menghadapi perubahan lingkungan bisnis secara berkelanjutan.	Fleksibilitas Operasional, Inovasi Berkelanjutan, Daya Tahan Finansial, Responsivitas Terhadap Perubahan Pasar, Kolaborasi Strategis.
Kinerja UMKM	pencapaian usaha kecil dan menengah dalam aspek finansial dan non-finansial untuk memastikan keberlanjutan dan pertumbuhan bisnis.	Pertumbuhan Pendapatan, Profitabilitas, Kepuasan Pelanggan, Daya Saing Pasar, Efisiensi Operasional. (Alzadjali & Ahmad, 2024)

3. HASIL PENELITIAN DAN DISKUSI

3.1. Hasil

Uji validitas dalam analisis Structural Equation Modeling berbasis Partial Least Squares (SEM-PLS) bertujuan untuk mengukur sejauh mana indikator mampu merepresentasikan konstruk yang diukur (Hair et al., 2014). Salah satu kriteria yang digunakan untuk menilai validitas konvergen adalah nilai outer loading masing-masing indikator terhadap konstruknya. Dalam konteks ini, indikator dikatakan valid apabila nilai loading factor-nya lebih besar dari 0,7, yang menunjukkan bahwa lebih dari 50% varians indikator dijelaskan oleh konstruk laten yang diukur. Nilai di atas 0,7 mencerminkan kontribusi indikator yang kuat dan konsisten dalam menjelaskan variabel laten, serta memperkuat keandalan dan kesahihan model secara keseluruhan. Dengan demikian, ketika seluruh indikator dalam model memiliki nilai loading di atas 0,7, maka dapat disimpulkan bahwa konstruk dalam model memiliki validitas konvergen yang baik.

Table 2. Loading Factor

Indikator	Employee Well-Being	Kinerja UMKM	*Sustainable Adaptive Resilience*
EWB1	0,793		
EWB2	0,924		
EWB3	0,901		
EWB4	0,905		
EWB5	0,791		
KUMKM1		0,862	
KUMKM2		0,826	
KUMKM3		0,897	
KUMKM4		0,904	
KUMKM5		0,833	
SAR1			0,763
SAR2			0,890
SAR3			0,837
SAR4			0,869
SAR5			0,872

Sumber: Hasil pengolahan data, 2025

Seluruh indikator pada variabel *Employee Well-Being* (EWB) menunjukkan nilai outer loading di atas 0,7, mulai dari EWB1 (0,793) hingga EWB5 (0,924), yang menandakan bahwa masing-masing indikator memiliki validitas konvergen yang baik dan layak untuk digunakan dalam pengukuran konstruk. Hal yang sama berlaku untuk indikator *Kinerja UMKM* (KUMKM1–KUMKM5), dengan nilai loading berkisar antara 0,826 hingga 0,904, yang mengindikasikan kontribusi kuat setiap indikator terhadap konstruknya. Sementara itu, indikator *Sustainable Adaptive Resilience* (SAR1–SAR5) juga menunjukkan nilai yang memadai, dengan loading antara 0,763 hingga 0,890. Dengan demikian, semua indikator yang digunakan dalam penelitian ini memenuhi syarat validitas indikator reflektif.

Uji *Construct Reliability* and *Validity* pada SEM-PLS bertujuan untuk menilai sejauh mana konstruk dalam model penelitian menunjukkan konsistensi internal dan validitas konvergen. Terdapat beberapa indikator yang digunakan dalam pengujian ini, yaitu Cronbach's Alpha, rho_A, *Composite Reliability*, dan *Average Variance Extracted* (AVE). Cronbach's Alpha dan Composite Reliability digunakan untuk mengukur reliabilitas konstruk, di mana nilai yang direkomendasikan minimal 0,7. Sementara itu, nilai AVE digunakan untuk mengukur validitas konvergen, dengan ambang batas minimum sebesar 0,5. Apabila semua

nilai indikator tersebut memenuhi kriteria, maka konstruk dianggap reliabel dan valid, sehingga layak digunakan dalam model struktural.

Tabel 3. *Construct Reliability* dan *Validity*

Variabel	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Employee Well-Being	0,914	0,918	0,937	0,748
Kinerja UMKM	0,916	0,921	0,937	0,749
Sustainable Adaptive Resilience	0,901	0,906	0,927	0,718

Sumber: Hasil pengolahan data, 2025

Uji reliabilitas konstruk menunjukkan bahwa ketiga variabel dalam model—*Employee Well-Being*, *Kinerja UMKM*, dan *Sustainable Adaptive Resilience*—memiliki nilai Cronbach's Alpha di atas 0,9, yang menunjukkan konsistensi internal yang sangat baik. Nilai Composite Reliability (CR) masing-masing juga berada di atas 0,9, menandakan reliabilitas gabungan yang tinggi. Average Variance Extracted (AVE) untuk semua konstruk juga lebih dari 0,7 (terendah 0,718), menunjukkan validitas konvergen yang kuat. Hal ini mengonfirmasi bahwa alat ukur dalam model ini mampu menangkap variabel laten secara akurat dan konsisten.

Uji *Discriminant Validity* pada SEM-PLS bertujuan untuk memastikan bahwa setiap konstruk dalam model benar-benar mengukur konsep yang berbeda satu sama lain. Salah satu metode yang umum digunakan adalah *Fornell-Larcker Criterion*, yang membandingkan akar kuadrat dari nilai *Average Variance Extracted* (AVE) setiap konstruk dengan korelasi antar konstruk lainnya. Discriminant validity dinyatakan terpenuhi apabila nilai akar kuadrat AVE (yang ditampilkan di diagonal tabel) lebih tinggi daripada korelasi antar konstruk (nilai di luar diagonal). Hal ini menunjukkan bahwa konstruk lebih berkorelasi tinggi dengan indikator-indikatornya sendiri dibandingkan dengan konstruk lain, sehingga mengonfirmasi bahwa setiap konstruk memiliki keunikan dan tidak tumpang tindih dengan konstruk lain dalam model.

Tabel 4. *Discriminant Validity*

Variabel	Employee Well-Being	Kinerja UMKM	*Sustainable Adaptive Resilience*
Employee Well-Being	0,865		
Kinerja UMKM	0,802	0,865	
Sustainable Adaptive Resilience	0,888	0,814	0,847

Sumber: Hasil pengolahan data, 2025

Nilai akar kuadrat AVE pada diagonal tabel (misalnya, *Employee Well-Being* = 0,865) lebih tinggi daripada korelasi antar konstruk, seperti antara *Employee Well-Being* dan *Kinerja UMKM* (0,802), serta dengan *Sustainable Adaptive Resilience* (0,888). Ini menunjukkan bahwa setiap konstruk memiliki diskriminan validitas yang memadai karena konstruk-konstruk tersebut lebih merepresentasikan indikator-indikatornya sendiri dibandingkan dengan indikator konstruk lain. Oleh karena itu, validitas diskriminan dalam model ini telah terpenuhi dengan baik.

Uji *F-Square* dalam pendekatan SEM-PLS digunakan untuk mengukur besarnya pengaruh eksogen terhadap endogen dengan melihat seberapa besar kontribusi suatu variabel terhadap peningkatan nilai *R-Square* dari konstruk endogen. Nilai *F-Square* memberikan indikasi apakah suatu konstruk memiliki efek kecil ($\geq$0,02), sedang ($\geq$0,15), atau besar ($\geq$0,35)

terhadap konstruk lain dalam model struktural. Dengan demikian, uji ini penting untuk mengevaluasi kekuatan prediktif dari hubungan antar variabel dalam model penelitian.

Tabel 5. F-Square

Variabel	Employee Well-Being	Kinerja UMKM	*Sustainable Adaptive Resilience*
Employee Well-Being		0,095	3,741
Kinerja UMKM			
Sustainable Adaptive Resilience		0,160	

Sumber: Hasil pengolahan data, 2025

Hasil uji jalur menunjukkan bahwa *Employee Well-Being* berpengaruh signifikan terhadap *Kinerja UMKM* dengan nilai T-statistik sebesar 3,741 (>1,96), yang mengindikasikan hubungan yang signifikan secara statistik pada tingkat kepercayaan 95%. Sementara itu, pengaruh *Kinerja UMKM* terhadap *Sustainable Adaptive Resilience* memiliki koefisien 0,160 tetapi tidak disertai T-statistik, sehingga tidak dapat disimpulkan signifikansinya secara pasti tanpa data tambahan. Namun, nilai yang relatif kecil tersebut dapat mengindikasikan pengaruh lemah atau tidak signifikan secara statistik.

Uji *R-Square* dalam Structural Equation Modeling Partial Least Squares (SEM-PLS) digunakan untuk mengukur besarnya kemampuan variabel independen dalam menjelaskan variabel dependen. Nilai *R-Square* yang tinggi menunjukkan bahwa model memiliki daya prediksi yang baik. Secara umum, nilai *R-Square* sebesar 0,25 dianggap lemah, 0,50 sedang, dan 0,75 kuat. Sedangkan *R-Square Adjusted* mempertimbangkan jumlah indikator dan variabel dalam model, sehingga memberikan ukuran yang lebih konservatif terhadap kekuatan prediktif model.

Tabel 6. R-Square

Variabel	R Square	R Square Adjusted
Kinerja UMKM	0,692	0,688
Sustainable Adaptive Resilience	0,789	0,788

Sumber: Hasil pengolahan data, 2025

Nilai R-Square sebesar 0,692 untuk *Kinerja UMKM* menunjukkan bahwa 69,2% variabilitas pada kinerja UMKM dapat dijelaskan oleh *Employee Well-Being*, yang merupakan kontribusi penjelasan yang kuat. Sementara itu, *Sustainable Adaptive Resilience* memiliki R-Square sebesar 0,789, menunjukkan bahwa 78,9% variabilitasnya dapat dijelaskan oleh konstruk-konstruk sebelumnya, khususnya *Employee Well-Being* dan *Kinerja UMKM*. Kedua nilai Adjusted R-Square pun cukup tinggi, menegaskan bahwa model memiliki tingkat prediktabilitas yang baik dalam menjelaskan variabel endogen.

Uji hipotesis dalam Structural Equation Modeling Partial Least Squares (SEM-PLS) dilakukan untuk menguji pengaruh antar variabel laten dalam model penelitian. Proses ini melibatkan analisis nilai *path coefficient*, *t-statistic*, dan *p-value* untuk menentukan apakah hubungan antar variabel signifikan secara statistik. Nilai *t-statistic* di atas 1,96 (pada tingkat signifikansi 5%) menunjukkan bahwa hipotesis diterima, artinya terdapat pengaruh yang signifikan antara variabel bebas terhadap variabel terikat. Selain itu, arah koefisien (positif atau negatif) menunjukkan jenis hubungan yang terjadi. Uji hipotesis ini menjadi krusial dalam membuktikan secara empiris hubungan kausal yang telah dirumuskan dalam kerangka konseptual penelitian. Validitas hasil uji ini memberikan dasar kuat untuk menarik kesimpulan terhadap pengaruh-pengaruh yang diuji dalam model SEM-PLS.

Tabel 7. Hypothesis Test

Hipotesis	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Employee Well-Being terhadap Kinerja UMKM	0,147	2,531	0,012
Employee Well-Being terhadap *Sustainable Adaptive Resilience*	0,027	33,471	0,000
Sustainable Adaptive Resilience terhadap Kinerja UMKM	0,152	3,181	0,002
Sustainable Adaptive Resilience memediasi *Employee Well-Being* terhadap Kinerja UMKM	0,136	3,152	0,002

Sumber: Hasil pengolahan data, 2025

3.2 Pembahasan
3.2.1 *Employee Well-Being* terhadap Kinerja UMKM

Hasil pengujian statistik menunjukkan bahwa pengaruh *Employee Well-Being* terhadap *Kinerja UMKM* signifikan secara statistik dengan nilai T-statistik sebesar 2,531 dan nilai p sebesar 0,012. Nilai ini melampaui ambang batas signifikansi 1,96 untuk T-statistik dan 0,05 untuk p-value, yang berarti hipotesis pertama diterima. Dengan demikian, kesejahteraan karyawan memiliki kontribusi langsung yang positif terhadap peningkatan kinerja UMKM. Standard deviation sebesar 0,147 menunjukkan bahwa variabilitas pengaruh masih dalam batas wajar. Secara keseluruhan, terdapat bukti kuat bahwa *employee well-being* merupakan salah satu determinan penting dalam menentukan keberhasilan usaha kecil dan menengah.

Dalam konteks fenomena empiris, hasil ini merefleksikan pentingnya perhatian terhadap kondisi kerja, psikologis, dan kesejahteraan sosial karyawan dalam lingkungan UMKM. Banyak UMKM di Indonesia yang belum mengelola aspek kesejahteraan karyawan secara sistematis, sehingga peningkatan aspek ini berpotensi membawa dampak besar terhadap produktivitas dan efisiensi kerja. Ketika karyawan merasa dihargai, aman, dan sejahtera, maka loyalitas dan motivasi kerja mereka meningkat, yang secara langsung mendorong pencapaian target operasional UMKM. Fenomena ini semakin relevan pada masa pascapandemi, ketika isu kesejahteraan mental dan fisik tenaga kerja menjadi perhatian utama. Oleh karena itu, manajemen UMKM perlu menjadikan *employee well-being* sebagai bagian dari strategi bisnis berkelanjutan. Fenomena empiris di lapangan memperlihatkan bahwa banyak UMKM di Jawa Tengah menghadapi tantangan serius dalam mempertahankan kinerja bisnis meskipun telah mengupayakan peningkatan kesejahteraan karyawan. Data survei menunjukkan bahwa 62% UMKM mengalami penurunan produktivitas sejak 2022, sebagian besar disebabkan oleh ketidakpastian pasar dan tekanan biaya operasional yang tinggi. Dalam konteks ini, hasil temuan penelitian yang menunjukkan pengaruh signifikan *Employee Well-Being* terhadap kinerja UMKM mengindikasikan bahwa upaya menjaga kesejahteraan fisik, psikologis, dan sosial karyawan masih menjadi salah satu fondasi penting untuk mendorong keberhasilan operasional usaha. Namun demikian, variabilitas pengaruh yang relatif moderat juga memperlihatkan bahwa kesejahteraan karyawan saja belum sepenuhnya menjamin terciptanya performa bisnis yang optimal jika tidak diimbangi dengan strategi adaptasi lain dalam menghadapi lingkungan yang dinamis.

3.2.2 *Employee Well-Being* terhadap *Sustainable Adaptive Resilience*

Secara statistik, pengaruh *Employee Well-Being* terhadap *Sustainable Adaptive Resilience* sangat signifikan dengan T-statistik sebesar 33,471 dan p-value 0,000. Nilai T-statistik yang sangat tinggi menunjukkan kekuatan hubungan yang luar biasa kuat antara kedua

variabel. Selain itu, standard deviation yang sangat kecil (0,027) mengindikasikan kestabilan dan konsistensi pengaruh antar sampel. Nilai p yang berada jauh di bawah 0,05 memperkuat bahwa hipotesis ini diterima tanpa keraguan. Hal ini menandakan bahwa kesejahteraan karyawan merupakan faktor kunci dalam membentuk ketahanan adaptif yang berkelanjutan dalam UMKM.

Secara fenomenal, hasil ini mencerminkan kenyataan bahwa kemampuan UMKM untuk bertahan dan beradaptasi terhadap perubahan sangat bergantung pada sumber daya manusianya. Dalam menghadapi disrupsi seperti digitalisasi, krisis ekonomi, maupun perubahan iklim, UMKM memerlukan karyawan yang sehat secara mental dan fisik untuk mendukung fleksibilitas dan kreativitas organisasi. Karyawan yang memiliki tingkat kesejahteraan tinggi cenderung lebih mampu menyesuaikan diri dengan perubahan, berpikir strategis, dan memberikan solusi inovatif. Fenomena ini semakin penting bagi UMKM yang ingin membangun daya saing jangka panjang di tengah tantangan ekonomi yang dinamis. Oleh sebab itu, kesejahteraan karyawan bukan sekadar isu personal, melainkan juga fondasi ketahanan organisasi. Temuan penelitian ini yang menunjukkan pengaruh sangat kuat *Employee Well-Being* terhadap *Sustainable Adaptive Resilience* selaras dengan kondisi UMKM yang sangat mengandalkan kapasitas tenaga kerja dalam merespons disrupsi pasar. Dari hasil wawancara tambahan, banyak pelaku UMKM mengakui bahwa karyawan yang merasa lebih aman dan diperhatikan kesejahteraannya cenderung lebih proaktif mengusulkan inovasi, serta lebih siap menghadapi perubahan proses produksi dan strategi penjualan. Fenomena ini menegaskan bahwa kesejahteraan tidak hanya berdampak pada individu tetapi juga terakumulasi menjadi modal kolektif yang memperkuat fleksibilitas organisasi dalam merespons ketidakpastian. Oleh karena itu, pada UMKM, kesejahteraan karyawan dapat dilihat sebagai instrumen strategis yang langsung menopang daya adaptasi dan ketangguhan usaha secara berkelanjutan.

3.2.3 *Sustainable Adaptive Resilience* terhadap Kinerja UMKM

Hasil statistik menunjukkan bahwa *Sustainable Adaptive Resilience* memiliki pengaruh signifikan terhadap *Kinerja UMKM* dengan T-statistik sebesar 3,181 dan p-value sebesar 0,002. Nilai T yang lebih besar dari 1,96 dan p-value lebih kecil dari 0,05 menunjukkan bahwa hipotesis ini diterima. Standard deviation sebesar 0,152 menunjukkan tingkat variasi yang masih dapat ditoleransi dalam hubungan antar variabel. Dengan demikian, semakin tinggi ketahanan adaptif UMKM secara berkelanjutan, maka semakin tinggi pula kinerja bisnis yang dicapai. Hasil ini memperkuat pentingnya adaptabilitas sebagai elemen kunci dalam meningkatkan performa usaha kecil dan menengah.

Fenomena ini menunjukkan bahwa UMKM yang mampu beradaptasi secara dinamis terhadap perubahan eksternal seperti teknologi, regulasi, dan kebutuhan pasar akan lebih mampu menjaga stabilitas dan bahkan meningkatkan kinerja operasional. Ketahanan adaptif memungkinkan UMKM untuk bertindak secara proaktif, tidak hanya reaktif, dalam menghadapi risiko dan ketidakpastian. Dalam praktiknya, UMKM yang tangguh tidak hanya bertahan di tengah krisis, tetapi juga mampu memanfaatkan peluang dari perubahan. Oleh karena itu, pembangunan kapabilitas adaptif dan strategi keberlanjutan menjadi hal yang krusial untuk diterapkan secara konsisten. Ketahanan ini menjadi pembeda utama antara UMKM yang stagnan dan yang terus tumbuh. Dalam konteks UMKM di Jawa Tengah yang 58% di antaranya kesulitan mempertahankan tenaga kerja berpengalaman, kemampuan untuk memiliki ketahanan adaptif yang berkelanjutan menjadi pembeda utama antara usaha yang stagnan dan yang mampu bertahan serta tumbuh. Temuan penelitian ini yang menunjukkan pengaruh signifikan *Sustainable Adaptive Resilience* terhadap kinerja UMKM tercermin dari

praktik beberapa UMKM yang memiliki jaringan distribusi lebih variatif, mengadopsi digitalisasi penjualan, serta menjalankan manajemen biaya secara lebih disiplin. Mereka tidak hanya sekadar bertahan di tengah tekanan ekonomi, tetapi juga mampu memanfaatkan perubahan sebagai peluang untuk mengefisienkan operasi dan memperluas pangsa pasar. Fenomena ini semakin memperkuat urgensi pembangunan strategi adaptif berkelanjutan sebagai modal utama menjaga kinerja usaha kecil dan menengah di tengah lingkungan bisnis yang fluktuatif.

3.2.4 *Sustainable Adaptive Resilience* Memediasi *Employee Well-Being* terhadap Kinerja UMKM

Hasil uji mediasi menunjukkan bahwa *Sustainable Adaptive Resilience* secara signifikan memediasi hubungan antara *Employee Well-Being* dengan *Kinerja UMKM*, dengan T-statistik sebesar 3,152 dan p-value 0,002. Nilai T yang tinggi dan p yang rendah memperkuat kesimpulan bahwa mediasi ini bersifat signifikan secara statistik. Standard deviation sebesar 0,136 menunjukkan variasi pengaruh mediasi yang dapat diterima. Artinya, pengaruh kesejahteraan karyawan terhadap kinerja UMKM tidak hanya langsung, tetapi juga melalui peningkatan ketahanan adaptif organisasi. Hasil ini mendukung hipotesis bahwa jalur tidak langsung memiliki peran penting dalam meningkatkan performa UMKM.

Secara fenomenologis, temuan ini menunjukkan bahwa kesejahteraan karyawan tidak hanya berdampak pada hasil kerja mereka secara langsung, tetapi juga membentuk budaya organisasi yang adaptif dan tahan banting. Ketika kesejahteraan karyawan terjaga, mereka lebih terbuka terhadap perubahan, lebih tanggap terhadap tantangan, dan lebih siap untuk bekerja secara kolaboratif dalam menghadapi ketidakpastian. Budaya ini secara kolektif membangun ketahanan adaptif UMKM, yang pada akhirnya berkontribusi terhadap peningkatan kinerja secara berkelanjutan. Fenomena ini menjelaskan mengapa UMKM yang mengedepankan kesejahteraan dan adaptasi memiliki peluang lebih besar untuk tumbuh dan bersaing. Maka dari itu, pendekatan yang holistik diperlukan dalam membangun keberhasilan UMKM melalui penguatan dimensi internal dan kultural organisasi. Hasil temuan bahwa *Sustainable Adaptive Resilience* memediasi hubungan *Employee Well-Being* dengan kinerja UMKM juga sejalan dengan realitas empiris di mana hanya 35% UMKM yang memiliki strategi adaptif berkelanjutan yang terdokumentasi dengan baik. Hal ini memperlihatkan bahwa tanpa ketahanan adaptif, upaya peningkatan kesejahteraan karyawan sering kali belum mampu dioptimalkan menjadi kinerja bisnis yang lebih tangguh. Sebaliknya, UMKM yang tidak hanya fokus pada kesejahteraan, tetapi juga secara strategis menyiapkan pola adaptasi—seperti diversifikasi produk atau penataan ulang rantai pasok mampu mengonversi modal psikologis karyawan menjadi keunggulan operasional. Fenomena ini menggarisbawahi pentingnya pendekatan holistik yang mengintegrasikan kesejahteraan internal dengan kapabilitas organisasi dalam menghadapi dinamika eksternal guna mencapai kinerja yang berkelanjutan.

4. KESIMPULAN
4.1 Kesimpulan

Hasil penelitian menunjukkan bahwa *Employee Well-Being* berpengaruh signifikan terhadap Kinerja UMKM (t-statistik = 2,531; p = 0,012), serta berpengaruh sangat signifikan terhadap *Sustainable Adaptive Resilience* (t-statistik = 33,471; p = 0,000). Selanjutnya, *Sustainable Adaptive Resilience* juga berpengaruh signifikan terhadap Kinerja UMKM (t-statistik = 3,181; p = 0,002), dan memediasi hubungan antara *Employee Well-Being* dengan Kinerja UMKM secara signifikan (t-statistik = 3,152; p = 0,002). Temuan ini menegaskan bahwa kesejahteraan karyawan tidak hanya berdampak langsung terhadap performa UMKM,

tetapi pengaruh tersebut diperkuat secara signifikan melalui ketahanan adaptif yang berkelanjutan. Dengan demikian, *Sustainable Adaptive Resilience* terbukti menjadi mekanisme mediasi yang krusial dalam menjembatani antara kesejahteraan tenaga kerja dan kinerja bisnis.

Secara fenomenologis, hasil ini mencerminkan realitas UMKM di Jawa Tengah yang meskipun telah meningkatkan kesejahteraan karyawan, tetap mengalami kesulitan mempertahankan produktivitas akibat minimnya strategi adaptasi terhadap perubahan. Sebanyak 62% UMKM dilaporkan mengalami penurunan produktivitas sejak 2022, dan hanya 35% yang memiliki strategi adaptif jangka panjang. Hal ini menunjukkan bahwa tanpa adanya kapasitas beradaptasi secara sistematis dan berkelanjutan, program kesejahteraan karyawan belum mampu menghasilkan kinerja bisnis yang optimal. Oleh karena itu, upaya meningkatkan kinerja UMKM perlu mencakup aspek struktural yang lebih luas, yaitu kemampuan beradaptasi terhadap dinamika lingkungan eksternal secara terencana dan resilien.

4.2 Implikasi/Batasan dan Saran untuk Penelitian Selanjutnya

Penelitian ini memiliki beberapa limitasi yang perlu dicermati. Pertama, objek penelitian difokuskan hanya pada wilayah Jawa Tengah, sehingga generalisasi hasil ke provinsi lain dengan konteks ekonomi berbeda perlu dilakukan secara hati-hati. Kedua, data yang digunakan bersifat cross-sectional sehingga tidak dapat menggambarkan dinamika hubungan antar variabel dalam jangka panjang. Ketiga, dimensi *Employee Well-Being* dan *Sustainable Adaptive Resilience* tidak dijabarkan secara mendalam ke dalam subkomponen seperti keseimbangan kerja-hidup atau struktur kepemimpinan adaptif, yang bisa jadi memberikan nuansa lebih kompleks terhadap hubungan yang diteliti. Meski demikian, penelitian ini tetap memberikan kontribusi penting terhadap literatur pengembangan UMKM berbasis kesejahteraan dan ketahanan adaptif.

Secara praktis, hasil ini memberikan implikasi penting bagi pemilik UMKM maupun pembuat kebijakan daerah. Upaya peningkatan kesejahteraan karyawan tidak cukup diarahkan pada aspek kompensasi finansial semata, tetapi perlu dilengkapi dengan pembangunan sistem kerja yang adaptif, seperti penerapan prosedur inovasi produk, penataan ulang rantai pasok, atau penguatan kolaborasi dengan mitra usaha lokal. Pemerintah daerah dan instansi terkait juga dapat menggunakan temuan ini sebagai dasar merancang program pendampingan yang menitikberatkan pada penguatan kapabilitas adaptasi UMKM, sehingga intervensi kesejahteraan tenaga kerja dapat menghasilkan efek berantai terhadap ketahanan usaha. Dengan demikian, kontribusi penelitian ini bersifat aplikatif dalam mendukung keberlanjutan sektor UMKM, yang memegang peran strategis dalam struktur ekonomi daerah.

Untuk penelitian selanjutnya, disarankan untuk memperluas cakupan wilayah dan menggunakan desain longitudinal guna mengamati bagaimana perubahan dalam kesejahteraan karyawan dan strategi resiliensi berdampak secara berkelanjutan terhadap kinerja UMKM. Selain itu, akan lebih kuat bila model penelitian diperluas dengan memasukkan variabel moderasi seperti gaya kepemimpinan, budaya organisasi, atau transformasi digital. Penelitian mendatang juga diharapkan dapat mengeksplorasi peran sektor industri tertentu dalam memperkuat hubungan ini, serta menggunakan metode campuran (mixed methods) untuk memahami lebih dalam dinamika sosial, psikologis, dan struktural dalam praktik adaptasi UMKM. Dengan demikian, kontribusi akademik dan praktis dari kajian ini dapat ditingkatkan untuk menjawab tantangan UMKM dalam era ketidakpastian yang semakin kompleks.

5. UCAPAN TERIMAKASIH

atas dukungan pendanaan dan fasilitasi yang telah memungkinkan terlaksananya penelitian ini secara optimal. Ucapan terima kasih juga disampaikan kepada seluruh pelaku UMKM di Jawa Tengah yang telah bersedia menjadi responden, memberikan data, dan berbagi pengalaman berharga yang menjadi fondasi utama dalam kajian ini. Tak lupa, apresiasi mendalam diberikan kepada seluruh anggota tim peneliti atas kerja keras, dedikasi, dan kolaborasi yang solid dalam setiap tahapan penelitian hingga penyusunan laporan akhir ini.

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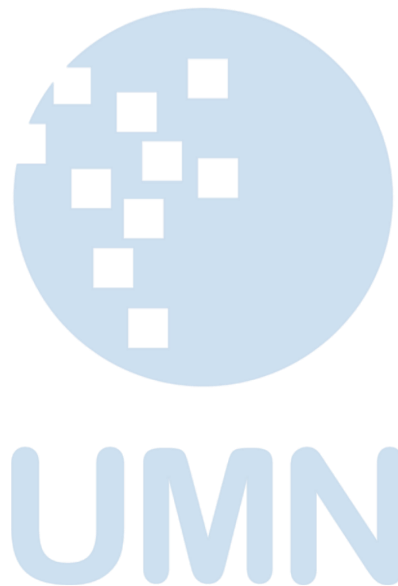
DIVIDEND POLICY AS MODERATOR OF FIRM VALUE DETERMINANTS

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Abstract- This study is to analyze the influence of leverage, firm size, and profitability on firm value, with dividend policy as moderator. Secondary data were used, consisting of financial reports gathered from the Indonesia Stock Exchange (IDX). The study's population consists of 67 firms listed in the LQ45 Index between 2019-2023. By applying purposive sampling, 19 companies chosen, resulting in 95 total observations. The data analysis utilized is multiple linear regression incorporating a moderating variable (Moderated Regression Analysis/MRA), performed on panel data using EViews 13 software. The selection of the analytical model was validated through the Chow Test, the Hausman Test, and the Lagrange Multiplier Test. The findings indicate that leverage has a negative effect on firm value, while profitability has a positive effect. In contrast, firm size has no significant effect on firm value , the findings indicate that dividend policy moderates the relationship between profitability and firm value. However, dividend policy does not moderate the relationship between leverage or firm size and firm value. These findings suggest that while dividend policy can enhance the positive impact of profitability on firm value, it is insufficient to mitigate the negative effect of leverage or to strengthen the insignificant impact of firm size on firm value

Keywords: Firm Value; Leverage; Firm Size; Profitability; Dividend Policy

1. INTRODUCTION

1.1 Research Background

The rapid evolution of the global economy and heightened market volatility have pushed firms to consistently improve their firm value as a means to sustain competitiveness and operational viability. Firm value serves not only as a measure of a company's performance but also as a reflection of investor confidence regarding its future outlook. It represents the wealth of shareholders and acts as a crucial indicator for assessing corporate performance within capital markets. Generally, higher firm value signals stronger market confidence in the firm's ability to sustain long-term profitability and growth (Brigham & Houston, 2020). One widely used metric to evaluate firm value is Tobin's Q, which measures the ratio between a firm's market value and the replacement cost of its assets. A Tobin's Q greater than one suggests that the firm is valued more highly by the market than the cost of its assets, often reflecting strong future growth expectations and effective management performance (Horne & Wachowicz, 2012).

This study specifically examines companies listed in the LQ45 Index from 2019 to 2023, encompassing the pre-pandemic, pandemic, and post-pandemic economic contexts. The LQ45 index was selected due to its composition of highly liquid stocks with large market capitalizations and relatively stable financial performance, making it a representative benchmark for capturing market reactions to internal corporate factors.

Several factors influencing firm value have been extensively examined in the financial literature. Leverage, for instance, reflects the extent to which a company utilizes debt in its capital structure. According to the trade-off theory, an optimal capital structure is achieved when the tax benefits of debt financing are balanced against the risk of bankruptcy (Brealey et al., 2019). In this study, leverage is measured using the Debt to Equity Ratio (DER), which represents the proportion of total liabilities relative to shareholders' equity. Empirical findings on the effect of leverage on firm value are mixed. Studies by Halawa.et al. (2024); Panjaitan and Suprapti (2023); Akustika and Wikartika (2023); Lestari (2023); Wardani et al. (2023); Susanti et al. (2023); Damayanti and Sucipto (2022); Prakoso (2022); Wahid et al. (2022); Bon and Handoko (2022); and Margono and Gantino (2021) report a positive relationship between leverage and firm value. In contrast, other studies by Ripaluddin et al. (2023); Inrawan and Lie (2024); Diana and Munandar (2023); Wardani et al. (2023); Surasmi and Putra (2022); and Darmawan et al. (2020) find a negative effect of leverage on firm value. Meanwhile, research by Faradila and Effendi (2023); Buti and Wiyarni (2023); Tahu and Susilo (2017) concludes that leverage has no significant effect on firm value.

Furthermore, firm size, measured using the natural logarithm of total assets (Ln Total Assets), is another important variable. Larger firms typically exhibit greater business diversification, stronger reputations, and easier access to external financing sources. Firm size is also commonly associated with operational stability and growth potential. However, the relationship between firm size and firm value has produced mixed empirical findings. Studies by Lestari (2023); Diana and Munandar (2023); Wardani (2023); and Atiningsih and Izzaty (2021) report a positive relationship between firm size and firm value. In contrast, research by Wahid et al. (2022) and Susanti and Restiana (2018) finds a negative effect of firm size on firm value. Meanwhile, studies by Halawa et al. (2024); Inrawan and Lie (2024); Prakoso et al. (2022); Bon and Hartono (2022); and Margono and Gantino (2021) conclude that firm size does not have a significant effect on firm value.

Another factor influencing firm value is profitability, which in this study is measured by Return on Assets (ROA). ROA reflects the efficiency with which a company utilizes its assets to generate profits. A high ROA indicates the company's strong ability to leverage its resources to produce optimal returns. The effect of profitability on firm value has been supported by numerous studies, including Halawa et al. (2024); Inrawan and Lie (2024); Lestari (2023); Faradilla and Effendi (2023); Buti and Wiyarni (2023); Susanti et al. (2023); Diana and Munandar (2023); Surasmi and Putra (2022); Damayanti and Sucipto (2022); Prakoso et al. (2022); Bon and Hartoko (2022); Margono and Gantino (2021); Atiningsih and Izzaty (2021); Darmawan et al. (2020); and Tahu and Susilo (2017), all of which find that profitability positively affects firm value. In contrast, research by Panjaitan and Supriati (2023) suggests that profitability negatively affects firm value, while Pratiwi et el. (2023) Ripaluddin et al. (2023); Nurwulandari et al. (2021) Reschiwati et al. (2020) concludes that profitability does not significantly affect firm value.

Nevertheless, the relationships among leverage, firm size, profitability, and firm value are not always linear. One of the variables that may moderate these relationships is dividend policy, commonly measured by the Dividend Payout Ratio (DPR), representing the proportion of net income distributed to shareholders. According to signaling theory, dividends function as a positive signal from management to the market, conveying the firm's financial stability and favorable outlook. Research conducted by Akustika and Wikartika (2023), Surasmi and Putra (2022), Halawa et al. (2024), Susanti et al. (2023); and Darmawan et al. (2020) demonstrates that dividend policy can moderate the relationship between leverage and firm value, whereas

studies by Buti and Wiyarni (2023), Diana and Munandar (2023), Wardani et al. (2023), and Damayanti and Sucipto (2022) report that dividend policy has no such moderating effect.

Moreover, the moderating role of dividend policy in the relationship between firm size and firm value also shows mixed results. Studies by Atiningsih and Izzaty (2021) found that dividend policy successfully moderates this relationship, while Halawa et al. (2024); Diana and Munandar (2023); Wardani et al. (2023); and Tahu and Susilo (2017) found no significant moderating effect. Similarly, the relationship between profitability and firm value, moderated by dividend policy, has produced inconsistent findings. Studies by Pratiwi et al. (2023), Susanti et al. (2023), Diana and Munandar (2023), Surasmi and Putra (2022); and Darmawan et al. (2020) support the moderating role of dividend policy in this context. Conversely, research by Halawa et al. (2024), Buti and Wiyarni (2023), and Damayanti and Sucipto (2022) found that dividend policy does not moderate the effect of profitability on firm value.

This study introduces a novelty by integrating dividend policy as a moderating variable in analyzing the influence of leverage, firm size, and profitability on firm value among companies listed in the LQ45 index. While previous studies have extensively examined the direct effects of financial factors on firm value, limited research has explored how dividend policy may alter these relationships, particularly in the context of emerging markets such as Indonesia. By focusing on LQ45 firms, which represent Indonesia's most liquid and high-performing companies, this research offers new empirical evidence on the conditional role of dividend policy, thereby contributing to a more nuanced understanding of firm value determinants. It is expected that this research will offer both practical and theoretical contributions. Practically, the findings may assist financial managers in formulating strategies that enhance firm value. Theoretically, this study enriches the literature on the determinants of firm value by incorporating the specific context of the Indonesian capital market. The primary objective of this study is to identify and examine the influence of leverage, firm size, and profitability on firm value, with dividend policy serving as a moderating variable. This approach aims to provide a more comprehensive understanding of strategies to enhance firm value within the Indonesian stock market environment.

1.2 Literature Review
1.2.1 Signaling Theory

Signaling theory explains that corporate management possesses superior information regarding the firm's condition and future prospects compared to external parties. Therefore, mechanisms are needed to convey this information to investors. One such mechanism is dividend policy. Companies that consistently distribute dividends send a positive signal to the market that they have healthy cash flows and stable profit prospects. According to Brigham and Houston (2020), investors positively respond to dividends as a strong financial signal, while Sudana (2015) emphasizes that dividend distribution enhances investor perception of a company's performance and stability. Hence, dividends not only function as a means of profit distribution but also serve as a communication tool that influences firm value in the capital market.

1.2.2 Trade-Off Theory

The trade-off theory posits that firms seek to achieve an optimal capital structure by balancing the benefits of debt usage—such as interest tax shields—against the financial costs incurred, including bankruptcy risk. Brigham and Houston (2020) argue that firms do not strictly avoid debt or rely solely on internal financing, but rather aim to establish an efficient combination of debt and equity. Sudana (2015) similarly notes that firms typically consider

profitability, cash flow stability, and investment needs when making capital structure decisions. Therefore, trade-off theory provides a fundamental framework for explaining how capital structure choices influence overall firm value.

1.2.3 Modigliani and Miller Theory

According to Modigliani and Miller (1961), in a perfect market without taxes or information asymmetry, dividend policy does not affect firm value, a concept known as the dividend irrelevance theory. However, in real-world markets, dividend policy may influence investor perception through signaling effects and its interaction with internal factors. Recent studies suggest that dividend policy can moderate the impact of leverage, profitability, and firm size on firm value, especially in emerging markets where information gaps are more prevalent (Brigham & Houston, 2020; Akustika & Wikartika, 2023). This study adopts the MM framework by positioning dividend policy as a moderating variable that may shape how financial fundamentals influence firm value, measured by Tobin's Q.

1.2.4 Firm Value

Firm value reflects the overall market perception of a company's worth and its ability to generate future cash flows. A higher firm value indicates stronger investor confidence and better performance prospects. One widely accepted market-based proxy to measure firm value is Tobin's Q, which compares the market value of a firm's assets to their replacement cost. A Tobin's Q greater than 1 suggests that the market values the firm more than the cost of its assets, indicating expectations of strong growth and profitability (Brigham & Houston, 2020).

1.2.5 Dividend Policy

Dividend policy is a strategic financial decision regarding the proportion of earnings distributed to shareholders versus those retained for reinvestment. Beyond its conventional role in distributing profits, dividend policy also acts as a moderating variable that can influence how internal factors, such as leverage, firm size, and profitability affect firm value. In signaling theory, consistent dividend payments signal management's confidence in future earnings, thereby strengthening investor perception. When high profitability is accompanied by stable dividends, the positive impact on firm value may be more pronounced. Empirical evidence supports this moderating effect: Akustika and Wikartika (2023) found that dividend policy moderates the effect of leverage on firm value, while Diana and Munandar (2023) and Pratiwi et al. (2023) observed that dividend policy strengthens the relationship between profitability and firm value.

1.2.6 Leverage

Leverage can enhance firm value when used optimally, as debt provides tax advantages through interest deductibility (tax shield). However, excessive leverage raises the risk of bankruptcy and increases interest burdens, potentially reducing firm value if not managed carefully (Brigham & Houston, 2020). Sudana (2015) emphasizes that the Debt to Equity Ratio (DER) is a key indicator for assessing a firm's capital structure and the management's efficiency in handling financing sources. A balanced DER reflects a healthy financial structure, while a high DER indicates a substantial debt burden that may raise concerns among investors. Thus, DER as a measure of leverage plays a vital role in evaluating a company's financial health and risk, which ultimately impacts its market value.

1.2.7 Firm Size

According to Brigham and Houston (2020), larger firms generally have broader access to funding sources, greater capacity for business diversification, and enhanced operational stability, making them appear more secure to investors and thereby increasing firm value. Large size is often associated with advantages in economies of scale, market reputation, and stronger bargaining power. Firm size measured by the natural logarithm (Ln) of total assets serves as an indicator that reflects the scale of operations and the resources owned by a company. The use of the natural logarithm aims to normalize the variable and reduce data skewness in statistical analysis. Sudana (2015) adds that firm size influences capital structure and financial policy, where large companies tend to be more flexible in managing funding and profit distribution. Therefore, Ln total assets, as a proxy for firm size, plays a crucial role in explaining performance and risk heterogeneity among firms, ultimately impacting firm value from the investor's perspective.

1.2.8 Profitability

Profitability is widely recognized as a fundamental measure of a company's financial performance, highlighting how effectively it turns operational activities into profits. Higher profitability not only indicates operational efficiency and effectiveness in asset management, but also functions as a favorable indicator for investors when assessing a company's future potential. Profitability also significantly influences decisions related to dividends and financial structuring. A common metric for evaluating profitability is Return on Assets (ROA), which measures a company's capacity to utilize its total assets to generate net income. According to Brigham and Houston (2020), ROA demonstrates managerial efficiency in asset use and directly connects to investor interest and market performance. Furthermore, Sudana (2015) asserts that sustained high profitability signals steady cash flows and a company's capability to meet obligations and distribute dividends, thereby reinforcing its market value.

1.3. Hypothesis Development
1.3.1 The Effect of Leverage on Firm Value

Leverage is a critical component of a firm's capital structure that can influence firm value, depending on how the company manages associated risks and how the market perceives its debt policies. According to trade-off theory, firms aim to balance the tax advantages of debt (tax shields) with the increased risk of financial distress. An optimal level of leverage can enhance firm value when used effectively (Brealey et al., 2019). From the perspective of agency theory, high leverage can serve as a disciplinary mechanism against managerial opportunism, as the obligation to make interest payments forces managers to use funds more prudently. Meanwhile, signaling theory suggests that high levels of leverage can be interpreted either positively or negatively depending on the firm's condition; if the firm can fulfill its debt obligations smoothly, it sends a positive signal to the market about the firm's future prospects (Ross et al., 2021). Brigham and Houston (2020) assert that leverage can increase firm value when used to finance productive projects that yield returns exceeding the cost of capital. Similarly, Sudana (2015) explains that efficiently managed leverage may positively affect firm value, whereas excessive leverage can heighten financial risk and erode investor confidence. Empirical studies such as Ripaluddin et al. (2023); Inrawan and Lie (2024); Diana and Munandar (2023); Wardani et al. (2023); Surasmi and Putra (2022); and Darmawan et al. (2020) have found that leverage has a negative effect on firm value. Based on the above theoretical and empirical insights, the following hypothesis is proposed:

H_1: Leverage has a negative effect on firm value.

1.3.2 The Effect of Firm Size on Firm Value

Firm size is an important indicator that reflects economies of scale, operational stability, and broader access to financial resources, all of which are theoretically associated with firm value. According to trade-off theory, larger firms generally face lower bankruptcy risk and enjoy easier access to external financing at a lower cost, which can enhance firm value (Brealey et al., 2019). From the perspective of agency theory, large firms often face greater managerial complexity and potential conflicts of interest; however, more established monitoring structures and greater transparency can reduce agency risks and increase investor trust. Meanwhile, signaling theory suggests that large firm size may serve as a positive signal to investors regarding market strength, earning capacity, and long-term resilience (Ross et al., 2021). Brigham and Houston (2020) assert that larger firms tend to be more liquid, more diversified, and better positioned to endure economic downturns, making them more attractive to investors and contributing to higher market value. Similarly, Sudana (2015) argues that firm size correlates positively with corporate reputation and profitability, which can strengthen positive market perceptions. Empirical studies such as Lestari (2023); Diana and Munandar (2023); Wardani (2023); and Atiningsih and Izzaty (2021) have found that firm size has a positive effect on firm value. Based on the theoretical and empirical evidence above, the following hypothesis is proposed:

H_2: Firm size has a positive effect on firm value.

1.3.3 The Effect of Profitability on Firm Value

Profitability is a key indicator of a company's efficiency and financial performance and is widely believed to have a significant impact on firm value. Within the framework of trade-off theory, highly profitable firms tend to avoid excessive use of debt, as they can finance their investment needs internally. This reduces the risk of bankruptcy and ultimately enhances firm value (Brealey et al., 2019). According to agency theory, high profitability reflects effective management of company resources, which can reduce conflicts between managers and shareholders, while simultaneously increasing market confidence in the firm's corporate governance. Meanwhile, signaling theory posits that firms capable of maintaining high profitability send a strong positive signal to investors regarding their stability and future prospects, which in turn increases the firm's market value (Ross et al., 2021). Brigham and Houston (2020) emphasize that high profitability demonstrates a company's ability to generate returns from its assets, thereby creating greater value for shareholders. In line with this, Sudana (2015) argues that consistent profitability not only reflects managerial performance but also serves as a crucial factor in attracting investor interest and enhancing firm value. Empirical findings from studies such as Halawa et al. (2024); Inrawan and Lie (2024); Lestari (2023); Faradilla and Effendi (2023); Buti and Wiyarni (2023); Susanti et al. (2023); Diana and Munandar (2023); Surasmi and Putra (2022); Damayanti and Sucipto (2022); Prakoso et al. (2022); Bon and Hartoko (2022); Margono and Gantino (2021); Atiningsih and Izzaty (2021); Darmawan et al. (2020); and Tahu and Susilo (2017) have provided consistent evidence that profitability has a positive effect on firm value. Based on this theoretical foundation, the following hypothesis is proposed:

H_3: Profitability has a positive effect on firm value.

1.3.4 The Effect of Leverage on Firm Value Moderated by Dividend Policy

Within the framework of trade-off theory, firms aim to balance the tax advantages of debt (tax shields) with the increasing risk of financial distress associated with high leverage, making optimal capital structure decisions essential for maximizing firm value (Brealey et al., 2019). However, agency theory adds that high debt levels may trigger conflicts between managers and bondholders, and in this context, dividend policy can serve as an additional disciplinary mechanism that reduces the likelihood of fund misuse. According to signaling theory, dividend policy functions as a communication tool through which management signals the company's financial stability and future prospects to investors. Firms that continue to distribute dividends despite high leverage send a positive signal that they possess strong cash flows and sound financial management. Brigham and Houston (2020) emphasize that consistent dividend payments can enhance market confidence in a firm, even when the capital structure is heavily reliant on debt. Similarly, Sudana (2015) highlights that a stable dividend policy can alleviate investor concerns regarding the risks of leverage and reinforce the company's image as a financially responsible entity. Therefore, dividend policy has the potential to moderate the relationship between leverage and firm value. Empirical studies by Akustika and Wikartika (2023), Surasmi and Putra (2022), Halawa et al. (2024), Susanti et al. (2023); and Darmawan et al. (2020) have shown that dividend policy can moderate the influence of leverage on firm value. Based on this reasoning, the following hypothesis is proposed:

H_4: Dividend policy moderates the effect of leverage on firm value.

1.3.5 The Effect of Firm Size on Firm Value Moderated by Dividend Policy

The effect of firm size on firm value may be moderated by dividend policy, as both variables play a crucial role in shaping investor perceptions. According to the trade-off theory, larger firms generally face lower bankruptcy risk and enjoy lower financing costs, enabling them to enhance firm value through economies of scale and operational efficiency (Brealey et al., 2019). From the perspective of agency theory, large firms typically have more complex organizational structures and monitoring systems, which may increase the potential for agency conflicts. However, a consistent dividend policy can help mitigate such conflicts by channeling excess cash to shareholders. In addition, signaling theory suggests that dividend policy serves as a signal of a firm's credibility and financial stability to the market. Large firms that consistently distribute dividends can reinforce their image as stable and trustworthy entities. Brigham and Houston (2020) emphasize that large firms with stable dividend policies are more likely to gain favorable market perceptions due to their strong earnings capacity and commitment to shareholders. Similarly, Sudana (2015) notes that large firms have greater capabilities in maintaining liquidity and consistently distributing dividends, which in turn can increase firm value. Therefore, dividend policy may strengthen the relationship between firm size and firm value. Studies by Atiningsih and Izzaty (2021) have empirically shown that dividend policy can moderate the effect of firm size on firm value. Based on this rationale, the following hypothesis is proposed:

H_5: Dividend policy moderates the effect of firm size on firm value.

1.3.6 The Effect of Profitability on Firm Value Moderated by Dividend Policy

The effect of profitability on firm value has the potential to be moderated by dividend policy, as both variables convey important signals regarding a firm's financial performance and future prospects. According to the trade-off theory, highly profitable firms tend to rely on internal financing to avoid debt-related costs and the risk of financial distress, which can ultimately enhance firm value (Brealey et al., 2019). In the context of agency theory, high

profitability reflects managerial efficiency in utilizing assets, but retained earnings that are not distributed may trigger agency conflicts if managers misuse excess cash. In this regard, dividend policy functions as a disciplinary mechanism by distributing profits to shareholders, thereby reducing potential conflicts. Furthermore, signaling theory emphasizes that dividend payments made by profitable firms serve as a strong signal to investors regarding the stability of earnings and the company's positive outlook. Brigham and Houston (2020) also highlight that firms maintaining high profitability while consistently distributing dividends are more likely to gain greater market trust, which positively affects firm value. This view aligns with Sudana (2015), who argues that high earnings should be complemented by appropriate dividend policies to optimally enhance firm value. Empirical studies conducted by Pratiwi et al. (2023), Susanti et al. (2023), Diana and Munandar (2023), Surasmi and Putra (2022); and Darmawan et al. (2020) have provided evidence that dividend policy can moderate the relationship between profitability and firm value. Based on the above discussion, the following hypothesis is proposed:

H_6: Dividend policy moderates the effect of profitability on firm value.

1.4 Framework

Based on the theoretical framework, previous studies, and the research problems formulated as the basis for hypothesis development, the conceptual framework of this study is presented in the following research model, as illustrated in Figure 1 below
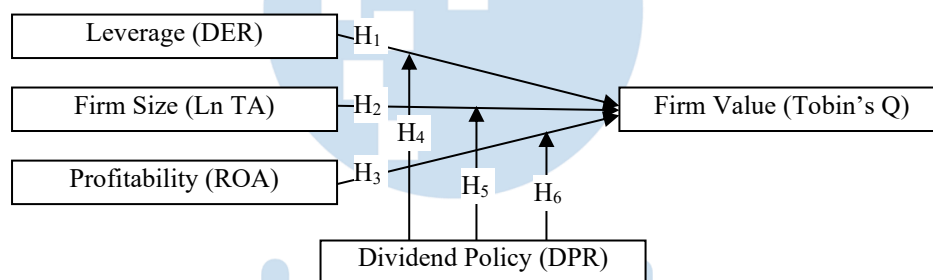
Figure 1 Conceptual Model Method
Source: Processing Data (2025)

2. RESEARCH METHODOLOGY

2.1 Methodology

This study employs a quantitative approach with an explanatory method, aiming to examine the causal relationship between leverage, firm size, profitability, dividend policy, and firm value. The data used in this research are secondary data in the form of financial statements obtained from the Indonesia Stock Exchange (IDX) and the official websites of the sampled companies. The population of this study consists of 67 companies included in the LQ45 Index on the Indonesia Stock Exchange during the 2019–2023 period.

2.2 Data Analysis Technique

The data analysis technique employed in this study is multiple linear regression with a moderating variable, using the Moderated Regression Analysis (MRA) approach. The analysis was conducted using panel data and processed with EViews 13 software. Panel data analysis was chosen because the dataset includes multiple companies (cross-sections) observed over several years (time series). This method is used to control for unobserved heterogeneity across entities and to provide more efficient and unbiased estimates compared to using either cross-

sectional or time-series data alone. Prior to regression analysis, model selection tests were conducted, including the Chow Test (to choose between the Fixed Effect Model [FEM] and Common Effect Model [CEM]), the Hausman Test (to compare FEM and Random Effect Model [REM]), and the Lagrange Multiplier Test (to compare REM and CEM).

2.3 Definition Operasional Variables

In this study, firm value is the dependent variable, while dividend policy is treated as the moderating variable. The independent variables consist of leverage, firm size, and profitability. The operational definitions of the variables are presented in Table 2 below

Table 1 Definition Operasional Variables

Variable	Definisition	Measuremen	Scala
Leverage	The large or small amount of debt used by a company that is used to finance its operational activities. (Jihadi et al., 2021)	$DER = \dfrac{Total\ Debt}{Total\ Equity}$ (Jihadi et al., 2021; Prakoso et al., 2022)	Ratio
Firm Size	The size of the total assets owned by the company (Jihadi et al., 2021)	Firm Size = Ln (Total Asset) (Jihadi et al., 2021)	Ratio
Profitability	The level of net profit that can be achieved by the company when running its operations. (Jihadi et al., 2021)	$ROA = \dfrac{Earning\ After\ Tax\ (EAT)}{Total\ Assets}$ (Jihadi et al., 2021)	Ratio
Dividend policy	DPR is a ratio calculated by comparing dividends per share with earnings per share. (Bon & Hartoko, 2022)	$DPR = \dfrac{Dividend\ per\ share}{Earning\ per\ share}$ (Bon & Hartoko, 2022)	Ratio
Firm Value	A standard measure used to assess firm value is Tobin's Q, which is the ratio of the company's market value of assets (market capitalization) to the replacement cost of the company's assets (Inrawan & Lie, 2024)	$TOBIN'S\ Q = \dfrac{MVE + DEBT}{TA}$ (Inrawan & Lie, 2024)	Ratio

Source: Processed Data (2025)

3. RESULT AND DISCUSSION
3.1 Descriptive Statistics

Based on purposive sampling, 19 companies met the criteria for this study. Given the five-year research period, a total of 95 observations were obtained. The following presents the descriptive statistics of the research sample.

Table 2 Deskriptive Statistics

	DER	SIZE	ROA	DPR	TOB_Q
Mean	1.821579	32.47259	0.094821	0.600691	2.048567
Median	0.810000	32.34696	0.066200	0.475800	1.234675
Maximum	6.630000	35.31545	0.454300	3.839400	16.26333
Minimum	0.170000	30.42479	0.003700	0.019900	0.531228
Std. Dev.	2.065803	1.491168	0.088623	0.501969	2.535644
Skewness	1.238925	0.464000	1.795651	3.407579	3.939272
Kurtosis	2.850526	1.979141	6.164786	20.66947	19.27579
Jarque-Bera	24.39158	7.534046	90.69856	1419.682	1294.267

	DER	SIZE	ROA	DPR	TOB_Q
Probability	0.000005	0.023121	0.000000	0.000000	0.000000
Sum	173.0500	3084.896	9.008000	57.06560	194.6138
Sum Sq. Dev.	401.1489	209.0168	0.738281	23.68547	604.3722
Observations	95	95	95	95	95

Source: Secondary Data (Processed, 2025)

Based on Table 3, the minimum value of Leverage (DER) is 0.170000, observed in KLBF in 2023. The maximum value is 6.630000, recorded by BBNI in 2021. The average (mean) value is 1.821579 with a standard deviation of 2.065803. Since the standard deviation exceeds the mean (2.065803 > 1.821579), this indicates that the Leverage (DER) variable exhibits a high degree of variability and the data are not homogeneous.

The minimum value of Firm Size (SIZE) is 30.42479, shown by ITMG in 2020, while the maximum value is 35.31545, observed in BMRI in 2023. The average value is 32.47259 and the standard deviation is 1.491168. As the standard deviation is smaller than the mean (1.491168 < 32.47259), this suggests that the SIZE variable is relatively homogeneous, indicating a well-distributed dataset with low variability.

The minimum value of Profitability (ROA) is 0.003700, recorded by BBNI in 2020, and the maximum is 0.454300, observed in ITMG in 2022. The mean value is 0.094821, with a standard deviation of 0.088623. Since the standard deviation is lower than the mean (0.088623 < 0.094821), the ROA variable is also considered homogeneous, with a good distribution and low variability.

The minimum value of Dividend Policy (DPR) is 0.019900, recorded by PTBA in 2023, while the maximum value is 3.839400, shown by BBCA in 2021. The average value is 0.600691 with a standard deviation of 0.501969. Because the standard deviation is less than the mean (0.501969 < 0.600691), the DPR variable shows homogeneity, indicating a good distribution and low variability in the data.

The minimum value of Firm Value (Tobin's Q) is 0.531228, found in ANTM in 2021, while the maximum value is 16.26333, recorded by UNVR in 2019. The mean is 2.048567, and the standard deviation is 2.535644. Since the standard deviation is greater than the mean (2.535644 > 2.048567), this implies that the Tobin's Q variable is not homogeneous, indicating high variability in the dataset.

3.2 Normality Test
Structure I: The Effect of Leverage, Firm Size, and Profitability on Firm Value

Table 3 Results of Normality Test Structure I

Long-run Normality Test Date: 07/08/25 Time: 21:07 Sample: 2019 2023 Included observations: 95		
	Statistic	Prob.
Skewness	0.606511	0.272088
Skewness 3/5	1.989146	0.023343
Kurtosis	1.438641	0.075126
Normality	2.957905	0.227876

Source: Secondary Data (Processed, 2025)

Based on the normality test, the probability value is 0.227876, which is greater than 0.05, indicating that the data are normally distributed.

Structure II: The Effect of Leverage, Firm Size, and Profitability on Firm Value Moderated by Dividend Policy

Table 4 Results of Normality Test Structure II

Long-run Normality Test Date: 07/08/25 Time: 21:07 Sample: 2019 2023 Included observations: 95		
	Statistic	Prob.
Skewness	0.358258	0.360075
Skewness 3/5	0.924121	0.177712
Kurtosis	1.782182	0.03736
Normality	3.139731	0.208073

Source: Secondary Data (Processed, 2025)

Based on the normality test, the probability value is 0.208073, which is greater than 0.05, indicating that the data are normally distributed.

3.3 Multicollinearity Test
Structure I: The Effect of Leverage, Firm Size, and Profitability on Firm Value

Table 5 Results of Multicollinearity Test Structure I

Variance Inflation Factors Date: 07/08/25 Time: 21:58 Sample: 1 95 Included observations: 95			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	39.28857	1416.101	NA
DER	0.015604	4.241197	2.374952
SIZE	0.037910	1443.831	3.006317
ROA	5.096850	3.079402	1.427670

Source: Secondary Data (Processed, 2025)

Based on the multicollinearity test, it is found that the Variance Inflation Factor (VIF) values for all variables in this study are less than 10 (VIF < 10). Therefore, it can be concluded that none of the variables exhibit multicollinearity.

Structure II: The Effect of Leverage, Firm Size, and Profitability on Firm Value Moderated by Dividend Policy

Table 6 Results of Multicollinearity Test Structure II

Variance Inflation Factors Date: 07/08/25 Time: 22:00 Sample: 1 95 Included observations: 95			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	40.06167	1456.998	NA
DER	0.016132	4.424094	2.477369
SIZE	0.038352	1473.859	3.068841
ROA	5.053444	3.080732	1.428287
DPR	0.115546	2.564011	1.047712

Source: Secondary Data (Processed, 2025)

Based on the multicollinearity test, it is found that the Variance Inflation Factor (VIF) values for all variables in this study are less than 10 (VIF < 10). Therefore, it can be concluded that none of the variables exhibit multicollinearity.

3.4 Model Selection Analisys
3.4.1 Structure I: The Effect of Leverage, Firm Size, and Profitability on Firm Value

1. Chow Test

Table 7 Results of Chow Test for Structure I

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	17.923260	(18,73)	0.0000
Cross-section Chi-square	160.549181	18	0.0000

Source: Secondary Data (Processed, 2025)

Based on the Chow Test, the Cross-section F value is 0.0000 (< 0.05), indicating that the appropriate model is the Fixed Effect Model.

2. Hausman Test

Table 8 Results of Hausman Test for Structure I

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	22.284808	3	0.0001

Source: Secondary Data (Processed, 2025)

Based on the Hausman Test, the Cross-section random value is 0.0001 (< 0.05), which also supports the selection of the Fixed Effect Model.

3. Lagrange Multiplier (LM) Test

Table 9 Results of Lagrange Multiplier (LM) Test for Structure I

Lagrange Multiplier Tests for Random Effects Null hypotheses: No effects Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Crosssection	Time	Both
Breusch-Pagan	80.21036	0.144666	80.35503
	(0.0000)	(0.7037)	(0.0000)

Source: Secondary Data (Processed, 2025)

Based on the Breusch-Pagan result from the Lagrange Multiplier (LM) Test is 0.0000 (< 0.05), suggesting that the Random Effect Model is preferred.

Considering the results of the Chow Test, Hausman Test, and LM Test, it can be concluded that the most appropriate model for this study is the Fixed Effect Model.

3.4.2 Structure II: The Effect of Leverage, Firm Size, and Profitability on Firm Value Moderated by Dividend Policy

1. Chow Test

Table 10 Results of Chow Test for Structure II

Redundant Fixed Effects Tests Equation: Untitled Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	8.278029	(18,69)	0.0000
Cross-section Chi-square	109.288883	18	0.0000

Source: Secondary Data (Processed, 2025)

Based on the Chow Test, the Cross-section F value is 0.0000 (< 0.05), indicating that the appropriate model is the Fixed Effect Model.

2. Hausman Test

Table 11 Results of Hausman Test for Structure II

Correlated Random Effects - Hausman Test Equation: Untitled Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	26.054862	7	0.0005

Source: Secondary Data (Processed, 2025)

Based on the Hausman Test, the Cross-section random value is 0.0005 (< 0.05), which also supports the selection of the Fixed Effect Model.

3. Lagrange Multiplier (LM) Test

Table 12 Results of Lagrange Multiplier (LM) Test for Structure II

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided			
(all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	29.47789	0.316886	29.79478
	(0.0000)	(0.5735)	(0.0000)

Source: Secondary Data (Processed, 2025)

Based on the Breusch-Pagan result from the Lagrange Multiplier (LM) Test is 0.0000 (< 0.05), suggesting that the Random Effect Model is preferred.

Considering the results of the Chow Test, Hausman Test, and LM Test, it can be concluded that the most appropriate model for this study is the Fixed Effect Model.

3.5 Panel Data Regression Analysis
3.5.1 Structure I: The Effect of Leverage, Firm Size, and Profitability on Firm Value

Table 13 Panel Data Regression Results for Structure I

Dependent Variable: TOB_Q				
Method: Panel Least Squares				
Date: 07/08/25 Time: 21:46				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 19				
Total panel (balanced) observations: 95				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	33.07461	15.31252	2.159972	0.0341
DER	-0.820012	0.339819	-2.413087	0.0183
SIZE	-0.923081	0.478194	-1.930349	0.0574
ROA	4.666914	2.032537	2.296103	0.0245
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.926772	Mean dependent var		2.048567
Adjusted R-squared	0.905706	S.D. dependent var		2.535644
S.E. of regression	0.778628	Akaike info criterion		2.537174
Sum squared resid	44.25710	Schwarz criterion		3.128598
Log likelihood	-98.51576	Hannan-Quinn criter.		2.776154
F-statistic	43.99445	Durbin-Watson stat		1.304263
Prob(F-statistic)	0.000000			

Source: Secondary Data (Processed, 2025)

Based on Table 14, the regression equation is as follows:

TOB_Q = 33.07461- 0.820012*DER - 0. 0.923081*SIZE + 4.666914*ROA

The regression coefficient for leverage (DER) is -0.820012 with a probability value of 0.0183 (< 0.05), indicating that leverage has a significantly affect firm value. Therefore, Hypothesis 1 (H1) is accepted. The regression coefficient for firm size (SIZE) is -0.923081 with a probability value of 0.0574 (> 0.05), suggesting that firm size does not have a significant effect on firm value. Thus, Hypothesis 2 (H2) is rejected. The regression coefficient for

profitability (ROA) is 4.666914 with a probability value of 0.0245 (< 0.05), indicating that profitability has a significantly influence firm value. Accordingly, Hypothesis 3 (H3) is accepted. Furthermore, the Adjusted R-squared value is 0.905706, meaning that leverage, firm size, and profitability collectively explain 90.57% of the variation in firm value, while the remaining 9.43% is attributed to other factors not included in the model.

3.5.2 Structure II: The Effect of Leverage, Firm Size, and Profitability on Firm Value Moderated by Dividend Policy

Table 14 Panel Data Regression Results for Structure II

Dependent Variable: TOB_Q				
Method: Panel Least Squares				
Date: 07/08/25 Time: 21:54				
Sample: 2019 2023				
Periods included: 5				
Cross-sections included: 19				
Total panel (balanced) observations: 95				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	39.52649	15.91216	2.484043	0.0154
DER	-0.731698	0.336530	-2.174247	0.0331
SIZE	-1.116450	0.494498	-2.257744	0.0271
ROA	-4.934260	3.200834	-1.541555	0.1278
DPR	-4.545111	12.09878	-0.375667	0.7083
DER_DPR	0.125055	0.248717	0.502802	0.6167
SIZE_DPR	0.101024	0.380411	0.265565	0.7914
ROA_DPR	19.82040	4.552649	4.353597	0.0000
	Effects Specification			
Cross-section fixed (dummy variables)				
R-squared	0.944392	Mean dependent var		2.048567
Adjusted R-squared	0.924244	S.D. dependent var		2.535644
S.E. of regression	0.697907	Akaike info criterion		2.346136
Sum squared resid	33.60812	Schwarz criterion		3.045092
Log likelihood	-85.44148	Hannan-Quinn criter.		2.628567
F-statistic	46.87286	Durbin-Watson stat		1.846590
Prob(F-statistic)	0.000000			

Source: Secondary Data (Processed, 2025)

Based on Table 15, the regression equation is as follows:

$$TOB\_Q = 39.52649 - 0.731698*DER - 1.116450*SIZE - 4.934260*ROA - 4.545111*DPR + 0.125055*DER\_DPR + 0.101024*SIZE\_DPR + 19.82040*ROA\_DPR$$

The regression coefficient for leverage (DER) moderated by dividend policy (DER_DPR) is 0.125055 with a probability value of 0.6167 (> 0.05), indicating that dividend policy does not moderate the effect of leverage on firm value. Therefore, Hypothesis 4 (H4) is rejected. The regression coefficient for firm size (SIZE) moderated by dividend policy (SIZE_DPR) is 0.101024 with a probability value of 0.7914 (> 0.05), indicating that dividend policy does not moderate the effect of firm size on firm value. Thus, Hypothesis 5 (H5) is rejected. The regression coefficient for profitability (ROA) moderated by dividend policy (ROA_DPR) is 19.82040 with a probability value of 0.0000 (< 0.05), indicating that dividend policy significantly moderates the effect of profitability on firm value. Hence, Hypothesis 6

(H6) is accepted. Furthermore, the Adjusted R-squared value is 0.924244, which implies that leverage, firm size, and profitability collectively explain 92.42% of the variance in firm value, while the remaining 7.58% is influenced by other factors not included in the model.

3.6. Discussion
3.6.1 The Effect of Leverage on Firm Value

The results of this study indicate that leverage, as measured by the Debt to Equity Ratio (DER), has a significant negative effect on firm value. In other words, the higher the proportion of debt in the capital structure, the lower the firm's value as reflected by Tobin's Q. This finding suggests that investors perceive excessive debt as an increase in financial risk and a potential threat to future operational sustainability. Theoretically, this outcome aligns with the frameworks of trade-off theory and signaling theory.

According to trade-off theory, firms may benefit from the use of debt due to the tax shield on interest payments. However, when the DER exceeds the optimal threshold, bankruptcy costs, agency conflicts, and reduced financial flexibility begin to outweigh the benefits, ultimately lowering firm value (Brigham & Houston, 2020; Sudana, 2015). From the perspective of signaling theory, high leverage may send a negative signal to the market, particularly if the firm lacks the sustainable capacity to meet its debt obligations. In the context of Indonesia's capital market—which is characterized by a high degree of information asymmetry—investors tend to interpret large amounts of debt as an indication of financial weakness rather than strength (Brigham & Houston, 2020; Sudana, 2015).

Several recent studies support these findings. Ripaluddin et al. (2023) found that high DER significantly reduces the firm value of manufacturing companies due to increased investor risk perceptions. Inrawan and Lie (2024) similarly reported that a highly leveraged capital structure negatively affects Tobin's Q, especially when not accompanied by strong profitability. Diana and Munandar (2023) asserted that leverage limits a firm's flexibility in making strategic decisions, thus negatively impacting market perception. Wardani et al. (2023) emphasized that an aggressive capital structure—indicated by high DER—amplifies cash flow uncertainty and undermines investor confidence. Likewise, Surasmi and Putra (2022), along with Darmawan et al. (2020), concluded that excessive leverage serves as a negative signal that decreases firm value, particularly among publicly listed companies in Indonesia. Collectively, these studies conclude that as the proportion of debt relative to equity increases, investors tend to assign lower valuations to firms due to concerns over financial risk and the burden of fixed obligations, such as interest and principal repayments, which in turn reduce market expectations regarding future firm performance.

As noted by Sudana (2015), DER is a key indicator of the health of a company's capital structure. A balanced DER indicates efficient debt management, whereas an excessively high DER reduces investor confidence by signaling over-reliance on external financing.

Therefore, the results of this study provide empirical evidence that even companies listed in the LQ45 index must exercise caution in managing their debt. An overly aggressive capital structure (high DER) can erode firm value, particularly if not accompanied by sound risk management and a clear outlook for profitability.

3.6.2 The Effect of Firm Size on Firm Value

The results of this study indicate that firm size, as measured by the natural logarithm of total assets (Ln Total Assets), does not have a significant effect on firm value measured by Tobin's Q. This finding suggests that the scale of a company's operations, as proxied by total assets, does not necessarily translate into higher market valuation in the context of firms listed

in the LQ45 index. Theoretically, this outcome can be interpreted through the lenses of the signaling theory and trade-off theory.

According to signaling theory, large firm size may convey a positive signal to the market, implying stronger reputation, greater market power, and lower default risk. However, when such size is not accompanied by superior profitability, efficiency, or innovation, it may fail to generate positive investor sentiment or enhance firm value (Brigham & Houston, 2020). In markets characterized by asymmetric information, such as Indonesia, investors may be more sensitive to indicators of firm performance rather than size alone.

From the perspective of the trade-off theory, larger firms typically enjoy better access to capital markets and have a more diversified risk profile. Nevertheless, if their scale is not managed effectively, or if it results in bureaucratic inefficiencies and agency problems, the expected advantages of firm size may not materialize in increased firm value (Sudana, 2015). Additionally, large firms might also face challenges such as inflexible cost structures or difficulties in responding swiftly to market dynamics, which may erode their perceived value in the eyes of investors.

This result is consistent with the empirical findings of several recent studies. Halawa et al. (2024) found that firm size did not significantly influence firm value, particularly in capital-intensive industries. Similarly, Inrawan and Lie (2024) concluded that although larger firms possess resource advantages, these do not automatically lead to higher market valuation unless complemented by robust profitability. Prakoso et al. (2022) observed that large asset bases could sometimes be associated with declining marginal returns, especially in firms experiencing stagnant growth. Bon and Hartoko (2022) noted that in certain sectors, firm size has limited explanatory power for investor perception and stock performance. Margono and Gantino (2021) emphasized that firm size must be accompanied by strategic agility and operational efficiency to positively impact firm value.

Brigham and Houston (2020) also assert that while size can provide financial stability and economies of scale, it is the strategic deployment of those advantages—rather than size itself—that determines firm valuation. Sudana (2015) concurs, stating that firm size is a contextual variable whose impact depends on other managerial, financial, and industry-specific factors.

In summary, the absence of a significant relationship between firm size and firm value in this study underscores the importance of qualitative aspects of firm management and performance. Large size alone, without effective governance, efficiency, and profitability, may not suffice to enhance firm value in the capital markets, particularly under the scrutiny of informed investors.

3.6.3 The Effect of Profitability on Firm Value

The results of this study indicate that profitability, as measured by Return on Assets (ROA), has a significant positive effect on firm value, as reflected by Tobin's Q. This finding reinforces the notion that the higher a firm's ability to generate profits from its total assets, the greater the market's appreciation of the firm's value. Profitability serves as a primary indicator that reflects managerial efficiency in utilizing assets and sends a positive signal to investors regarding the firm's potential for long-term growth and stability. This result also affirms that a firm's efficiency in managing its assets to generate profits is a key determinant in building investor confidence and enhancing market attractiveness. Theoretically, this finding is consistent with both the signaling theory and the trade-off theory.

From the perspective of signaling theory, high profitability constitutes a positive signal sent by management to the market, indicating sound financial prospects, operational efficiency,

and the ability to create sustainable added value (Brigham & Houston, 2020). This signal becomes particularly important in markets characterized by high levels of information asymmetry, such as Indonesia, where investors rely heavily on financial indicators to assess a company's future potential. A high ROA suggests that the firm is capable of generating profits from its assets, thereby fostering a positive perception of its market value.

From the trade-off theory perspective, high profitability enhances a firm's internal financing capability, reducing its dependence on external debt financing, which could otherwise increase the risk of bankruptcy. This implies that profitable firms enjoy greater financial flexibility and lower financial risk, which ultimately strengthens firm value (Sudana, 2015).

These findings are supported by numerous prior studies that consistently demonstrate the positive impact of ROA on firm value. For example, Halawa et al. (2024) and Inrawan and Lie (2024) found that ROA plays a crucial role in driving the increase of Tobin's Q, particularly in the banking sector and among LQ45 companies in Indonesia. Lestari (2023) and Faradilla & Effendi (2023) reported that highly profitable companies are more trusted by investors due to their ability to generate stable and sustainable cash flows. Buti & Wiyarni (2023) and Susanti et al. (2023) emphasized that profitability is a key variable that strengthens financial structure and enhances corporate image in the eyes of the market. Diana & Munandar (2023) and Surasmi & Putra (2022) also found that ROA directly influences firm value by reflecting the effectiveness of management strategies in asset optimization. Similarly, studies by Damayanti & Sucipto (2022), Prakoso et al. (2022), Bon & Hartoko (2022), and Margono & Gantino (2021) concluded that high profitability not only boosts investor confidence but also strengthens a firm's competitiveness in capital markets. Earlier studies, such as those by Atiningsih & Izzaty (2021), Darmawan et al. (2020), and Tahu & Susilo (2017), have consistently provided evidence that ROA plays a critical role in determining market assessments of a firm's long-term performance. These collective findings generally conclude that firms with higher ROA tend to have greater market valuations, as the profits generated from asset utilization serve as a fundamental indicator of market trust.

Brigham and Houston (2020) also explain that investors evaluate firms based on their ability to generate earnings from their assets. If a firm demonstrates consistently high ROA performance, it is considered efficient in capital utilization and deserving of a premium valuation in the market. Similarly, Sudana (2015) emphasizes that profitability is the principal benchmark in assessing operational success, which is ultimately reflected in increased firm value.

Thus, the results of this study provide strong empirical evidence that, in the context of LQ45 companies in Indonesia, profitability is a key variable that significantly and positively influences market perceptions of firm value. This finding highlights the importance for companies to continually improve operational efficiency and financial performance to gain value recognition from capital market investors.

3.6.4 The Effect of Leverage on Firm Value Moderated by Dividend Policy

The results of this study indicate that dividend policy does not moderate the relationship between leverage, as measured by the Debt to Equity Ratio (DER), and firm value, as reflected by Tobin's Q. This finding suggests that a firm's decision to distribute dividends to shareholders is insufficient to alter the negative effect of high leverage on market perception of firm value. In other words, a high level of debt continues to be perceived as a financial risk by investors, despite the presence of dividend payments.

From a theoretical perspective, signaling theory posits that dividends function as a positive signal from management to the market, indicating strong financial prospects and operational stability. However, in this case, the positive signal conveyed by dividends appears inadequate to offset the negative signal associated with high leverage. Investors are likely to prioritize the financial risks posed by excessive debt—such as interest obligations and bankruptcy risk—over the optimism conveyed through dividend payments.

According to trade-off theory, leverage can enhance firm value by providing tax advantages from interest deductibility. However, when DER exceeds its optimal level, the associated bankruptcy costs, agency problems, and reduced financial flexibility outweigh these tax benefits (Brigham & Houston, 2020; Sudana, 2015). Under such conditions, dividend policy is unlikely to counterbalance the deteriorating impact of excessive leverage on firm value.

Furthermore, Modigliani and Miller (1961) assert that in a perfect market, dividend policy is irrelevant to firm value. Although this theory has been extended in the presence of market imperfections—such as asymmetric information and agency costs, particularly prevalent in emerging markets like Indonesia—this study's findings indicate that dividend policy does not play a significant moderating role. The dominating signal perceived by investors comes from leverage levels, rather than from the company's dividend payouts.

This finding is supported by several previous studies. Buti and Wiyarni (2023) concluded that dividend policy fails to mitigate the negative effect of leverage on firm value, as investors are more sensitive to debt-related risk than to short-term shareholder returns. Diana and Munandar (2023) also revealed that dividend policy does not strengthen the relationship between leverage and firm value, especially when the capital structure is unhealthy. Similarly, Wardani et al. (2023) emphasized that firms with high DER continue to experience valuation declines despite consistent dividend distribution. Damayanti and Sucipto (2022) also noted that dividend payout is insufficient to alter investor perceptions of risk arising from high leverage, particularly when not supported by strong profitability or operational efficiency.

Overall, this study provides important empirical evidence that, in the context of LQ45 companies listed on the Indonesia Stock Exchange, dividend policy does not serve as an effective buffer in mitigating the negative impact of high leverage on firm value. This underscores the managerial implication that maintaining a sound capital structure is more critical for enhancing firm value than relying solely on dividend policy to influence investor perceptions.

3.6.5 The Effect of Firm Size on Firm Value Moderated by Dividend Policy

The results of this study indicate that dividend policy, as measured by the Dividend Payout Ratio (DPR), does not moderate the relationship between firm size, proxied by the natural logarithm of total assets (Ln Total Assets), and firm value, as measured by Tobin's Q. This finding suggests that firm size alone does not necessarily determine market valuation, and that dividend distribution decisions are not strong enough to amplify or alter the influence of firm size on market perception.

Theoretically, under signaling theory, larger firms are expected to convey positive signals to the market regarding their reputation, stability, and long-term resilience. Similarly, dividend payments are interpreted as signals that a company possesses sufficient cash flows and stable future prospects (Brigham & Houston, 2020). However, if a large firm lacks managerial efficiency, adequate profitability, or a clear investment strategy, these signals may not be strong enough to influence market perception—regardless of whether dividends are distributed. This issue is exacerbated in capital markets like Indonesia, where information asymmetry remains

high, prompting investors to rely more heavily on actual performance indicators rather than formal signals such as firm size or dividend payouts.

From the perspective of trade-off theory, large firms tend to enjoy advantages in risk diversification and greater access to external financing. Nevertheless, these benefits can diminish if not accompanied by efficient strategic management. In theory, DPR should bridge investor confidence through profit distribution, but the study's findings show that such distributions are insufficient to enhance firm value when firm size is not managed productively (Sudana, 2015).

Furthermore, according to the Modigliani and Miller (1961) theory, in a perfect market, dividend policy is irrelevant to firm value. While this theory has been widely debated in the context of market imperfections, the current findings are in line with M&M's proposition, as they reveal that dividend policy does not significantly moderate the effect of firm size on firm value.

This result is supported by several prior studies. Halawa et al. (2024) found that firm size does not necessarily affect firm value, particularly in capital-intensive industries. Buti and Wiyarni (2023) emphasized that dividend policy does not automatically improve the relationship between firm size and firm value, especially in market conditions sensitive to financial risk. Damayanti and Sucipto (2022) further asserted that dividend policy only has a significant impact when combined with solid financial performance, and not solely determined by firm size.

In conclusion, this study highlights the importance for companies not to rely solely on dividend policy to enhance firm value. Instead, firms should also focus on how firm size is strategically managed in order to deliver tangible contributions toward improving investor confidence and market valuation.

3.6.6. The Effect of Profitability on Firm Value Moderated by Dividend Policy

The findings of this study indicate that dividend policy, measured by the Dividend Payout Ratio (DPR), significantly moderates the relationship between profitability, as measured by Return on Assets (ROA), and firm value, as measured by Tobin's Q. This suggests that firms with high profitability tend to experience greater enhancement in firm value when accompanied by an appropriate dividend distribution policy. In other words, the distribution of profits to shareholders serves as an additional signal that reinforces market confidence in the firm's long-term prospects.

From the perspective of signaling theory, the combination of high profitability and consistent dividend payments sends a strong positive signal to investors, indicating that the firm is not only efficient in generating profits but also financially sound enough to distribute part of its earnings (Brigham & Houston, 2020). Dividend payments by profitable firms enhance the market's perception of stability, transparency, and the management's commitment to shareholder interests. This is particularly relevant in the context of the Indonesian capital market, where information asymmetry remains high and dividend policy becomes a crucial tool in reducing investor uncertainty.

In line with trade-off theory, firms with high profitability have greater internal capacity to finance operations and investments without relying on external funding. Under such circumstances, dividend payments do not compromise financial flexibility; rather, they enhance corporate reputation and investor perception of firm value (Sudana, 2015). Thus, firms that are both profitable and committed to regular dividend distributions are generally more highly valued by the market.

According to Modigliani and Miller's (1961) dividend irrelevance theory, in a perfect market, dividend policy has no effect on firm value. However, in real-world imperfect markets such as Indonesia's, dividend policy serves as a mechanism to mitigate information asymmetry. The results of this study thus challenge the M&M proposition and reinforce the practical importance of dividend policy as a strategic tool in shaping investor perception.

Several empirical studies support these findings. Pratiwi et al. (2023) and Susanti et al. (2023) found that dividend payout significantly strengthens the effect of ROA on firm value, suggesting that investors place higher value on firms that manage earnings efficiently and share profits with shareholders. Diana and Munandar (2023), as well as Surasmi and Putra (2022), also concluded that profitability contributes more meaningfully to firm value when accompanied by healthy dividend practices. Darmawan et al. (2020) added that consistent dividend policy in profitable firms increases market trust in the firm's long-term outlook.

In conclusion, the results of this study provide empirical evidence that dividend policy plays a critical role as a moderating variable that enhances the influence of profitability on firm value. This finding underscores the importance for firms not only to improve operational efficiency but also to manage their dividend policies strategically to gain greater recognition and valuation from the capital market.

4. CONCLUSION

Based on the results of the analysis and discussion, it was found that leverage, as measured by the Debt to Equity Ratio (DER), has a negative effect on firm value, while profitability, measured by Return on Assets (ROA), has a positive effect. In contrast, firm size, measured by the natural logarithm of total assets (Ln Total Assets), has no significant effect on firm value as proxied by Tobin's Q. Furthermore, the findings indicate that dividend policy, as measured by the Dividend Payout Ratio (DPR), moderates the relationship between profitability and firm value. However, dividend policy does not moderate the relationship between leverage or firm size and firm value. These findings suggest that while dividend policy can enhance the positive impact of profitability on firm value, it is insufficient to mitigate the negative effect of leverage or to strengthen the insignificant impact of firm size on firm value.

5. IMPLICATIONS

The findings of this study have significant theoretical and practical implications for the development of financial management theories and practices in capital markets. Theoretically, the result showing that leverage, as measured by the Debt to Equity Ratio (DER), has a significant negative effect on firm value (Tobin's Q) reinforces the relevance of both trade-off and signaling theories in explaining investor behavior in emerging markets like Indonesia. This suggests that a high level of debt is perceived as increasing bankruptcy risk and reducing financial flexibility, thus leading to lower market valuations. Meanwhile, the positive effect of profitability (ROA) on firm value supports the signaling theory, in which higher returns on assets reflect managerial efficiency and the firm's ability to generate sustainable value. In contrast, the finding that firm size (measured by the natural logarithm of total assets) has no significant effect on firm value implies that a large scale of operations does not necessarily translate into strategic strength unless accompanied by operational efficiency and solid financial performance. In capital markets characterized by high information asymmetry, as in Indonesia, investors tend to prioritize fundamental indicators like profitability over formal signals such as firm size.

With respect to dividend policy, the study finds that the Dividend Payout Ratio (DPR) is able to moderate the relationship between profitability and firm value, but not between

leverage or firm size and firm value. This suggests that dividends may serve as a reinforcing signal for the impact of financial performance on market perception, yet are insufficient to counterbalance the negative implications of aggressive capital structures or inefficient scale. This finding is consistent with Modigliani and Miller's (1961) theory, which posits that in imperfect markets, the effect of dividend policy on firm value is highly contextual and depends on other variables such as firm performance and risk exposure.

Practically, the results of this study offer several recommendations for corporate financial managers. Managers should exercise greater caution in financing decisions involving debt, as an overly aggressive capital structure may erode investor confidence and reduce firm valuation. Conversely, firms should focus on improving profitability through efficient asset management, as this has been empirically proven to enhance firm value. Firm size alone should not be relied upon as an indicator of market strength, and must be combined with operational effectiveness. Moreover, dividend policy should be viewed not merely as a means of distributing earnings, but as a strategic tool to strengthen positive financial signals to the market.

Future research is encouraged to incorporate non-financial variables such as ESG (Environmental, Social, and Governance) scores, corporate governance quality, and innovation strategies to better explain variations in firm value. Studies can also be industry-specific—targeting sectors like banking, manufacturing, or technology—since financial structures and strategic priorities vary by industry. In addition, longitudinal panel data analysis or crisis-based studies could provide deeper insights into how these relationships evolve under different economic conditions. Such approaches are expected to enrich academic literature and contribute more meaningfully to strategic financial decision-making in the capital market context.

6. LIMITATION

This study has several limitations that should be acknowledged when interpreting the findings and designing future research. First, the scope of this study is limited to companies listed in the LQ45 Index on the Indonesia Stock Exchange during the 2019–2023 period. As such, the results may not be generalizable to other sectors or to non-LQ45 companies, which may possess different operational characteristics and financial structures. Second, the independent variables employed in this study namely, leverage, firm size, and profitability as well as the moderating variable, dividend policy, only represent a subset of internal factors that influence firm value. In reality, numerous external factors such as macroeconomic conditions, market volatility, political stability, and industry-specific dynamics may also have significant impacts but are not incorporated into the current research model.

Third, the analytical method used in this study is panel data analysis with a Fixed Effect Model (FEM) approach. Although this model effectively controls for individual heterogeneity, it may have limitations in capturing long-term causal relationships or potential nonlinear interactions among variables. Fourth, the study relies solely on secondary quantitative data derived from the financial statements of publicly listed companies. This data does not capture qualitative aspects such as managerial motivations in financial decision-making, investor perceptions of corporate policies, or other strategic factors that may also influence firm value. Therefore, these limitations should be taken into account when interpreting the results, and they provide a basis for more comprehensive and in-depth future research.

By considering these constraints, it is hoped that subsequent studies will encompass a broader sample scope, integrate external factors more comprehensively, and adopt mixed-

method approaches to achieve a more holistic understanding of the dynamics that shape firm value in the Indonesian capital market.

7. RECOMMENDATIONS

Based on the research findings indicating that leverage, firm size, and profitability do not have a significant effect on firm value, and that dividend policy (Dividend Payout Ratio/DPR) only moderates the relationship between profitability and firm value, several recommendations can be proposed for relevant stakeholders, both in academic discourse and capital market practice.

First, for corporate management, particularly firms listed in the LQ45 Index, it is recommended not to solely focus on scaling up operations or adjusting capital structure as primary strategies to enhance firm value. Instead, companies should strengthen their strategies for achieving sustainable profitability and, more importantly, align such efforts with a consistent and credible dividend policy. This alignment serves as a strategic communication tool to the market, helping to build investor trust.

Second, for investors and capital market analysts, the findings suggest that fundamental indicators such as DER and firm size are not necessarily the primary determinants of firm value. Therefore, investors should consider the combination of profitability and dividend distribution policies as more reliable financial signals when assessing long-term performance and company prospects.

Third, for future researchers, it is suggested to expand the scope of variables studied, including both internal and external factors such as market volatility, macroeconomic stability, institutional ownership, and corporate governance (GCG), to obtain a more comprehensive understanding of the determinants of firm value. Future research could also adopt a mixed-method approach by integrating quantitative and qualitative data to explore investor perceptions regarding corporate financial policies more deeply.

By implementing these recommendations, it is expected that the research findings will contribute meaningfully to the advancement of financial management theory as well as to practical decision-making processes in the Indonesian capital market.

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PERBANDINGAN TINGKAT AKURASI FORECASTING SAMBEL PECEL DENGAN METODE DOUBLE MOVING AVERAGE DAN DOUBLE EXPONENTIAL SMOOTHING

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Abstract- *Cihayu pecel sauce is an instant processed chili sauce made from the main ingredients, namely cayenne pepper, peanuts, garlic, brown sugar, salt, and lime leaves. These ingredients are ground and mixed into a paste which is served as a complementary sauce for vegetable pecel dishes. The purpose of this study was to forecast the demand for Cihayu pecel sauce for 2025, while comparing 2 methods to obtain the best sales forecast results for Cihayu pecel sauce. The methods used in forecasting the demand for Cihayu pecel sauce are the Double Moving Average and Double Exponential Smoothing methods using time series data. Based on the tests that have been carried out, it was found that the Double Moving Average (DMA) method with 4-period parameters is the method that is used effectively with a MAD of 2.91, an MSE of 16.37 and a MAPE of 0.84%. This means that the DMA model with 4 parameters is the best model for forecasting the amount of sales at Cihayu pecel sauce MSMEs in Mirigambar Village.*

Keywords: Forecasting; Double Moving Average; Double Exponential Smoothing; Time Series Analysis; MSME

1. PENDAHULUAN
1.1 Latar Belakang

Perkembangan teknologi dan pertumbuhan ekonomi yang sangat pesat mendorong masyarakat Indonesia untuk memulai berbagai jenis usaha baru, khususnya dalam bentuk Usaha Mikro, Kecil, dan Menengah (UMKM) yang mampu bersaing di pasar domestik (Suryani, Nurul Moulita, & Aprilyanti, 2023). UMKM sebagai bentuk usaha produktif sangat potensial untuk dikembangkan karena dapat mendukung pertumbuhan ekonomi nasional, baik secara makro maupun mikro, serta turut mendorong kemajuan sektor-sektor lainnya (Undang-Undang No. 20 Tahun 2008). Selain itu, UMKM memiliki peran strategis dalam menjaga stabilitas ekonomi Indonesia serta membuka lapangan usaha yang lebih luas (Nadira, Dewy, Tiojay, & Anwar, 2023)(Dinanti & Suryati, 2023).

Salah satu produk unggulan dari UMKM di desa Mirigambar yaitu sambel pecel cihayu, sambel pecel merupakan jenis makanan yang menjadikan kacang tanah sebagai bahan utama, kemudian dicampur dengan berbagai rempah lainnya (Maximillian, Ayu Septi Fauji, &

Sardanto, 2022). Sambel pecel cihayu sendiri termasuk dalam kategori sambal instan yang dibuat dari bahan utama seperti cabai rawit, kacang tanah, bawang putih, gula merah, garam, dan daun jeruk (Bususan et al., 2024). Produsen mengolah seluruh bahan tersebut dengan cara dihaluskan dan dicampurkan hingga membentuk pasta, lalu disajikan sebagai saus pendamping untuk hidangan pecel sayur (Hasanah, 2022). Meskipun sambel pecel cihayu merupakan produk olahan instan tetapi tidak mengandung pengawet atau bahan kimia tambahan dan sudah memiliki sertifikasi halal, oleh karena itu sambel pecel cihayu bisa menjadi pilihan yang praktis tanpa perlu membuat dari awal.

Keunikan dari sambel pecel ini dengan sambel pecel pada umumnya terletak pada proses pembuatan. Karena pada saat penggorengan bahan baku tidak menggunakan minyak akan tetapi dengan cara disangrai. Hal tersebut yang membedakan sambal pecel ini karena lebih sehat dan tidak mengandung banyak minyak. Dalam pemilihan bahan baku juga menggunakan bahan yang berkualitas dan masih segar. Bahan baku diperolah dari hasil panen petani sekitar tempat tinggal.

Peramalan permintaan untuk produk sambel pecel merupakan langkah strategis yang sangat penting bagi kelangsungan bisnis karena dapat membantu produsen dalam merencanakan kapasitas produksi, mengoptimalkan persediaan bahan baku, dan mengelola sumber daya dengan lebih efisien (Irwansyah, Hutahaean, & Suparmadi, 2022). Dengan melakukan peramalan permintaan, produsen dapat mengantisipasi fluktuasi pasar dan memastikan ketersediaan produk sesuai dengan permintaan konsumen, sehingga dapat menghindari kerugian akibat kelebihan atau kekurangan stok (Saputra, Munir, & Rizki, 2023).

Forecasting adalah metode yang umum digunakan untuk merancang serta mengendalikan proses produksi suatu barang, agar persediaan dapat disesuaikan dengan kebutuhan yang ada (Suseno, Junianto, Sukmana, & Pamungkas, 2024). Secara khusus, metode ini dimanfaatkan untuk mengantisipasi perubahan permintaan pasar yang cenderung tidak stabil di masa mendatang. Perusahaan biasanya menjadikan hasil *forecasting* sebagai dasar dalam menentukan jumlah bahan baku dan produk yang akan diproduksi, dengan mengacu pada data historis yang tersedia (Dhivari, Aguchino, & Paduloh, 2024).

Perusahaan yang menyusun perencanaan produksi secara baik dan terintegrasi akan memperoleh manfaat berupa efisiensi dan efektivitas dalam penggunaan sumber daya, khususnya dalam mengubah input menjadi output. Dengan menggunakan peramalan permintaan konsumen, perusahaan dapat merancang strategi operasional yang mencakup pemilihan bahan baku, penentuan pemasok, pengaturan waktu pemesanan, perencanaan kapasitas produksi, penghitungan kebutuhan tenaga kerja, hingga pengelolaan aspek keuangan dan pemasaran secara lebih tepat (Junianto, Suseno, Mahariani, & Wibowo, 2024).

Saat ini, ketidaktepatan dalam memperkirakan angka penjualan menyebabkan produsen mengalami kesulitan dalam mengatur persediaan barang. Kondisi tersebut sering kali membuat produsen menghadapi masalah kekurangan atau kelebihan stok (Sariaman Manullang & Abil Mansyur, 2023). Akibat dari situasi ini, produsen menjadi tidak optimal dalam menyusun rencana pemesanan produk dan kurang responsif terhadap lonjakan permintaan, terutama saat permintaan berada pada puncaknya. Dampak lanjutan dari kondisi ini adalah meningkatnya beban biaya, seperti biaya penyimpanan yang tinggi, menurunnya mutu produk akibat masa simpan yang terlalu lama, serta hilangnya peluang untuk melakukan penjualan (Tanjung & Ikhwan, 2024).

Keadaan tersebut mendorong perusahaan untuk mengurangi alokasi modal pada beberapa jenis produk, yang kemudian berpengaruh terhadap penurunan kualitas pelayanan kepada konsumen (Listiowarni & Dewi, 2020). Permasalahan ini muncul karena sebagian besar UMKM belum mengimplementasikan metode peramalan yang berbasis sistem terintegrasi dan

terpercaya, yang sebenarnya dapat memberikan prediksi penjualan yang lebih akurat. Sistem tersebut juga dapat membantu pelaku UMKM dalam menentukan langkah yang tepat dalam pengelolaan inventaris dan pemenuhan permintaan pelanggan.

Penelitian ini menggunakan dua jenis metode peramalan, yaitu *double moving average* dan *double exponential smoothing*. Kedua metode tersebut termasuk dalam kategori *time series*, karena keduanya menggunakan data historis untuk memproyeksikan kejadian yang akan terjadi di masa mendatang (Ena, Adrianingsih, Malese, & Kalabahi, 2025). Peneliti membandingkan kedua metode tersebut untuk mengetahui metode mana yang paling tepat dan akurat dalam memperkirakan penjualan berdasarkan kasus penjualan produk sambel pecel olahan.

Penelitian terdahulu yang dilakukan oleh (Arsy, 2023) dengan menggunakan metode *Double Moving Average* (DMA) dan *Double Exponential Smoothing* (DES) Dua Parameter Holt penelitian ini bertujuan untuk menganalisis dan membandingkan efektivitas metode dalam meramalkan penjualan UMKM Biohart Yoghurt dihasilkan bahwa metode *Double Exponential Smoothing* (DES) Dua Parameter Holt lebih efektif. Penelitian sejenis juga dilakukan oleh (Mardiana, 2024) yang berjudul "Peramalan Double Moving Average Dan Double Exponential Smoothing Jumlah Penumpang Di Stasiun Kotabaru Malang" Penelitian ini mengevaluasi keakuratan prediksi dengan melakukan analisis kesalahan dengan menggunakan Error Rata-rata Square (MSE) dan Error Rata-rata Persentase (MAPE). Hasil penelitian ini dapat memprediksi jumlah penumpang kereta api di Stasiun Kotabaru Malang dengan perhitungan Double Moving Average karena telah terbukti lebih efektif daripada perhitungan Double Exponential Smoothing, berdasarkan perhitungan uji Mean Square Error dan Mean Absolute Percentage Error. Penelitian oleh (Kurniawan & Herwanto, 2021) dengan judul "Penerapan Metode *Double Exponential Smoothing* Dan *Moving Average* Pada Peramalan Permintaan Produk *Gasket Cap* Di PT. Nesinak Industries" Penelitian ini ditujukan untuk meramalkan permintaan produk pada periode selanjutnya untuk dapat memenuhi permintaan pelanggan. Pengolahan data pada penelitian ini menggunakan metode *double exponential smoothing* dari Brown dan *moving average* kemudian ditentukan dengan nilai *Mean Absolute Percentage Error* terendah yang digunakan pada peramalan permintaan produk di perusahaan tersebut. Nilai α yang diambil dari metode *double exponential smoothing* dari Brown merupakan nilai α dengan nilai *error* dua terendah dari 0,1 sampai dengan 0,9. Dari penelitian terdahulu diatas terdapat perbedaan dengan penelitian saat ini terutama pada penggunaan nilai α dan β untuk menentukan error yang paling terkecil dari hasil perhitungan menggunakan metode *double moving average* dan *double exponential smoothing* menggunakan data time series penjualan sehingga metode yang tepat untuk meramalkan permintaan pasti juga berbeda.

Berdasarkan permasalahan tersebut, penelitian ini merancang suatu model perhitungan yang bertujuan untuk membantu memprediksi penjualan produk sambel pecel olahan selama satu tahun ke depan dengan mengacu pada data penjualan sebelumnya. Hasil dari perhitungan tersebut diharapkan dapat memberikan kemudahan bagi pemilik usaha dalam mengambil keputusan terkait pengelolaan persediaan, serta membantu proses produksi agar berjalan lebih tepat, tanpa mengalami kelebihan atau kekurangan stok.

1.2 Kajian Literatur

Kata peramalan berasal dari istilah ramalan, yang merujuk pada kondisi atau situasi yang diprediksi akan terjadi di masa depan, sedangkan peramalan mengacu pada proses melakukan prediksi tersebut. Terdapat berbagai metode yang digunakan dalam kegiatan ini, seperti *single exponential smoothing*, *double exponential smoothing*, dan *triple exponential smoothing*, yang seluruhnya termasuk dalam kategori metode peramalan.

Menurut pendapat (Tanjung & Ikhwan, 2024) peramalan merupakan ilmu yang digunakan untuk memperkirakan kejadian di masa mendatang dengan cara mengolah data historis dan memproyeksikannya ke masa depan melalui pendekatan sistematis berbasis model. Proses ini memanfaatkan data dari masa lalu dalam bentuk model matematis untuk memprediksi kejadian yang akan datang.

Sementara itu menurut (Olga, 2023) menjelaskan bahwa perencanaan adalah proses penentuan tindakan yang akan dilakukan di masa depan. Salah satu bentuk perencanaan tersebut adalah perencanaan kebutuhan bahan, yaitu sistem yang dimulai dari menentukan jumlah serta waktu kebutuhan produk jadi, lalu menurunkannya menjadi permintaan bahan baku, komponen, dan sub-assemblies yang dibutuhkan dalam tahapan produksi sebelumnya.

Menurut (Saputra et al., 2023) mengemukakan bahwa peramalan adalah gabungan antara seni dan ilmu dalam memperkirakan kejadian mendatang. Proses ini mencakup pengambilan data penjualan dari periode sebelumnya dan menggunakannya untuk membuat proyeksi ke masa depan melalui model matematis. Berdasarkan berbagai pendapat tersebut, dapat disimpulkan bahwa metode peramalan merupakan alat penting bagi perusahaan dalam merancang strategi jangka panjang, meningkatkan pengambilan keputusan, serta mengoptimalkan kinerja operasional. Dengan menggunakan metode peramalan yang tepat, perusahaan dapat lebih siap dalam menghadapi berbagai tantangan di masa depan secara efisien dan terarah.

2. METODOLOGI PENELITIAN
2.1 Metodologi

Penelitian ini menggunakan pendekatan kuantitatif sebagai jenis analisis yang diterapkan. Pendekatan kuantitatif umumnya dilakukan dengan memanfaatkan teknik statistik untuk mengumpulkan dan mengolah data numerik dalam suatu studi. Dalam penerapannya, peneliti serta ahli statistik mengandalkan kerangka matematis dan teori-teori yang berkaitan dengan kuantitas variabel yang sedang dikaji(Sugiyono, 2020).
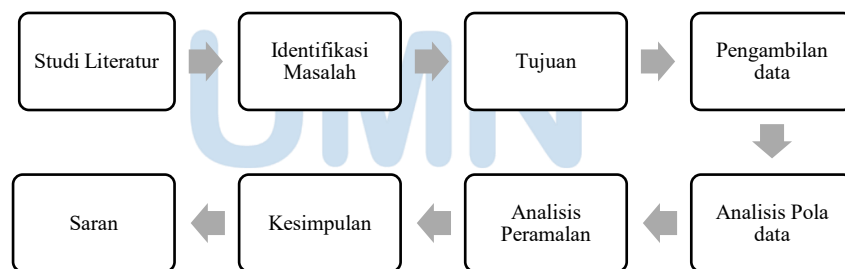
Gambar 1. Flowchart Penelitian

Pada penelitian ini, peneliti menganalisis data historis penjualan sambel pecel cihayu menggunakan data penjualan sambel pecel yang dikumpulkan selama periode 1 Januari hingga 31 Desember 2024. Dari rentang waktu tersebut, diperoleh sebanyak 12 bulan data, yang berisi rincian jumlah produksi dalam satuan pcs. Langkah awal dalam pengolahan data dilakukan dengan cara menganalisis data yang tersedia. Dalam proses peramalan, hal yang penting untuk diperhatikan adalah pola dan karakteristik data, karena hal ini akan sangat berpengaruh terhadap pemilihan metode perhitungan yang sesuai. Untuk mengidentifikasi pola-pola yang muncul. Setelah itu, data tersebut diuji terlebih dahulu untuk melihat tingkat stasioneritasnya. Selanjutnya, peramalan dilakukan dengan dua metode, yaitu *double moving average* dan *double exponential smoothing*. Dari kedua pendekatan tersebut, akan dipilih satu metode yang dianggap paling optimal dalam memperkirakan penjualan produk sambel pecel cihayu.

3. HASIL PENELITIAN DAN DISKUSI

Ketepatan dalam memilih metode yang sesuai dengan pola data akan berdampak pada akurasi interpretasi hasil analisis terhadap data yang dijadikan objek penelitian. Data hasil olahan tersebut ditampilkan pada tabel 1:

Tabel 1. Data Hasil Penjualan Sambel Pecel

No	Periode	Jumlah Penjualan
1	Januari	347
2	Februari	338
3	Maret	341
4	April	345
5	Mei	344
6	Juni	340
7	Juli	336
8	Agustus	348
9	September	344
10	Oktober	339
11	November	342
12	Desember	346

Peneliti melakukan *plotting* terhadap data jumlah produksi untuk memperoleh visualisasi pola pergerakan data, sebagaimana ditampilkan pada Gambar 2. Dari hasil penggambaran tersebut, terlihat bahwa data tidak menunjukkan adanya tren yang signifikan. Oleh karena itu, peneliti melanjutkan analisis menggunakan metode *Double Moving Average* dan *Double Exponential Smoothing*, karena kedua metode tersebut sesuai untuk data dengan karakteristik tanpa tren yang kuat.
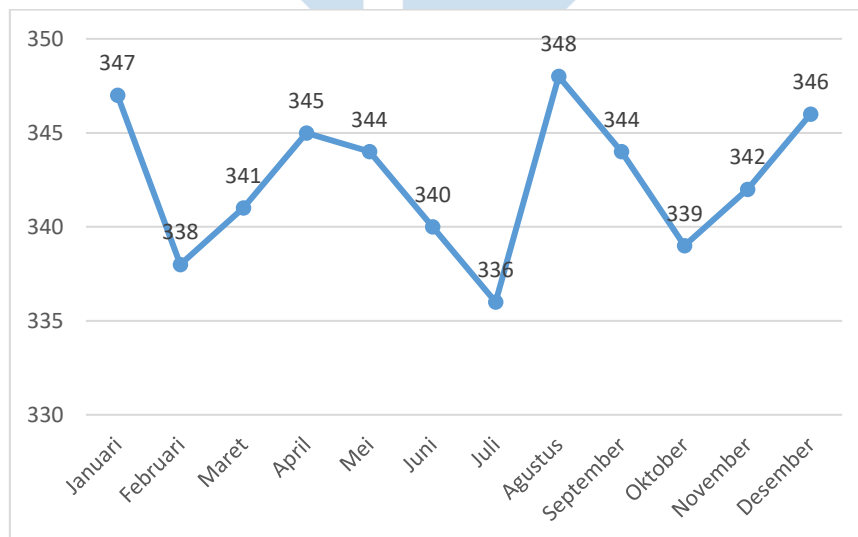
Gambar 2. Jumlah Penjualan Sambel Pecel 12 Bulan

Dari Gambar 2. dapat diketahui bahwa hasil penjualan sambel pecel selama 12 bulan menunjukkan fluktuasi yang lumayan stabil, dengan puncak produksi pada bulan Agustus sebesar 348 pcs dan titik terendah pada bulan Juli sebesar 336 pcs. Pada periode awal (bulan Januari-Februari), penjualan cenderung tidak stabil, dengan penurunan signifikan di bulan Februari hingga bulan Juli, yang kemungkinan disebabkan oleh harga bahan baku mahal sehingga mengurangi jumlah produksi. Periode pertengahan (bulan Juli-Agustus)

menunjukkan kenaikan yang cukup signifikan dengan penjualan mencapai 348 pcs, namun kembali menurun di bulan Agustus - Oktober dan mengalami kenaikan lagi pada bulan November - Desember. Fluktuasi ini mencerminkan perlunya perencanaan produksi yang konsisten, untuk mengurangi ketimpangan produksi dan meningkatkan hasil secara keseluruhan.

Berikut ini hasil analisis data untuk model *Double Moving Average* (DMA) dan *Double Exponential Smoothing* (DES). Model peramalan yang digunakan untuk memprediksi penjualan sambel pecel adalah model dengan tingkat akurasi tertinggi di antara kedua metode yang telah dianalisis. Pemilihan model terbaik dilakukan dengan mengacu pada hasil akurasi peramalan. Hasil analisis dari kedua metode beserta perbandingan tingkat keakuratannya disajikan pada bagian berikut.

Peneliti menyajikan hasil analisis data untuk metode *double moving average* (DMA). Proses analisis dilakukan dengan menggunakan nilai n sebanyak 2, 3, dan 4. Model peramalan yang dianggap paling akurat ditentukan berdasarkan selisih terkecil antara data aktual dan hasil prediksi penjualan sambel pecel. Sebaliknya, akurasi yang buruk ditandai dengan tingkat perbedaan yang tinggi. Semakin tinggi perbedaan antara nilai riil dan hasil peramalan, semakin buruk pula akurasinya.

Tabel 2. Data Perhitungan Akurasi Peramalan DMA dengan n = 2

Periode	Xt	S't	S"t	at	bt	Ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347									
Feb-24	338	342.5								
Mar-24	341	339.5	341	338	-3					
Apr-24	345	343	341.25	344.75	3.5	335	10	10	100	2.90
May-24	344	344.5	343.75	345.25	1.5	348	-4.25	4.25	18.06	1.24
Jun-24	340	342	343.25	340.75	-2.5	347	-6.75	6.75	45.56	1.99
Jul-24	336	338	340	336	-4	338	-2.25	2.25	5.06	0.67
Aug-24	348	342	340	344	4	332	16	16	256	4.60
Sep-24	344	346	344	348	4	348	-4	4	16	1.16
Oct-24	339	341.5	343.75	339.25	-4.5	352	-13	13	169	3.83
Nov-24	342	340.5	341	340	-1	335	7.25	7.25	52.56	2.12
Dec-24	346	344	342.25	345.75	3.5	339	7	7	49	2.02
						349				
							Total	70.50	711.25	20.53
							Average	7.83	79.03	2.28

Dari Tabel 2. peramalan menggunakan parameter 2 periode menghasilkan nilai peramalan jumlah penjualan sambel pecel berikutnya sebanyak 349 pcs dan *Nilai Error Mean Absolute Deviation* 7,83, *Mean Squared Error* 70,03 dan *Mean Absolute Percentage Error* 2,28%.

Tabel 3. Data Perhitungan Akurasi Peramalan DMA Dengan n = 3

Periode	Xt	S't	S"t	at	bt	Ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347									
Feb-24	338									
Mar-24	341	342								
Apr-24	345	341.33								
May-24	344	343.33	342.22	344.44	1.1					
Jun-24	340	343	342.56	343.44	0.4	346	-5.56	5.56	30.86	1.63
Jul-24	336	340	342.11	337.89	-2.1	344	-7.89	7.89	62.23	2.35
Aug-24	348	341.33	341.44	341.22	-0.1	336	12.22	12.22	149.38	3.51
Sep-24	344	342.67	341.33	344	1.3	341	2.89	2.89	8.35	0.84
Oct-24	339	343.67	342.56	344.78	1.1	345	-6.33	6.33	40.11	1.87
Nov-24	342	341.67	342.67	340.67	-1.0	346	-3.89	3.89	15.12	1.14
Dec-24	346	342.33	342.56	342.11	-0.2	340	6.33	6.33	40.11	1.83
						342				
							Total	45.11	346.17	13.17
							Average	6.44	49.45	1.88

Dari Tabel 3. peramalan menggunakan parameter 3 periode menghasilkan nilai peramalan jumlah penjualan sambel pecel berikutnya sebanyak 342 kg dan *Nilai Error Mean Absolute Deviation* 6,44, *Mean Squared Error* 49,45 dan *Mean Absolute Percentage Error* 1,88%.

Tabel 4. Data Perhitungan Akurasi Peramalan DMA dengan n = 4

Periode	Xt	S't	S"t	at	bt	Ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347									
Feb-24	338									
Mar-24	341									
Apr-24	345	342.75								
May-24	344	342.00								
Jun-24	340	342.50								
Jul-24	336	341.25	342.13	340.38	-0.6					
Aug-24	348	342.00	341.94	342.06	0.0	340	8.21	8.21	67.38	2.36
Sep-24	344	342.00	341.94	342.06	0.0	342	1.90	1.90	3.59	0.55
Oct-24	339	341.75	341.75	341.75	0.0	342	-3.10	3.10	9.64	0.92
Nov-24	342	343.25	342.25	344.25	0.7	342	0.25	0.25	0.06	0.07
Dec-24	346	342.75	342.44	343.06	0.2	345	1.08	1.08	1.17	0.31
						343				
							Total	14.54	81.84	4.21
							Average	2.91	16.37	0.84

Dari Tabel 4. peramalan menggunakan parameter 4 periode menghasilkan nilai peramalan jumlah penjualan sambel pecel berikutnya sebanyak 343 pcs dan *Nilai Error Mean Absolute Deviation* 2,91, *Mean Squared Error* 16,37 dan *Mean Absolute Percentage Error* 0,84%.

Analisis data untuk model *Double Moving Average* (DMA) dilakukan dengan menggunakan nilai α sebesar 0,1, 0,2, dan 0,3. Akurasi peramalan jumlah penjualan sambel pecel diukur berdasarkan tingkat perbedaan antara data riil dan hasil peramalan. Perbedaan yang rendah menunjukkan hasil peramalan yang akurat, sedangkan perbedaan yang tinggi menandakan akurasi yang buruk. Dengan kata lain, semakin besar selisih antara nilai riil dan prediksi, maka akurasi model tersebut semakin menurun.

Tabel 5. Data Perhitungan Akurasi Peramalan DES dengan α = 0,1

periode	Xt	S't	S"t	at	bt	ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347	347	347	347	0					
Feb-24	338	346.10	346.91	345.29	-0.09	347	-9	9	81	2.66
Mar-24	341	345.59	346.78	344.40	-0.13	345	-4	4.2	17.6	1.23
Apr-24	345	345.53	346.65	344.41	-0.12	344	1	0.73	0.5	0.21
May-24	344	345.38	346.53	344.23	-0.13	344	0	0.28	0.1	0.08
Jun-24	340	344.84	346.36	343.32	-0.17	344	-4	4.10	16.8	1.21
Jul-24	336	343.96	346.12	341.80	-0.24	343	-7	7.15	51.2	2.13
Aug-24	348	344.36	345.94	342.78	-0.18	342	6	6.44	41.5	1.85
Sep-24	344	344.32	345.78	342.87	-0.16	343	1	1.40	1.9	0.41
Oct-24	339	343.79	345.58	342.00	-0.20	343	-4	3.71	13.7	1.09
Nov-24	342	343.61	345.38	341.84	-0.20	342	0	0.20	0.0	0.06
Dec-24	346	343.85	345.23	342.47	-0.15	342	4	4.36	19.0	1.26
						342				
							Total	41.57	243.51	12.19
							Average	3.78	22.14	1.11

Dari Tabel 5. peramalan menggunakan α = 0,1 menghasilkan nilai peramalan jumlah penjualan berikutnya sebanyak 342 pcs dan *Nilai Error Mean Absolute Deviation* 3,78, *Mean Squared Error* 22,14 dan *Mean Absolute Percentage Error* 1,11%.

Tabel 6. Data Perhitungan Akurasi Peramalan DES dengan α = 0,2

periode	Xt	S't	S"t	at	bt	ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347	347	347	347	0	0				
Feb-24	338	345.20	346.64	343.76	-0.36	347	-9	9	81	2.66
Mar-24	341	344.36	346.18	342.54	-0.46	343	-2	2.40	5.76	0.70
Apr-24	345	344.49	345.84	343.13	-0.34	342	3	2.92	8.53	0.85
May-24	344	344.39	345.55	343.23	-0.29	343	1	1.21	1.46	0.35
Jun-24	340	343.51	345.15	341.88	-0.41	343	-3	2.94	8.62	0.86
Jul-24	336	342.01	344.52	339.50	-0.63	341	-5	5.47	29.93	1.63
Aug-24	348	343.21	344.26	342.16	-0.26	339	9	9.13	83.28	2.62
Sep-24	344	343.37	344.08	342.65	-0.18	342	2	2.10	4.42	0.61
Oct-24	339	342.49	343.76	341.22	-0.32	342	-3	3.48	12.08	1.03
Nov-24	342	342.39	343.49	341.30	-0.27	341	1	1.09	1.19	0.32
Dec-24	346	343.12	343.41	342.82	-0.07	341	5	4.97	24.72	1.44
						343				
							TOTAL	44.70	261	13.07
							AVERAGE	4.06	23.73	1.19

Dari Tabel 6. peramalan menggunakan α = 0,2 menghasilkan nilai peramalan jumlah penjualan berikutnya sebanyak 343 pcs dan *Nilai Error Mean Absolute Deviation* 4,06, *Mean Squared Error* 23,73 dan *Mean Absolute Percentage Error* 1,19%.

Tabel 7. Data Perhitungan Akurasi Peramalan DES dengan α = 0,3

periode	Xt	S't	S"t	at	bt	ft	Xt-Ft	MAD	MSE	MAPE
Jan-24	347	347	347	347	0	0				
Feb-24	338	344.30	346.19	342.41	-0.81	347	-9	9	81	2.66
Mar-24	341	343.31	345.33	341.29	-0.86	342	-1	0.60	0.36	0.18
Apr-24	345	343.82	344.87	342.76	-0.45	340	5	4.57	20.88	1.32
May-24	344	343.87	344.57	343.17	-0.30	342	2	1.69	2.86	0.49
Jun-24	340	342.71	344.01	341.41	-0.56	343	-3	2.87	8.24	0.84
Jul-24	336	340.70	343.02	338.38	-1.00	341	-5	4.85	23.50	1.44
Aug-24	348	342.89	342.98	342.80	-0.04	337	11	10.62	112.78	3.05
Sep-24	344	343.22	343.05	343.39	0.07	343	1	1.24	1.54	0.36
Oct-24	339	341.96	342.72	341.19	-0.33	343	-4	4.46	19.92	1.32
Nov-24	342	341.97	342.50	341.44	-0.23	341	1	1.14	1.30	0.33
Dec-24	346	343.18	342.70	343.65	0.20	341	5	4.79	22.91	1.38
						344				
							TOTAL	45.83	295.30	13.39
							AVERAGE	4.17	26.85	1.22

Dari Tabel 7. peramalan menggunakan α = 0,3 menghasilkan nilai peramalan jumlah penjualan berikutnya sebanyak 344 pcs dan *Nilai Error Mean Absolute Deviation* 4,17, *Mean Squared Error* 26,85 dan *Mean Absolute Percentage Error* 1,22%.

Perbandingan antara model DMA dan DES secara menyeluruh dilakukan dengan melihat nilai numerik dari tingkat akurasi peramalan. Indikator akurasi yang digunakan dalam analisis ini meliputi *Mean Absolute Deviation* (MAD), *Mean Squared Error* (MSE), dan *Mean Absolute Percentage Error* (MAPE). Hasil perhitungan dari ketiga ukuran tersebut ditampilkan dalam Tabel 4.8 pada bagian berikut.

Tabel 8. Perbandingan Nilai Akurasi DMA dan DES

Akurasi Model	MAD	MSE	MAPE	Tingkat Akurasi
DMA n = 2	7.83	79.03	2.28	Sangat baik
DMA n = 3	6.44	49.45	1.88	Sangat baik
DMA n = 4	2.91	16.37	0.84	Sangat baik
DES α = 0,1	3.78	22.14	1.11	Sangat baik
DES α = 0,2	4.06	23.73	1.19	Sangat baik
DES α = 0,3	4.17	26.85	1.22	Sangat baik

Berdasarkan Tabel 8. peneliti menemukan bahwa nilai MAD terkecil diperoleh pada model DMA dengan n = 4, yaitu sebesar 2,91. Nilai MSE paling rendah juga terdapat pada model yang sama, yaitu sebesar 16,37, dan nilai MAPE terendah tercatat sebesar 0,84%. Perbandingan tingkat akurasi antar model menggunakan ukuran MAD, MSE, dan MAPE menunjukkan bahwa model DMA dengan n = 4 memberikan tingkat kesalahan peramalan paling kecil secara keseluruhan.

Oleh karena itu, model DMA n = 4 dapat disimpulkan sebagai model paling tepat untuk meramalkan volume penjualan produk UMKM Sambel Pecel Cihayu di Desa Mirigambar pada bulan-bulan yang akan datang. Berikut ini adalah hasil prediksi untuk lima bulan kedepan yang disajikan pada Gambar 3.
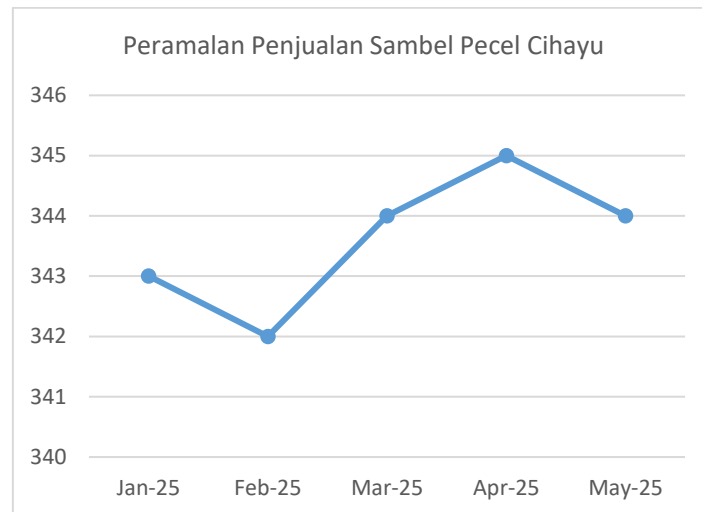
Gambar 3. Prediksi Penjualan Sambel Pecel Cihayu

Meskipun metode *Double Moving Average* (DMA) dengan parameter n=4 menawarkan akurasi tertinggi, pendekatan ini secara luas memiliki beberapa kendala. Salah satunya adalah ketergantungan pada stabilitas pola data. Akurasi model berbasis deret waktu, seperti DMA, dapat menurun drastis jika data sebelumnya mengalami variasi parah akibat peristiwa terkait kurangnya stok bahan baku di pasar (Junianto, Suseno, & Mahariani, 2025).

Pemilihan metode peramalan yang efektif sangat bergantung pada karakteristik data spesifik yang dianalisis, seperti yang ditunjukkan oleh beberapa studi. (Nadira et al., 2023) menemukan bahwa *Double Exponential Smoothing One* Parameter (BROWN) menghasilkan error terkecil, mengindikasikan akurasi lebih tinggi untuk data mereka yang mungkin memiliki tren yang terdeteksi baik atau pola lebih halus. Sebaliknya, penelitian (Mardiana, 2024), menyimpulkan bahwa Double Moving Average (DMA) lebih efektif daripada *Double Exponential Smoothing*, menyoroti kesesuaian DMA untuk data dengan volatilitas atau tren yang lebih jelas yang membutuhkan periode rata-rata lebih panjang. Sejalan dengan temuan (Mardiana, 2024), penelitian saat ini pada UMKM Sambel Pecel Cihayu juga menyimpulkan bahwa model DMA dengan parameter 4 periode (DMA n=4) adalah yang paling tepat untuk meramalkan volume penjualan sambel pecel cihayu di Desa Mirigambar, yang didukung oleh nilai error signifikan lebih rendah. Perbedaan ini menunjukkan bahwa pemilihan pendekatan optimal sangat kontekstual dan bergantung pada sifat data serta tujuan peramalan.

4. KESIMPULAN
4.1 Kesimpulan

Metode *Double Moving Average* dengan parameter 4 periode menghasilkan prediksi penjualan sambel pecel sebanyak 343 pcs, dengan nilai error *Mean Absolute Deviation* (MAD) sebesar 2,91, *Mean Squared Error* (MSE) sebesar 16,37, dan *Mean Absolute Percentage Error* (MAPE) sebesar 0,84%.

Sementara itu, metode *Double Exponential Smoothing* dengan α = 0,1 memberikan prediksi penjualan sebanyak 342 pcs, serta nilai error MAD 3,78, MSE 22,14, dan MAPE 1,11%.

Dari analisis data penjualan UMKM sambel pecel Cihayu menggunakan kedua metode tersebut, metode *Double Moving Average* dengan parameter 4 periode terbukti paling efektif berdasarkan nilai error yang lebih rendah. Oleh karena itu, model DMA dengan parameter 4

periode dipilih sebagai metode terbaik untuk meramalkan penjualan sambel pecel di Desa Mirigambar.

4.2 Keterbatasan

Penelitian ini, meskipun memberikan implikasi manajerial signifikan bagi UMKM sambel pecel Cihayu melalui akurasi peramalan permintaan menggunakan model DMA 4 periode untuk efisiensi produksi, pengelolaan stok, dan keputusan pemasaran, memiliki keterbatasan. Keterbatasan tersebut meliputi data historis yang terbatas (sehingga tidak sepenuhnya mencakup fluktuasi jangka panjang atau tren musiman ekstrem), asumsi stabilitas pola data oleh DMA (yang membuatnya rentan terhadap kejadian tak terduga seperti kelangkaan bahan baku atau perubahan perilaku konsumen), dan perbandingan hanya dua metode peramalan (DMA dan DES), tanpa melibatkan metode yang lebih kompleks, misalnya ARIMA atau machine learning. Secara akademis, studi ini berkontribusi pada literatur peramalan permintaan UMKM melalui aplikasi praktis dan perbandingan metode sederhana, serta menjadi dasar bagi penelitian lanjutan yang menguji metode lebih canggih atau menganalisis faktor-faktor eksternal yang memengaruhi permintaan produk UMKM di masa depan.

4.3 Saran

Untuk penelitian mendatang, kami menyarankan perluasan perbandingan metode peramalan dengan mencakup teknik yang lebih beragam, serta peningkatan jumlah data historis demi hasil peramalan yang lebih akurat dan optimal. Bagi UMKM Sambel Pecel Cihayu, implementasi model DMA 4 periode dari penelitian ini akan sangat membantu dalam memprediksi permintaan secara akurat, mengoptimalkan perencanaan produksi, pengelolaan stok, dan pengambilan keputusan pemasaran strategis. Ke depan, UMKM dianjurkan untuk rutin mengumpulkan data penjualan yang lebih rinci untuk analisis peramalan lanjutan dan pemahaman pasar yang lebih dalam

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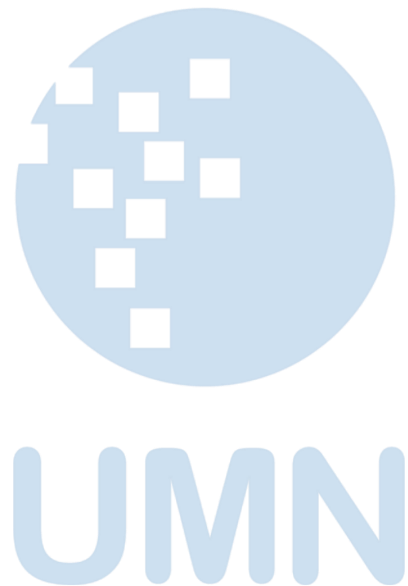
RELIGIOUS BELIEFS, INGREDIENT SAFETY, HALAL LOGO, AND PROMOTION IMPACT ON GEN Z'S PURCHASE INTENTION FOR WARDAH

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Abstract- Generation Z represents a promising market segment with distinct preferences for cosmetic products. This study examines the impact of Religious Belief, Ingredient Safety, Halal Logo, and Promotion on the Purchase Intention of Wardah Halal Cosmetics among Generation Z. A quantitative approach with a causal research design was employed, involving 303 Muslim Generation Z women in the Jabodetabek area. Data were analyzed using multiple linear regression, including validity and reliability tests, classical assumption tests, regression equations, coefficient of determination tests, and significance tests (t-test) using IBM SPSS 27. Findings indicate that Ingredient Safety, Halal Logo, and Promotion significantly influence Purchase Intention, whereas Religious Belief does not have a significant effect. Future research should explore alternative variables and broader perspectives on halal cosmetics to enhance theoretical understanding. In conclusion, Wardah's success in attracting Gen Z consumers lies in its product safety, clear halal certification, and effective promotional strategies rather than relying solely on religious alignment.

Keywords: Religious Beliefs; Ingredient Safety; Halal Logo; Promotion; Purchase Intention; Generation Z

1. INTRODUCTION

1.1 Research Background

Generation Z, a demographic that has grown alongside technological advancements, represents a significant market segment in Indonesia. According to the Central Bureau of Statistics (2020), Generation Z comprises 27.94% of Indonesia's population, approximately 74.93 million individuals born between 1997 and 2012 (GoodStats, 2020). As this generation increasingly prioritizes skincare, the ZAP Beauty Index (2021) reports that 41.7% of Indonesian Gen Z women seek anti-aging skincare products. Furthermore, the Indonesian cosmetics market is projected to grow at an annual rate of 5.35% until 2028 (Indonesia.go.id, 2024), indicating a rising demand for beauty products, particularly those catering to Gen Z preferences.

Wardah Cosmetics has established itself as a leading brand that aligns well with this demographic. Founded in 1995 under PT Paragon Technology and Innovation (PT PTI), Wardah is Indonesia's pioneer in halal cosmetics. The brand upholds high-quality standards

under the leadership of its commissioner, Nurhayati Subakat, providing a diverse range of makeup, skincare, hair care, and body care product. Wardah actively targets Generation Z through product innovations such as the Wardah Perfect Bright Series, designed for young and adolescent skin. The brand also leverages social media platforms like Instagram, TikTok, and YouTube while collaborating with Gen Z beauty influencers such as Amanda Rawles, Yasmin Napper, and Arafah Rianti to enhance consumer engagement.

A 2022 survey by Compas Dashboard ranked Wardah among the top-selling cosmetic brands, placing it fourth in overall sales. Wardah's competitive advantage lies in its commitment to halal-based innovation, embracing a "Green Beauty" philosophy that emphasizes halal certification, natural ingredients, alcohol-free formulations, and cruelty-free products. This focus on high-quality and consumer-centric offerings strengthens its appeal among Generation Z.

Ingredient safety is a critical factor influencing consumer decisions in the cosmetic industry. The ZAP Beauty Index (2021) found that 68.6% of Gen Z consumers prioritize product safety when selecting beauty products. Rising concerns over the potential adverse effects of certain cosmetic ingredients have led to a 4% increase in consumers checking ingredient lists and a 93% rise in visits to the Indonesian Food and Drug Authority (BPOM) website (Rachmawati, 2023).

Marketing strategies also play a crucial role in influencing consumer behavior. Wardah's use of digital and social media marketing, where the brand creates engaging content on Instagram, TikTok, and YouTube. Collaborations with influencers and brand ambassadors who align with Wardah's values, such as Amanda Rawles, Yasmin Napper, and Arafah Rianti, further enhance brand engagement and purchase intention.

Despite rising awareness of halal cosmetics among Generation Z, the determinants of their purchase decisions remain inadequately examined. This study investigates whether religious belief, ingredient safety, the halal logo, and promotional strategies significantly influence Generation Z's purchase intention toward Wardah halal cosmetics. Prior research has often treated halal cosmetics as a monolithic category without focusing on specific brands; Wardah, as a pioneer in Indonesia's halal beauty sector, provides a unique case for analysis (Khan et al., 2021; Fauziah et al., 2024). By concentrating on Wardah, this research fills a gap in the literature and offers valuable insights into how these key factors shape brand-specific consumer preferences among young Muslim audiences.

The increasing awareness and demand for halal cosmetics among Generation Z reflect a significant shift in consumer preferences. Wardah, as a pioneer in Indonesia's halal cosmetic industry, has successfully positioned itself as a leading brand. However, despite its market dominance, research on the key factors influencing the purchase intention of halal cosmetics, particularly among Generation Z, remains limited. Understanding these factors is essential for businesses to develop effective marketing strategies and meet the evolving expectations of young Muslim consumers. This study aims to address this gap by examining the extent to which religious belief, ingredient safety, halal certification, and promotional strategies influence the purchase intention of Wardah's halal cosmetics.

Consumer decision-making in the halal cosmetics industry is inherently complex, shaped by a combination of religious values, ingredient safety, certification credibility, and promotional strategies. These elements interact dynamically with evolving social trends, digital engagement, and increasing consumer awareness—particularly among Generation Z—regarding halal product standards and ethical consumption. The rise of social media as a platform for halal product promotion has further intensified consumer exposure to halal values, halal certification, and safety assurances, which in turn influence purchase intentions (Alam et

al., 2022; Hasim et al., 2022). As Isa et al (2023) emphasize, the decision-making process in halal cosmetic consumption increasingly involves a blend of spiritual, informational, and rational evaluations. Additionally, interactive social media marketing has been shown to foster trust and strengthen brand engagement, particularly through influencer endorsements and halal-focused content (Tobing et al., 2024). While previous studies have explored halal cosmetics in a general context, there is a lack of research focusing on specific brands such as Wardah. To bridge this gap, this study is guided by several key research questions: To what extent does religious belief influence the purchase intention of Wardah halal cosmetics? How does ingredient safety impact Generation Z's purchasing decisions? What role does the halal logo play in shaping consumer perceptions? How do promotional strategies affect purchase intention? By answering these questions, this research provides valuable insights into the motivations behind consumer preferences.

Unlike previous studies that broadly examine halal cosmetics in a general or theoretical context, this research narrows its focus to a specific and influential brand—Wardah—and its interaction with Generation Z consumers, a digitally savvy and value-driven demographic. This targeted approach allows for a more nuanced understanding of how various factors influence purchase intention within a real-market setting. Guided by the following research questions:

By answering these questions, the research not only contributes to the academic literature on halal consumer behavior but also offers brand-level insights that can inform marketing strategies, product development, and consumer engagement. The findings are particularly valuable for halal cosmetic brands aiming to deepen their market reach and brand loyalty among younger Muslim consumers, whose expectations are increasingly shaped by product integrity, brand transparency, and digital interaction.

Ultimately, this research aims to provide actionable recommendations for cosmetic brands to refine their marketing strategies in the halal industry, ensuring they effectively meet consumer needs and expectations in a rapidly evolving market.

1.2. Literature Review

Religious Belief refers to an individual's knowledge, faith, religious practices, experiences, morality, and social attitudes related to religion. According to Sayyidah et al. (2022), religiosity reflects an individual's internal condition that drives them to act in accordance with their religious adherence. It signifies a commitment to religious teachings, which is evident in their behavior and daily activities (Khan et al., 2021). In the context of halal cosmetics, religious belief represents the values and attitudes influencing consumer decisions (Sayyidah et al., 2022). Ancok highlights three key aspects of Islamic religiosity—Islam (faith), Ibadah (worship), and Ihsan (ethics)—which are interconnected in shaping consumer behavior. Consumers with strong religious beliefs are more likely to purchase halal cosmetics (Monoarfa et al., 2023).

Ingredient Safety is a critical factor in cosmetic purchasing decisions. It refers to the assurance that ingredients do not pose health risks such as skin irritation, allergies, or toxicity (Nguyen et al., 2023). Growing concerns about health and environmental safety have led consumers to prefer eco-friendly and organic products (Khan et al., 2021). In Islam, both consumers and producers are responsible for ensuring that cosmetic ingredients meet halal and safety standards. Regulatory bodies like the FDA, European Commission, and BPOM mandate safety assessments, including toxicology and allergen tests (Florin et al., 2021). As awareness of ingredient safety rises, it significantly influences purchase intentions, particularly among Generation Z.

Halal Certification and Logo serve as a formal declaration ensuring that products comply with Islamic guidelines. Since 2021, halal certification in Indonesia has been regulated by BPJPH, requiring halal labeling to verify that products are free from prohibited substances (Amrullah, 2023). The halal logo issued by the Indonesian Ulema Council (MUI) acts as a trusted symbol for Muslim consumers, facilitating informed purchasing decisions (Yazid et al., 2021). Indonesian law (UU No. 33/2014) mandates halal certification for all marketed products, making the logo essential for consumer confidence and brand credibility (Fauzia et al., 2019).

Promotion plays a crucial role in influencing consumer purchase intentions. It involves communication strategies designed to introduce products, encourage consumer interest, and create a competitive advantage (Thamanda et al., 2024). Effective promotion fosters strong consumer-brand relationships by delivering persuasive messages through various channels, including digital platforms (Syachrony et al., 2023). Promotional activities influence consumer attitudes and encourage purchase behavior (Hertanu et al., 2022).

Purchase Intention refers to a consumer's likelihood of buying a product based on their evaluation of its attributes (Khan et al., 2021). It determines brand preference and ultimately drives purchasing behavior (Christanto et al., 2024). Companies must consider factors such as ingredient safety, promotions, and halal certification to enhance consumer purchase intentions (Keni et al., 2022; Wilson & Edelyn, 2022).

1.3 Hypothesis Development

Consumers with high religiosity tend to be more selective in choosing products that align with their ethical and moral values (Sari & Santoso, 2022). For example, Muslim consumers may prefer halal products, while others may choose eco-friendly options that resonate with their religious beliefs. Studies have shown a significant relationship between Religious Belief and Purchase Intention for halal cosmetics (Kusdiana et al., 2021). Consumers with strong religious beliefs integrate their faith into daily life, influencing their preference for halal cosmetic brands like Wardah, particularly among younger generations (Abdullah et al., 2021; Bukhari et al., 2020; Monoarfa et al., 2023). However, Khan et al. (2021) found that while Religious Belief significantly impacts Purchase Intention, its overall influence is relatively low.

H1. Religious Belief significantly influences Purchase Intention.

Consumers prioritize the safety and effects of cosmetic ingredients, leading to a growing preference for organic and eco-friendly products (Khan et al., 2021). Transparency in ingredient disclosure enhances consumer trust and purchase decisions (Nguyen et al., 2023). Ingredient safety is linked to concerns over potential side effects such as irritation, allergies, and toxicity, reinforcing the need for clear labeling (Rodrigues et al., 2021). Labels that highlight "paraben-free" or "sulfate-free" claims enhance consumer confidence and control over purchasing choices. Consumers also tend to avoid products with potentially harmful substances, even if they are cheaper (Lee et al., 2023). Ingredient Safety is particularly significant for Generation Z, who are highly critical of product formulations (Khan et al., 2021; Kim et al., 2022).

H2. Ingredient Safety significantly influences Purchase Intention.

The Halal logo is a crucial factor influencing purchase intention, especially among Muslim consumers, as it enhances trust and signals compliance with religious and quality standards (Isa, 2023; Rahmawati & Sumadi, 2023). It not only signifies compliance with Islamic law but also serves as a quality assurance marker (Zain et al., 2023). Consumers are

more likely to trust and purchase products with a halal certification (Ahmad et al., 2022). The logo reassures consumers that the product has undergone rigorous certification processes, strengthening brand credibility. From a business perspective, companies incorporating the Halal Logo into their marketing strategies can expand their market share and enhance customer loyalty (Shamsuddin et al., 2023). The logo not only appeals to Muslim consumers but also elevates a brand's overall reputation.

H3. Halal Logo significantly influences Purchase Intention.

Promotion is a vital marketing strategy that influences consumer purchase decisions. Effective promotional efforts, such as advertising, discounts, and digital campaigns, capture attention and drive purchase intention by enhancing consumer interest (Setiabudi & Sukaris, 2022; Hasibuan & Nuraeni, 2023). Informative and engaging promotions are particularly effective at motivating consumers to buy (Questania et al., 2024). Additionally, promotions foster stronger brand connections, reinforcing consumer confidence and purchase likelihood (Thamanda et al., 2024).

H4. Promotion significantly influences Purchase Intention.

1.3 Research Framework
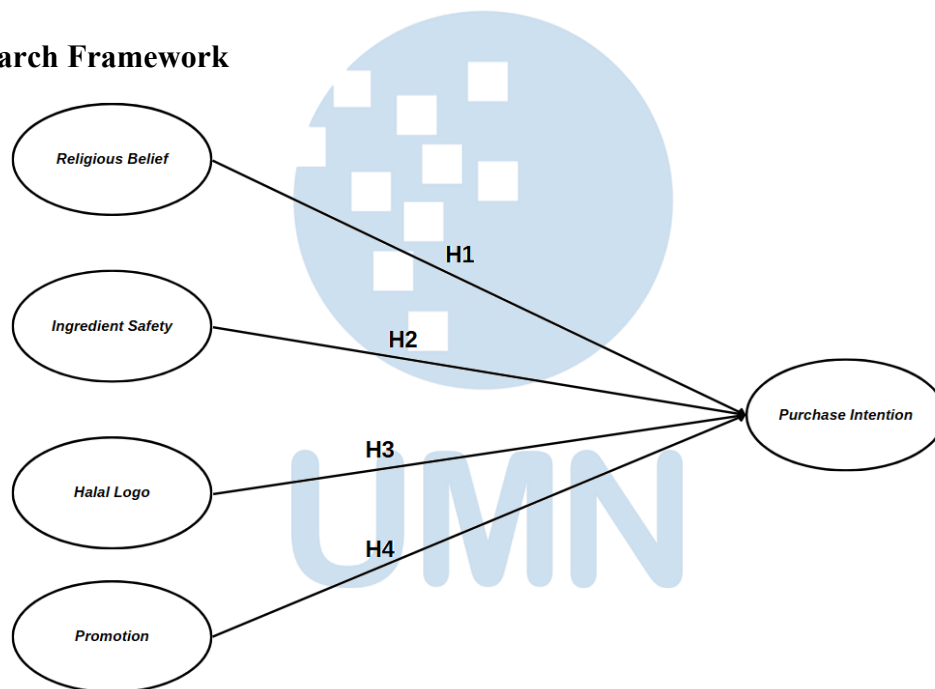
Picture 1: Research Framework

2. RESEARCH METHODOLOGY

According to Sekaran (2020), research data sources encompass individuals or informants who serve as subjects in this study. The research subjects in this study are Indonesian Muslim members of Generation Z who are familiar with or have used Wardah halal cosmetics. Meanwhile, Supranto (2018) defines research objects as various elements such as companies, brands, products, or other aspects that form the primary focus of a study. Based on these definitions, this study designates Wardah cosmetics as its research object. Furthermore, the study examines the influence of Religious Belief, Ingredient Safety, Halal Logo, and Promotion on Purchase Intention of Wardah halal cosmetics among Generation Z, incorporating these variables as the key focus of the research.

This study uses a quantitative research approach, which focuses on causal relationships and structured data analysis. Quantitative methods are systematic and planned, involving statistical testing of hypotheses using samples from defined populations (Boogie & Sekaran, 2020). The research framework is based on established theories and the researcher's prior knowledge and experience (Maizar et al., 2022).

Given its objective, this research is classified as causal research (Explanatory Research), which examines cause-and-effect relationships between two or more variables. According to Sari et al. (2022), causal research aims to predict how variations in one phenomenon relate to other variables and to test or refine existing theories. Sugiyono (2019) also supports this classification, emphasizing that causal research is conducted to analyze and test the influence of different variables. In this case, the study aims to investigate the impact of Religious Belief, Ingredient Safety, Halal Logo, and Promotion on the Purchase Intention of Wardah halal cosmetics among Generation Z.

Data collection was conducted through a survey method, where respondents answered a structured questionnaire distributed via Google Forms. This approach was selected for its cost efficiency, ease of deployment, and ability to reach a broad audience at respondents' convenience (Cvent, 2023; Aksara, 2021). The survey targeted Muslim female members of Generation Z who were aware of or had previously used Wardah halal cosmetics. The questionnaire employed a Likert scale to measure perceptions, opinions, and attitudes, using the following scoring system: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

The population in this study consists of Indonesian Muslim members of Generation Z who are familiar with or have used Wardah halal cosmetics. A sample is a subset of the population that represents its characteristics. The sample in this study includes Muslim women from Generation Z (born between 1997 and 2012) residing in Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek), with strong adherence to Islam and prior knowledge or experience using Wardah halal cosmetics.

To determine the sample size, the Sample-to-Item Ratio method was applied, following the recommendation of Gorsuch, Hatcher, and Suhr, which states that the ratio should not be less than 5:1 (Memon et al., 2020). Since the study contains 25 indicators, a minimum sample size of 125 respondents was required. This study employed non-probability sampling, specifically purposive sampling, where participants were selected based on predetermined criteria (Sugiyono, 2024). The inclusion criteria for respondents were:

    a. Muslim women from Generation Z (born between 1997–2012)
    b. Familiar with Wardah cosmetics
    c. Residing in the Jabodetabek area

The researcher utilized a survey questionnaire distributed online via Google Forms to collect data. The questionnaire included 25 indicators that is shown below:

Table 1. Research Variables

Variable	Code	Indicator	Source
Religious Belief	RB1	Saya melakukan namaz (sholat) lima kali sehari. (RB1)	(Khan et al., 2021; Maulani et al., 2022)
	RB2	Saya percaya kepada Allah, percaya kepada Muhammad (SAW) sebagai nabi terakhirnya, lalu percaya Quran & Sunnah. (RB2)	
	RB3	Saya akan melakukan atau telah menunaikan haji saya kapan pun ketika saya memiliki kesempatan itu. (RB3)	
	RB4	Saya dengan senang hati dan ikhlas membayar zakat saya tepat pada waktunya. (RB4)	

Variable	Code	Indicator	Source
	RB5	Saya senang meluangkan waktu untuk berkumpul dengan sesama umat Islam yang beriman. (RB5)	
Ingredient Safety	IS1	Bagi saya informasi mengenai kandungan bahan yang ada pada produk itu sangat penting.	Rosyada, M. A., & Saktiana, G. M. (2024); Chong et al., 2022
	IS2	Kandungan bahan pada produk mencerminkan keamanan dan kualitas produk.	
	IS3	Kandungan bahan produk kosmetik Wardah menggunakan bahan yang alami.	
	IS4	Bahan-bahan yang asing menimbulkan kecurigaan dalam hal "Kehalalan".	
	IS5	Bahan-bahan yang familiar pada produk kosmetik wardah mempengaruhi niat pembelian.	
Halal Logo	HL1	Bagi saya logo halal sangat penting dalam niat membeli sebuah produk kosmetik, terutama Wardah.	(Khan et al., 2021; Yudha et al., 2024)
	HL2	Saya selalu memperhatikan logo halal pada packaging kosmetik sebelum membeli produk kosmetik halal.	
	HL3	Adanya kata "Halal" pada produk atau kemasan membantu saya mengidentifikasi produk tersebut sebelum membeli produk kosmetik halal.	
	HL4	Saya mengetahui dengan jelas letak logo "Halal" pada kemasan produk kosmetik, sehingga memudahkan dalam pemberian informasi dan keyakinan terhadap kualitas produk.	
	HL5	Saya memilih produk Halal berdasarkan logo Halal yang ada di kemasan produk kosmetik.	
Promotion	P1	Pembelian produk berdasarkan merek kosmetik yang sudah terkenal atau familiar.	(Khan et al., 2021; Syachrony., et al 2023)
	P2	Bagi saya Promosi mempengaruhi niat pembelian produk kosmetik halal yaitu Wardah.	
	P3	Promosi yang dilakukan produk Wardah selalu menarik perhatian.	
	P4	Promosi memberikan penawaran langsung yang menarik untuk konsumen.	
	P5	Promosi bisa menjaga hubungan baik antara konsumen dengan produk atau brand sehingga dengan begitu saya lebih tertarik untuk membeli kosmetik Wardah.	
Purchase Intention	PI1	Saya akan memilih produk kosmetik halal untuk digunakan.	(Handriana et al., 2021; Maulani et al., 2022)
	PI2	Saya memiliki niat untuk membeli produk kosmetik halal di masa depan.	
	PI3	Saya akan cenderung membeli produk kosmetik halal Wardah di masa depan.	
	PI4	Saya akan memenuhi kebutuhan kosmetik saya dengan membeli kosmetik halal yaitu Wardah.	
	PI5	Bersedia membayar lebih untuk produk kosmetik dengan label halal asli seperti Wardah.	

Upon data collection, responses were tabulated in an Excel file and analyzed using multiple linear regression with IBM SPSS Statistics 27 software. The analysis involved several statistical tests to ensure the accuracy, consistency, and validity of the research findings. Validity testing was conducted to determine whether each questionnaire item accurately measured the intended construct. This is essential to ensure that the data collected truly reflect the variables being studied. Reliability testing, typically using Cronbach's Alpha, assessed the internal consistency of the measurement instrument, ensuring that the items within a variable produce stable and consistent results.

Furthermore, classical assumption tests were applied to meet the prerequisites of linear regression analysis. The normality test examined whether the residuals were normally distributed, a key assumption for valid significance testing. Multicollinearity testing ensured that there was no high correlation among independent variables, which could distort the regression estimates and weaken the interpretability of the model. Heteroscedasticity testing checked whether the variance of residuals was constant across all levels of the independent variables; its presence can lead to inefficient and biased estimates.

The regression equation was formulated to describe the relationship between the independent variables and the dependent variable. To assess the strength of this relationship, the coefficient of determination (R^2) was used. R^2 indicates the proportion of variance in the dependent variable that can be explained by the independent variables, thus reflecting the overall goodness of fit of the model.

Finally, multiple linear regression analysis, particularly the t-test, was performed to evaluate the individual significance of each independent variable. This test determines whether each predictor has a statistically significant effect on the dependent variable, thereby supporting or rejecting the hypotheses proposed in the study. Each of these tests plays a critical role in ensuring the rigor, reliability, and validity of the statistical conclusions.

3. RESULT AND DISCUSSION
3.1 Validity Test

Table 2. Validity Test Result

Indicator	Sig. (2-tailed)	Remark
RB1	0.001	VALID
RB2	0.001	VALID
RB3	0.001	VALID
RB4	0.001	VALID
RB5	0.001	VALID
IS1	0.001	VALID
IS2	0.001	VALID
IS3	0.001	VALID
IS4	0.001	VALID
IS5	0.001	VALID
HL1	0.001	VALID
HL2	0.001	VALID
HL3	0.001	VALID
HL4	0.001	VALID
HL5	0.001	VALID
P1	0.001	VALID
P2	0.001	VALID
P3	0.001	VALID
P4	0.001	VALID
P5	0.001	VALID
PI1	0.001	VALID
PI2	0.001	VALID
PI3	0.001	VALID
PI4	0.001	VALID
PI5	0.001	VALID

Based on the result above which includes responses from all participants regarding Wardah Halal cosmetics, it is shown that all variables—Religious Belief, Ingredient Safety, Halal Logo, Promotion, and Purchase Intention—consisting of 25 indicator items, have Sig. (2-tailed) values of 0.001, which is below the 0.05 threshold. According to the Pearson correlation test, this indicates that all indicators for the variables mentioned are valid.

Therefore, the questionnaire indicators used in this study are deemed capable of accurately measuring the intended constructs.

3.2 Reliability Test

Table 3. Reliability Test Result

Variable	Cronbach's Alpha	Remark
Religious Belief	0.638	Reliable
Ingredient Safety	0.601	Reliable
Halal Logo	0.703	Reliable
Promotion	0.633	Reliable
Purchase Intention	0.614	Reliable

Based on the results presented, the Religious Belief variable has a Cronbach's Alpha value of 0.638, Ingredient Safety is 0.601, Halal Logo is 0.703, Promotion is 0.633, and Purchase Intention is 0.614. According to Hair et al (2021), a Cronbach's Alpha value greater than 0.60 indicates that the data is reliable. Therefore, it can be concluded that the responses for each indicator in the questionnaire are consistent over time, and each variable reliably measures the intended construct.

3.3 Normality Test

Table 4. Normality Test Result

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PURCHASE INTENTION
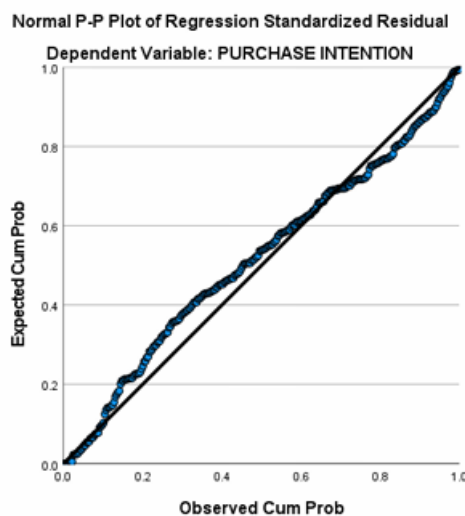
Based on the figure above, the results processed using the probability plot method indicate that the data points are distributed around the diagonal line and follow a pattern consistent with the diagonal direction. This suggests that the graphical pattern aligns with a normal distribution. Therefore, it can be concluded that the regression model satisfies the assumption of normality, and the error terms (residuals) are normally distributed.

3.4 Multicollinearity Test

Table 5. Multicollinearity Test

Variable	Tolerance	VIF	Remark
Religious Belief	0.78	1.282	No multicollinearity
Ingredient Safety	0.499	2.005	No multicollinearity
Halal Logo	0.522	1.915	No multicollinearity
Promotion	0.842	1.188	No multicollinearity

Based on the table above, the results of the data processing show that all variables have a Tolerance value greater than 0.10 and a VIF value less than 10. Specifically, the Religious Belief variable has a Tolerance value of 0.780 (greater than 0.10) and a VIF value of 1.282 (less than 10). The Ingredient Safety variable has a Tolerance value of 0.499 (greater than 0.10) and a VIF value of 2.005 (less than 10). The Halal Logo variable has a Tolerance value of 0.522 (greater than 0.10) and a VIF value of 1.915 (less than 10). Finally, the Promotion variable has a Tolerance value greater than 0.842 and a VIF value of 1.188 (less than 10). Therefore, it can be concluded that multicollinearity does not occur, and there is no correlation between the independent variables.

3.5 Regression Equation

Table 6. Coefficient Table

Model	Unstandardized B
(Constant)	0.701
Religious Belief	0.066
Ingredient Safety	0,163
Halal Logo	0.423
Promotion	0.181

The regression equation is derived from the Unstandardized B coefficients as follows:

$$Y = 0.701 + 0.066X_1 + 0.163X_2 + 0.423X_3 + 0.181X_4 + e$$

The regression coefficient for Religious Belief is 0.066, indicating that for every one-unit increase in Religious Belief, Purchase Intention increases by 0.066 units. The regression coefficient for Ingredient Safety is 0.163, meaning that a one-unit increase in Ingredient Safety leads to a 0.163-unit increase in Purchase Intention. The regression coefficient for the Halal Logo is 0.423, suggesting that each one-unit increase in the perception of the Halal Logo results in a 0.423-unit increase in Purchase Intention. Lastly, the regression coefficient for Promotion is 0.181, implying that a one-unit increase in Promotion corresponds to a 0.181-unit increase in Purchase Intention.

Table 7. Hypothesis Result Table

Variable	Sig.	Description
Religious Belief	0,153	Not Significant
Ingredient Safety	0,004	Significant
Halal Logo	0,001	Significant
Promotion	0,001	Significant

Religious Belief does not have a significant influence, as its p-value exceeds 0.05. This implies that among Generation Z consumers in the Greater Jakarta area, religious belief does

not strongly influence their intention to purchase Wardah halal cosmetics. This may be due to their exposure to diverse digital information, leading them to prioritize practical aspects such as Ingredient Safety, Halal Logo, and Promotion over religious conviction. These findings align with Hanifah (2023), who found that religiosity does not significantly affect purchase intention—suggesting that a high level of religious belief does not necessarily translate into an intention to buy halal cosmetics. Similarly, Kamanda et al. (2024) argue that while interest and intention are related, purchase intention represents the final stage before a buying decision. Therefore, Religious Belief is not a significant determinant of purchase intention for Wardah halal cosmetics.

Ingredient Safety have a statistically significant effect on Purchase Intention, as their significance values are below the 0.05 threshold. This suggests that consumers are increasingly concerned with the safety of cosmetic ingredients and the assurance of positive effects from product use. These findings are supported by Khan et al. (2021), who found that Ingredient Safety has a significant impact and plays a key role in shaping purchase intention, particularly among Generation Z, who are more critical of the products they use. Therefore, attention to Ingredient Safety in Wardah halal cosmetics can effectively enhance Purchase Intention within this demographic.

The Halal Logo have a statistically significant effect on Purchase Intention, as their significance values are below the 0.05 threshold. It serves as a symbol that the product meets recognized religious and quality standards certified by official bodies such as the MUI. For Muslim consumers—especially Generation Z—it provides assurance of product halalness, thereby strengthening trust and purchase intention toward Wardah halal cosmetics. This finding is supported by Khan et al. (2021) and Ahmad et al. (2022), who highlight the Halal Logo's key role in enhancing purchase intention. The logo creates a competitive advantage by distinguishing halal cosmetic products from similar alternatives lacking such certification. Therefore, the presence of the Halal Logo on Wardah products builds consumer confidence and positively contributes to Muslim women's purchase intention.

Promotion have a statistically significant effect on Purchase Intention, as their significance values are below the 0.05 threshold. This result is particularly supported among Generation Z, who are highly responsive to digital marketing efforts. Effective promotional strategies raise awareness, capture attention, and reinforce trust—especially when highlighting the product's halal status and safety. Through targeted promotion, Wardah successfully communicates brand values aligned with Generation Z's preferences for transparency, quality, and sustainability. These findings are consistent with research by Khan et al. (2021) and Thamanda et al. (2024), which show that promotion significantly influences purchase intention by fostering a stronger emotional connection between consumers and the brand. Thus, promotional activities not only attract but also build consumer confidence, ultimately enhancing Purchase Intention for Wardah halal cosmetics.

4. CONCLUSION

Based on the findings presented in the previous chapter, this study concludes that while religious belief remains a meaningful personal value for Muslim consumers, it does not significantly influence the purchase intention of halal cosmetics, specifically in the case of the Wardah brand. In contrast, ingredient safety, the presence of the halal logo, and promotional efforts are found to be significant predictors of Generation Z's intention to purchase Wardah halal cosmetics. These findings highlight a shift in consumer behavior among younger Muslim demographics, where rational and product-oriented considerations outweigh purely religious motivations in shaping purchasing decisions.

Ingredient safety emerges as a critical factor influencing consumer choice. Generation Z consumers prioritize cosmetics that are not only halal but also perceived as safe and effective. This finding emphasizes the importance of product quality assurance and transparency in formulation. Similarly, the halal logo serves not merely as a religious symbol but as a broader indicator of quality, safety, and trustworthiness. It acts as a visual certification that reinforces product legitimacy in both religious and safety dimensions. Moreover, promotional strategies, particularly those delivered through digital and social media platforms, play a significant role in capturing the attention of Generation Z. These platforms enable brands to connect more directly and persuasively with a demographic that is digitally native and highly responsive to interactive content.

Theoretically, this study contributes to the growing body of literature on halal consumer behavior by offering a brand-specific and generationally targeted perspective. While many previous studies have addressed halal cosmetics at a general level, this research introduces novelty by focusing on a leading halal cosmetic brand—Wardah—and its engagement with Muslim Generation Z consumers in the Jabodetabek region. This focused approach deepens the understanding of how individual factors interact with brand-level dynamics, offering more precise insights into purchase intention formation within the halal cosmetics market.

From a practical standpoint, the study provides several actionable recommendations for the Wardah brand and other halal cosmetic producers. First, it is crucial to continuously improve and communicate ingredient safety through product innovation and transparency. Educating consumers about product content and its dermatological safety—such as through lab-tested claims—can strengthen trust and encourage purchase intention. Second, brands should optimize educational efforts related to the halal logo, emphasizing its function as a quality and safety certification rather than a mere religious identifier. Initiatives such as beauty talks, live sessions, and interactive campaigns can be used to convey this message effectively. Third, promotional strategies should be adapted to better align with Generation Z's preferences by focusing on product efficacy, clean beauty, and peer influence. Collaborations with Gen Z beauty influencers and content creators can significantly enhance brand engagement and relevance.

In light of the finding that religious belief does not significantly influence purchase intention, brands should consider repositioning their messaging to emphasize practical product benefits over solely religious appeals. This shift in strategy aligns with the increasingly informed and quality-conscious behavior of Muslim Gen Z consumers, ultimately offering a more competitive and resonant brand positioning in the modern halal cosmetics market.

5. LIMITATION

The limitations of this research are as follows. First, the study focused on Muslim individuals from Generation Z (born between 1997 and 2012) who have used Wardah cosmetic products. Second, it examined only four independent variables—Religious Belief, Ingredient Safety, Halal Logo, and Promotion—in relation to the dependent variable, Purchase Intention. Third, the research was limited to the JABODETABEK area, where preference for local cosmetic brands is notably high.

Future research should expand the scope by including additional variables such as Price Perception and Celebrity Endorsement to provide deeper insights. It is also recommended to study other halal cosmetic brands to gain a broader understanding of consumer preferences beyond Wardah. Furthermore, expanding the geographic area and comparing different generations—Generation Z, Millennials, and Generation Alpha—could reveal changing trends in halal cosmetic purchasing behavior.

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UNRAVELING CONSUMERS CONTINUANCE INTENTION TO USE ONLINE FOOD DELIVERY: MEDIATING ROLE OF TRUST

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Abstract-Online Food Delivery (OFD) services, as app-based food ordering platforms, have experienced a significant rise in popularity in recent years. Understanding customers' intention to reuse OFD services and trust has become an increasingly important. This study aims to investigate the mediating role of customer trust in the relationships between information quality, visual design, and delivery experience, and customers' intention to continue using OFD services. The population of this research consists of individuals who have used OFD services in Indonesia. A quantitative approach was employed, involving 651 valid respondents who were selected based on their experience with OFD platforms. The research model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), and data processing was conducted using the SMART PLS software. The findings indicate that customer trust significantly mediates the relationships between information quality, visual design, and delivery experience with the intention to continue using OFD services, acting as a partial mediator. Furthermore, the study confirms that information quality, visual design, and delivery experience all have significant direct effects on customers' intention to continue using OFD services. Theoretical implications of this study contribute to the enrichment of trust-related frameworks in digital service usage, particularly in the context of food delivery applications. From a managerial perspective, the results highlight the importance for OFD service providers to understand and strengthen the key antecedents of trust, in order to enhance customer retention and encourage sustained user engagement. These insights are valuable in designing effective strategies in the increasingly competitive OFD market.

Keywords: Delivery Experience; Information Quality; Intention to Continue Using; Online Food Delivery Service; Trust

1. INTRODUCTION
1.1 Research Background

Online Food Delivery Services (OFD) is an information system that connects consumers as customers with restaurants via applications or web platforms, enabling transactions for ordering and food delivery without direct physical interaction with the restaurant (Alalwan, 2020; Troise et al., 2021). OFD is one of the potential media for increasing revenue and serves as a marketing tool for restaurant owners (Troise et al., 2021) . In the current digital era, OFD services have become vital for consumers, especially due to the COVID-19 pandemic. Social restrictions during the pandemic not only pushed consumers to switch to OFD but also changed consumer behavior, which significantly increased the industry's revenue and development (Jun et al., 2022; Muangmee et al., 2021). The positive growth trend of OFD is expected to continue in the post-pandemic era, driven by changes in consumer behavior and higher technology adoption (Ramos, 2022). Nevertheless, this growth also brings the challenge of increased competition among OFD providers (Horta et al., 2020).

Indonesia is one of the countries with the largest market capitalization for OFD in Southeast Asia (Eloksari, 2022).. Similar to other countries, consumer behavior in Indonesia has also changed due to the COVID-19 pandemic. One of the impacts has been the positive growth trend of OFD in Indonesia, which also comes with the challenge of increased competition in the Indonesian OFD industry. Amidst rising competition, OFD providers must develop strategies to enhance users' intentions to continue using OFD in order to gain a competitive edge (Firdaus et al., 2023). One of the key predictor for consumer intention is consumer trust (Leung et al., 2023; Muhtadi, 2022; Schouten et al., 2020). Academic research has also provided empirical evidence of the impact of trust in enhancing consumer intentions (Chawla & Joshi, 2019; Shao et al., 2019). Hence, this study examines consumer trust as a predictor of the intention to reuse OFD.

Understanding the transaction journey experienced by consumers when using an OFD application will help in comprehending their behavior, thus enabling the development of strategies to increase their intention to reuse the OFD application. When consumers select and then order food until it arrives, several important factors are involved in their experience : first is the quality of the visuals displayed by the OFD , then the information design presented , and finally how the food is delivered to the consumer (Pal et al., 2022; Wang et al., 2021). Therefore, this study also proposes information design, visual design, and delivery experience as antecedents of consumer trust and the intention to reuse the OFD application.

The topic of this research is important as it investigates consumer trust in OFD. In recent years, OFD has grown in transactions and user numbers, becoming a focus for academic research. Trust is one of the crucial factors for consumers intention to use e-commerce applications, thus gaining attention from several academic studies (Ho Nguyen et al., 2022; Qalati et al., 2021). In fact, some empirical research has already explored the impact of trust on consumer purchase intentions in the context of OFD (Abyantoro Seno & Purnamaningsih, 2021; Khan, 2022; Purwianti et al., 2024; Putri & Berlianto, 2022; Watanabe et al., 2020). However, research investigating the influence of trust as a predictor of consumer intention to reuse OFD is still limited, despite the fact that OFD has become popular and widely used by consumers. Furthermore, the importance of consumer trust has prompted several academic researchers to empirically investigate the factors that enhance consumer trust as well as purchase intention especially in the realm of online shopping (Kim & Roh, 2022; Kurniawan & Hanifah, 2023; Lu & Chen, 2021; Ramezani Nia & Shokouhyar, 2020). Several previous studies have investigated service quality (Ramezani Nia & Shokouhyar, 2020), perceived risk (Lu & Chen, 2021), hedonic factors, and physical characteristics (Kim & Roh, 2022) as

significant factors contributing to the enhancement of consumer trust in online shopping. Other studies have also shown that information quality (Qalati et al., 2021), and the impact of visual design (Ramezani Nia & Shokouhyar, 2020; Shaouf, 2020) plays a significant role in improving trust in online shopping. Additionally, several studies have indicated that customer experience serves as an antecedent in fostering consumer trust in e-commerce (Pan et al., 2023). However, research examining trust as a mediator between information quality, visual design, delivery experience, and the intention to reuse OFD is still lacking, despite the fact that information quality, visual design, and delivery experience are crucial factors in consumers' transaction experiences with OFD. To address this gap in the literature, the main objective of this study is to analyze the impact of trust as a mediator between information quality, visual design, and delivery experience, and the intention to reuse OFD.

The primary objective of this study is to analyze the mediating effect of consumer trust between visual design, information quality, and delivery experience on the intention to continue using online food delivery services (OFD). To address this main objective, the study is structured around several research questions. The first research question explores the role of consumer trust, information quality, visual design and delivery experience in shaping consumer intention to continue using OFD. The second research question examines the mediating effect of consumer trust between visual design, information quality, and delivery experience on the intention to continue using OFD. The third research question investigates the impact of visual design, information quality, and delivery experience on enhancing consumer trust.

1.2 Literature Review
1.2.1 Information quality

Information quality from OFD has an important role for customers because this information helps customers make decisions when using OFD (Gupta & Duggal, 2021). Information quality that is good, relevant, easy to digest, easy to obtain will help consumers to make decisions when transactions using OFD and return to using OFD, conversely information that is irrelevant, unhelpful will make customers annoyed and dissatisfied with OFD services (Kapoor & Vij, 2018). Online transactions through OFD require various kinds of information, such as information about products, restaurants, restaurant locations, customer reviews, delivery tracking, purchasing methods, information availability and the relevance of the information will increase customer intention to convert (Kapoor & Vij, 2018). Previous academic research proves the importance of information to increase customer trust and their intention. Research from Lee et al (2019) concluded that user trust is an influential predictor in shaping customer intentions to re-use OFD. Prior research from Ray et al., (2019) also states similar results where the information presented OFD has a significant impact on forming customer intentions.

H5. Information quality has positive impact on consumers trust toward OFD.

H2. Information quality affect consumers intention to continue use OFD

1.2.2 Delivery experience

Delivery experience is one part of the customer experience when using OFD services. The delivery experience in the OFD service starts with ordering food, information about driver availability, tracking the location of food delivery, and info on arrival estimates (Ray et al., 2019). The definition of delivery experience is a positive experience from customers regarding food delivery when ordering using OFD services (Pal et al., 2022; Ray et al., 2019). The food delivery experience felt by customers when ordering using OFD services has an important role in the use of OFD. Academic researchers have found a positive relationship between delivery

experience and the intention to use OFD in their research (Pal et al., 2022; Ray et al., 2019). Academic research in contexts outside of OFD suggests that customer experience is a predictor of customer trust (Gilboa et al., 2019; Tuncer, 2021). The synthesis of the arguments and findings of previous research above produces the following hypotheses.

H6. Delivery experience has positive impact on consumers trust toward OFD.

H3. Delivery experience positively affect consumers intention to continue use OFD

1.2.3 Visual design

The visual design of this research is one of the factors of application attributes. Visual design is the consumer's perception of the quality of an application from an aesthetic perspective (Pal et al., 2022). Consumers assess the visual design of an application from several aspects such as typeface, font size, animation, images, colors, and the layout used (Souiden et al., 2019). Visual design helps shaping consumer perceptions of OFD applications. Applications with good visual design quality will increase consumer experience when they use these applications (Cheung et al., 2015). Previous research in social commerce suggests that website design has positive influence in their consumers behavioural intention to continues uses (Molinillo et al., 2021). Online retailing website with good aesthetic design also found to has a positive effect on consumers trust (Ramezani Nia & Shokouhyar, 2020). Departing from the above arguments and the results of previous research, this study proposes the following hypothesis.

H7. Visual design has positive influence on building consumers trust toward OFD.

H4. Visual design significantly affects consumers intention to continue use OFD.

2.4 Trust

Trust has an important role as a driver of consumer behavior. Broadly speaking, trust can be defined as a party's perception of the credibility, reliability and integrity of another party (Shao et al., 2019). In the context of this study, where trust exists between the customer and the OFD service provider, so that the trust in this study relates to the customer's perception of how reliable the OFD is, the credibility of the OFD and the integrity of the OFD.

Trust has an important role in consumer behavior. Previous studies provide empirical evidence of the hypothesis that trust is an antecedent variable of consumer intentions to use applications and their attitude toward applications (Chawla & Joshi, 2019; Shao et al., 2019). Research from Chawla and Hoshi (2019) found a significant positive relationship from trust to the intention of consumers to use a mobile wallet. Research from Fan et al (2018) provides empirical evidence of the significant influence of the attitudes of American and Chinese consumers on mobile payment applications. Several academic studies have examined and demonstrated the influence of trust in shaping consumers' intentions to use OFD applications (Hong et al., 2021; Wijaya et al., 2024).

The synthesis of the arguments and findings of previous research above produces the following hypotheses:

H1. Trust has positive and significant influencer toward intention to continue use OFD.

Trust is an important predictor in shaping consumer intention, lack of trust has an impact on decreasing consumer intention to use the application (Chawla & Joshi, 2019; Shao et al., 2019). Previous research has proven that trust also acts as a mediator for consumer intentions (Amin & Tarun, 2021; Qalati et al., 2021; Singh & Sinha, 2020). By looking at the existence of a significant relationship between the OFD application attribute and trust (Molinillo et al.,

2021; Pal et al., 2021), and trust acts as a mediator for consumer intentions. hence, according to these previous studies, the following hypothesis can be proposed.

H8. Trust mediates the relationship between information quality and intention to continue use OFD.

H9. Trust mediates the relationship between delivery experience and intention to continue use OFD.

H10. Trust mediates the relationship between visual design and intention to continue use OFD.

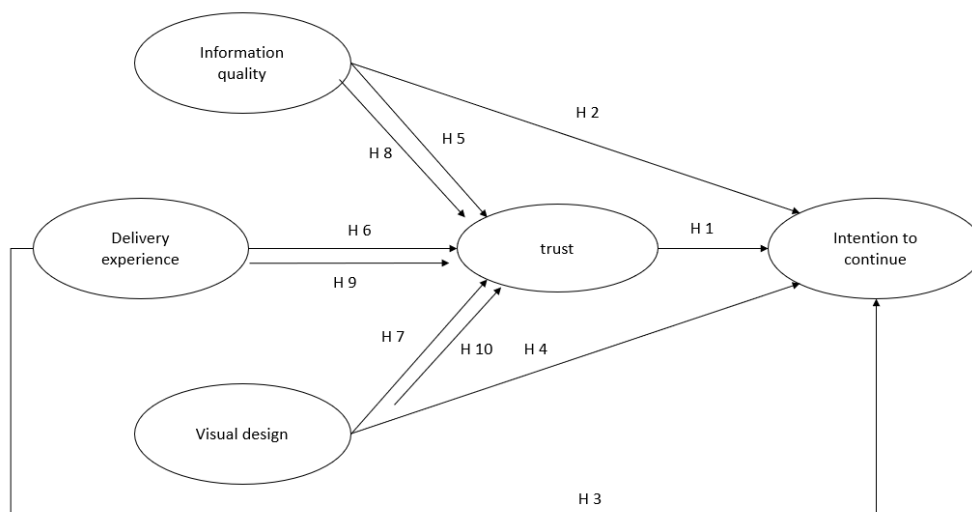According from several hypothesis, the research model in this research is presented in Figure 1.

Figure 1. Research Model

2. RESEARCH METHODOLOGY

The population of this study consists of users of OFD (Online Food Delivery) applications in Indonesia. The respondents were individuals who are familiar with and have previously used OFD services in Indonesia. This study uses a quantitative method and a deductive approach to answer the research objectives. The data collection strategy in this study used a cross-sectional data collection timeline. the data collection method uses a non-probability sampling strategy where this method is used because the number of the population is unknown, the sampling frame does not exist, and data collection can be done more quickly at a lower cost (Kotler & Armstrong, 2016). This study uses non-probability quota sampling so that the sample taken can represent all regions in Indonesia.

The scale used in the questionnaire is the Likert 5 scale, ordinal where based on Dawes, (2008), the Likert 5 scale can produce a higher mean than the Likert 10 scale, so the resulting data can be processed more easily. The customer trust is measured by 4 items using the measurement scale used by Zhao & Bacao, (2020), while the intention to continue to use is measured by 4 items using a measurement scale from research by by Zhao & Bacao, (2020) and Gunden et al., (2020). The visual design and information quality variables measured by 4 item measurements adapted from research from Pal et al., (2022). and the delivery experience variable is measured by 4 items using the measurement used by research from Ray et al., (2019) and Pal et al., (2022).

For data collection, this study uses an online questionnaire tool, where this online questionnaire has advantages in terms of cost, geographic reach. This study conducted a pre-test with a sample of 50 respondents to ensure that this questionnaire is understandable to respondents and can be used in research. After confirmation that there were no problems in how the respondents completed the questionnaire, data collection was then carried out from January to July 2023. Data collection used the Google Form and then distributed online. A total of 660 questionnaires were returned. Of the 660 questionnaires, 651 respondents were obtained which could be used in the calculations.

Descriptive data from the collected respondents can be seen in Table 1, where the demographics of the respondents include gender, age and jobs.

Table 1. Demographic of Respondents

Gender	Male	309
	Female	340
Jobs	College student	302
	Employee	195
	Professional	62
	Entrepreneur	36
	Housewife	23
	State official	33
Age	<20	173
	21 – 25	204
	26 -30	64
	31- 35	71
	36 – 40	75
	>40	64

From Table 1 above, the respondents of this study consisted of 47% male and 53% female, the work of the respondents dominated by 46% were students, then 29% were private workers, and 9.5% were professional workers.

3. RESULTS AND DISCUSSIONS
3.1 Results

The model from this study was tested using structural equation modeling with the partial least squares or PLS-SEM approach. The PLS-SEM method was chosen because it is in accordance with the focus of this study on understanding the relationships between constructs of the research model (Hair et al., 2019). Then PLS-SEM is also widely used in several empirical studies on OFD (Ali et al., 2021; Panse et al., 2019; Troise et al., 2021). The results of the calculations for the reflective test of the research model using PLS-SEM are in the following table 2.

Table 2. Reflective Measurements

	Items	Loading factor	CR	AVE	VIF
Continue Intention	CI1	0,900	0.93	0.815	2,566
	CI2	0,883			2,313
	CI3	0,925			3,010
Delivery Experience	DQ1	0,852	0.915	0.73	2,114
	DQ2	0,821			1,959
	DQ3	0,864			2,334
	DQ4	0,878			2,399

	Items	Loading factor	CR	AVE	VIF
Information Quality	ID1	0,846	0.896	0.683	2,056
	ID2	0,849			2,109
	ID3	0,806			1,784
	ID4	0,803			1,778
Trust	TR1	0,857	0.923	0.751	2,267
	TR2	0,835			2,085
	TR3	0,887			2,634
	TR4	0,885			2,576
Visual Design	VD1	0,877	0.916	0.733	2,756
	VD2	0,899			3,063
	VD3	0,798			1,800
	VD4	0,847			2,050

The measurement of the research model with reflective indicators using the PLS-SEM approach is evaluated in the following 4 stages.

The first stage is the validity indicator. This stage tests whether the indicators used measure the intended latent variable, where a value above 0.6 is needed so that the indicator can be called validity. It can be seen from the Table that all of the indicators have a loading factor value above the value of 0.6 so that it can be said that each indicator has good validity for measuring its respective latent variable.

The second stage is to measure construct reliability. This stage is calculated using the composite reliability index or CR, which requires a CR value above 0.7. the data from the calculation test results in the table above shows that all CR values of each construct have a value above 0.7 which indicates that each construct has good composite reliability.

The third stage is to measure the convergent validity of each latent variable. Convergent validity is measured using the average variance extracted or AVE from each construct. The value of the AVE of the construct needs to be above 0.5 in order to show that the construct can explain more than 50% of the variance of the indicator. Then the calculation results from AVE show that all constructs have an AVE value above 0.5 which indicates that each construct can explain more than 50% of the variance in the indicator.

The fourth stage is the discriminant validity test. Discriminant validity explains how each construct of the research model is empirically different from one another. One method for measuring discriminant validity is the Fornell Larcker criterion. This method states that the correlation value of each construct must be greater than the correlation value of the construct with the other constructs.

Table 3. Discriminant Validity.

	CI	DQ	ID	TR	VD
CI	0,903				
DQ	0,573	0,854			
ID	0,562	0,599	0,826		
TR	0,650	0,660	0,636	0,866	
VD	0,559	0,617	0,611	0,612	0,856

CI: Customer intention to continue use
DQ: Customer loyalty
ID: Delivery experience
TR: Information quality
VD: Visual design

The results of the calculations for discriminant validity are in the table 3 above. The discriminant validity results of this study show that the correlation value of each construct has the greatest value compared to the correlation with other constructs, so that it can be said that each construct of this research model empirically has differences from one another.

The next stage in evaluating the research model using PLS-SEM is the inner model evaluation, where this stage aims to test the hypotheses previously formed from the research model.

The first step in evaluating the inner model is calculating the coefficient of determination or R square. The coefficient of determination (R Square) is a way to assess how much an endogenous construct can be explained by an exogenous construct. The value of the coefficient of determination (R Square) is expected to be between 0 and 1.

Table 4. R square.

Variables	R²
Continue Intention	0.491
Trust	0.551

The results of the r square calculation from the research shown in the table 4 above show that the r square value of the continuous intention variable is equal to, which means that 49.1% of the variance in the continue intention construct is influenced by the variables that influence it. The r square value of the trust variable is 0.551, which means that 55.1% of the variance in the trust construct is affected by the variables that influence it. The r square value of the continue intention is 0.491 which means that 49.1 % of the variance in the continue intention is affected by the latent constructs that influenced it.

The next phase is the structural model test. This hypothesis test begins with bootstrapping 5,000 resamples. The results of the hypothesis test can be seen in the table 5.

Table 5. Structural model results

Hypothesis	Path coefficient (β)	T values	P Values
H1. trust → continue intention	0,363	6,738	0,000
H2. information quality → continue intention	0,147	2,913	0,004
H3. delivery experience → continue intention	0,149	3,464	0,001
H4. visual design → continue intention	0,154	3,184	0,001
H5. information quality → trust	0,293	6,902	0,000
H6. delivery experience → trust	0,350	8,053	0,000
H7. visual design → trust	0,217	5,336	0,000

The significance test of the hypothesis relation is calculated through the value of the t-value and P values. the rule of thumb of the t-value is 1.96 so the t-value of the hypothesis must be above the value of 1.96 to say there is a significant relationship. While the rule of thumb for the p-value is 0.05, it takes a p-value below 0.05 for the hypothesis to be supported with a significance level of 0.95 (Allameh et al., 2017).

Figures and tables show the results of the structural model test where trust (t-value = 6.738 ; p value = 0.00), along with visual design (t-value = 3.184; p value = 0.001), information quality (t-value = 2.913; p value = 0.004) and delivery experience (t-value = 3.464; p value = 0.001) has a positive and significant effect on the intention to continue using OFD, so hypotheses 1, 2, 3, and 4 are accepted. Apart from that, there is a significant and positive influence from visual design (t-value = 5.336; p value = 0.00), information quality (t-value = 6.902; p value =

0.00) and delivery experience (t-value = 8.053; p value = 0.00) on the intention to continue to watch. Thus, hypotheses 5, 6 and 7 accepted.

The next stage is mediation analysis. The results of the mediation test from this study can be seen in the following table and graphic.
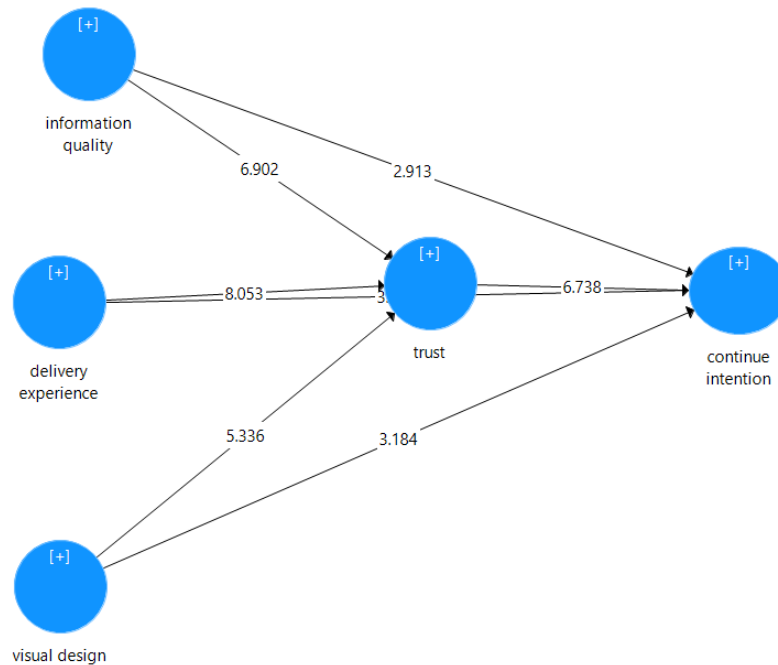

Figure 2. Structural Model Analysis

Table 6. Indirect Effects Analysis

Mediation Analysis	T values	P Values
Hypothesis 8:		
information quality → trust → continue intention	4.570	0.00
information quality → continue intention	2.913	0.004
Hypothesis 9:		
delivery experience → trust → continue intention	5.515	0.00
delivery experience → continue intention	3.464	0,001
Hypothesis 10:		
visual design → trust → continue intention	4.037	0.00
visual design → continue intention	3.184	0,001

The results of the mediation test in Table 6 shows that the relationship from information quality → trust → continue intention is significant (t-value = 4.570; p value = 0.00),, and the relation information quality → continue intention is also significant (t-value =2.913 ; p value = 0.003), so it can be said that the hypothesis 8 is accepted. The same results can also be seen from the mediation test of the delivery experience → trust → continue intention relationship (t-value = 5.515; p value = 0.00) and the delivery experience → continue intention relationship (t-value = 3.464; p value = 0.001) so that it can be said that hypothesis 9 is accepted. Finally, the ninth hypothesis is also accepted, where the mediation results show that the relationship visual design → trust → continue intention (t-value = 4.037; p value = 0.000) and the relationship visual design → continue intention (t-value = 3.184; p value = 0.00) are significant and positive.

3.2 Discussion

The primary objective of this study is to examine the role of customer trust as a mediating variable in the relationship between information quality, visual design, and delivery experience with customers' intention to continue using online food delivery services (OFD). To address this main objective, the study is structured around three research questions.

The first research question focuses on the influence of consumer trust, information quality, visual design, and delivery experience on consumers' intention to continue using Online Food Delivery (OFD) services. This question was tested through hypotheses H1 to H4. The statistical analysis confirmed all four hypotheses, indicating that these four variables have a significant and positive influence on consumers' intention to reuse OFD applications. These findings are consistent with previous studies. For example, Martínez Puertas et al., (2024) investigated the influence of consumer experience on the intention to use chatbots, while Jayasingh et al., (2025) found that information quality and customer experience significantly affect purchase intentions. Similarly, Sharma et al., (2024) study confirmed that information quality and visual design play a crucial role in shaping consumers' intentions to make online purchases. In addition to aligning with previous studies, these findings are also supported by the research of Pal et al (2022) and Ray et al (2019), which demonstrates that information quality, visual design, and delivery experience are critical factors influencing consumers' intention to use OFD applications (Pal et al., 2022; Ray et al., 2019). What distinguishes this study from prior research is its more comprehensive approach, by incorporating customer trust as an additional variable. The results show that trust, along with information quality, visual design, and delivery experience, plays a crucial role in influencing consumers' decisions to continue using OFD services on a repeated basis..

The second research question addresses the mediating role of customer trust in the relationship between information quality, visual design, and delivery experience and consumers' intention to continue using OFD services. This research question is examined through hypotheses H8, H9, and H10. The results of the statistical analysis indicate that hypotheses H8, H9, and H10 are supported, providing empirical evidence that customer trust plays a positive and significant role as a partial mediator in the relationship between information quality, visual design, and delivery experience and customers' intention to continue using OFD services. These findings are consistent with a range of prior studies that have explored trust as a mediating variable, including in the use of public service applications (Hooda et al., 2022), the adoption of AI-based products (Cicek et al., 2025), and the purchase of environmentally sustainable products (Faber et al., 2024). However, earlier research has yet to specifically examine the role of trust in the context of repeated usage behavior within digital service platforms, particularly in OFD services. As such, this study provides a novel contribution to the literature by presenting empirical evidence that customer trust plays a significant and positive role as a partial mediator in the relationship between information quality, visual design, and delivery experience, and consumers' intention to continue using OFD services.

The third research question explores the influence of visual design, information quality, and delivery experience on consumer trust among OFD users. This question was addressed through the testing of hypotheses H5, H6, and H7. The results of the statistical analysis indicate that all three hypotheses were supported, demonstrating that visual design, information quality, and delivery experience each have a positive and significant impact on enhancing consumer trust in OFD services. These findings are consistent with a range of prior studies that have identified key factors influencing consumer trust in the context of online transactions. Han & Lee, (2021), Gama et al., (2025) state that the quality of information presented on a digital

platform plays a central role in shaping consumers' trust perceptions. Furthermore, delivery experience has also been shown to be a critical determinant of consumer trust, as highlighted by Gilboa et al. (2019) and Tuncer (2021), who emphasized the impact of overall consumers experience on trust formation in digital services (Gilboa et al., 2019; Tuncer, 2021). Equally important, the visual design of the application contributes significantly to building user trust. Ramezani Ramezani Nia & Shokouhyar, (2020) explain that an aesthetically appealing, intuitive, and easy-to-navigate user interface not only enhances user experience but also reinforces perceptions of trust in the platform. These findings are also in line with the study by B. Han et al., (2025)., which demonstrated that information quality and visual design have a significant influence on the development of consumer trust in online shopping environments.. Taken together, these three variables—information quality, delivery experience, and visual design—are crucial in establishing consumer trust in OFD services.

Trust has long been recognized as a key element in fostering interactions within digital ecosystems, including in the context of online transactions and the use of application-based services. Several previous studies have begun to explore the importance of trust in the context of Online Food Delivery (OFD) usage (Chakraborty, 2025; Karahan, 2025; Mai & Nguyen, 2025). However, to date, few studies have comprehensively examined the roles of information quality, visual design, and delivery experience as antecedents of consumer trust, even though these three aspects represent users' perceptions and experiences with OFD services. Moreover, there is a lack of empirical evidence positioning trust as a mediating variable that explains the relationship between technical and aesthetic service aspects and consumers' intention to reuse OFD platforms.

Accordingly, this study seeks to fill that gap by presenting an integrative model that highlights the mediating role of trust, while also emphasizing that information quality, visual design, and delivery experience are interrelated components that significantly influence both consumer trust and the intention to continue using OFD platforms.

4. CONCLUSIONS

This study aimed to analyze the mediating role of customer trust in the relationship between information quality, visual design, and delivery experience on consumers' intention to continue using Online Food Delivery (OFD) services in Indonesia. A quantitative approach was employed, involving 651 respondents, and the data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM), producing the following empirical findings. First, the study confirms that information quality, visual design, delivery experience, and customer trust have a positive and significant influence on consumers' intention to reuse OFD platforms. Second, customer trust was found to act as a significant partial mediator in the relationship between the three antecedent variables and consumers' behavioral intention. Among the three antecedents, delivery experience had the strongest effect on the formation of trust, followed by information quality and visual design. Third, the study also verifies that information quality, visual design, and delivery experience significantly influence consumer trust in the context of OFD usage. These findings reinforce the notion that, in the context of OFD services, building trust is a critical factor in maintaining customer loyalty.

From a theoretical perspective, this study contributes to trust theory by integrating technical and experiential dimensions into a comprehensive model and reaffirming the mediating role of trust in sustaining digital service usage. It specifically fills existing gaps in the development of trust theory within the OFD context. The study provides empirical evidence of the significant influence of trust in mediating the relationship between visual design, information quality, and delivery experience with the intention to reuse OFD.

From a managerial standpoint, the findings underscore the importance of placing customer trust at the core of strategic efforts to enhance user engagement with OFD platforms. Strengthening trust can be achieved through several key initiatives, including ensuring the quality and transparency of information provided, optimizing the visual appeal and usability of the application interface, and, most critically, maintaining consistent and reliable delivery services. These elements collectively foster greater consumer confidence and long-term loyalty in the competitive OFD landscape.

Future research is encouraged to expand the study by consider alternative mediating variables such as perceived value or customer satisfaction to enrich the understanding of consumer behavior in the OFD service environment. Future research could also consider narrowing the respondent scope by applying the current research model specifically to Generation Y (millennials). This demographic group is widely recognized as digitally savvy consumers with distinct preferences in online shopping. Testing the model exclusively within the context of Generation Y would not only enhance the model's validity in a more targeted segment but also offer deeper insights into how digital consumer behavior evolves across generational cohorts.

The dataset supporting the findings of this study is openly available in Figshare at the following DOI: https://doi.org/10.6084/m9.figshare.21331587.v1.

This study was collaboratively conducted by Ignatius Enda Panggati, Wanda Wandoko, and Agustinus Dedy Handrimurtjahjo. Ignatius Enda Panggati led the development of the research model and oversaw the project. Wanda Wandoko managed empirical data collection and statistical analysis. Agustinus Dedy Handrimurtjahjo contributed to theoretical grounding, discussion refinement, and final proofreading. All authors equally participated in reviewing and approving the manuscript.

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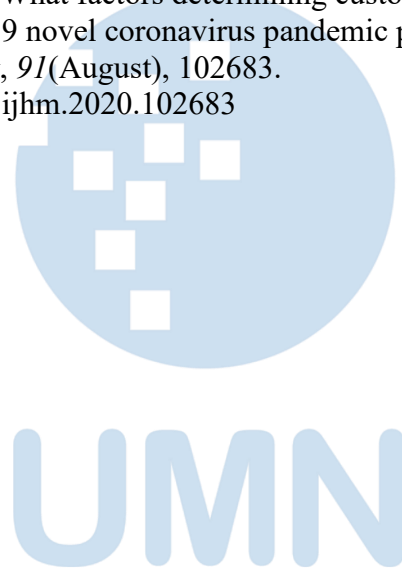
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   b. Paragraf 2 berisi metodologi penelitian yang digunakan dan unit analis.
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   f. Referensi.
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   b. Tabel dan gambar diberi nomor urut dan judul lengkap serta disebutkan sumbernya jika merupakan kutipan.

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Contoh:

Buku

Satu penulis

Hurt, R. L. (2008). *Accounting Information Systems*. New York: McGraw-Hill.

Dua penulis

Doupnik, T., & Perera, H. (2007). *International Accounting*. New York: McGraw-Hill.

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Weygandt, J. J., Kieso, D. E., & Kimmel, P. D. (2008). *Accounting Principles*. Danvers: John Wiley & Sons.

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