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# Development of the Latest Technology Based Accounting Information System to Increase Company Efficiency

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## ABSTRACT

*This research explores the impact of developing Accounting Information Systems (AIS) based on cutting-edge technology on company efficiency. We gathered data from questionnaires distributed to companies that have adopted state-of-the-art technology in their AIS. The research results indicate that the use of artificial intelligence (AI) significantly enhances operational efficiency in companies. Companies adopting blockchain technology also achieve higher levels of user satisfaction. User training and company size also have a positive impact on efficiency and better decision-making.In the discussion, we highlight the importance of investing in user training and maintaining state-of-the-art technology. We also acknowledge that implementation costs can be a constraint, particularly for smaller companies. This research has certain limitations, including a sample that may not cover the entire spectrum of industries and company sizes. However, further research can delve deeper through case studies. In the continually evolving business world, the development of AIS based on cutting-edge technology is a key factor in achieving efficiency, better decision-making, and user satisfaction. Companies must understand and address these challenges to attain a competitive edge and long-term success.*

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## INTRODUCTION

In the modern era which continues to develop, businesses and organizations are faced with rapid technological changes. Digital transformation has changed the business landscape significantly, and one of the aspects most impacted is the accounting information system (AIS). Yerdavletova & Farida, 2015). AIS not only functions as a financial recording and reporting tool, but is also the core of decision making and resource management within the company. Therefore, developing AIS based on the latest technology is very important to increase company efficiency. (Albuquerque & Dos Santos, 2023).Implementing an effective and efficient accounting information system will lead to: the quality of the financial and non-financial information produced which is then used bystakeholders. Some of these things refer to the benefits of AIS on effectivenessplanning, controlling, analyzing, decision making, presenting financial reports, so onAIS is very useful for effective financial performance and good management performance will ultimately show the overall performance of the organization (Edi & Wahyuningrum, 2017) Effective use of accounting information systems, both for individuals and organization, has an impact on the resulting organizational performance and can be improved in future (Rachmawati et al., 2021). Performance is a description of the achievements achieved company in its operational activities both regarding financial aspects, marketing aspects, aspects of collecting funds and distributing funds, technological aspects, and resource aspects humans (Jumingan, 2006). Accounting information systems are one of the media provide the information needed by managers to evaluate performance company in the past period and helps managers to make future plans (Helen et al., 2016).

Several cases of failure to implement accounting information systems were found ERP, there are also many notes containing difficulties in following developments ERP both when implementing ERP and updating ERP that has been implemented (Shaul & Tauber, 2012). Based on a study conducted by Chang (2004), as many as 90% were implemented ERP experiences problems such as budgets that exceed allocated limits and exceeded the specified time limit, and showed a failure rate of up to 67%.Studies regarding AIS and company performance have been widely carried out and provided diversity of results. The differences in results that occur are caused by differences in abilities interpreting the relationship between AIS and company performance. With the diversity of results from various articles led several researchers to conduct systematic literature reviews. As done by Ganyam & Ivungu (2019) who stated that information systems accounting (AIS) is positively related to company financial performance.

In today's business context, efficiency is one of the key factors in achieving long-term success. Businesses that are able to manage resources more efficiently have a clear competitive advantage. (Schiff & Lavine, 2001). However, to achieve the desired level of efficiency, companies must adopt the latest technology in their AIS. This includes the use of smarter systems, process automation, advanced data analysis, and integration with other technologies such as artificial intelligence (AI), blockchain technology, and cloud computing.(Monteiro & Cepêda, 2021)..

A strong and up-to-date Accounting Information System is not only about recording financial transactions, but also about providing in-depth insight to company management (Minanurohman & Fitriani, 2023). By using the latest technology, AIS can produce more accurate and real-time reports, enabling managers to make better and faster decisions. For example, through sophisticated data analysis, companies can identify market trends, inefficient spending patterns, and cost savings opportunities. (Chenjie, Xia Fang, 2011)

Apart from that, AIS which is based on the latest technology can also increase the level of security of company data. Data security is an important aspect of business today, especially considering the increasing threat of cyber security. A strong system can encrypt sensitive data, identify potential threats, and take necessary precautions to protect company information. (Victoria, Liu, 2019)

In this context, this research aims to explore the development of AIS based on the latest technology and its impact on company efficiency. Resource-Based View Theory This theory has the view that when a company wants to achieve excellence sustainable competitiveness, then companies must obtain and manage resources and competencies that are valuable, difficult to obtain or rare, cannot be duplicated, and cannot be replaced (VRIN) and there must be a company or organization that can mobilize it as well make good use of it (Barney, 1991). Then according to Barney (1991), for To gain sustainable competitive advantage companies must use methods that utilize the company's internal strengths, through responding to external opportunities along with neutralizing incoming threats and ignoring internal weaknesses. Company resources are all assets owned by the company including itcompetencies, organizational processes, company characteristics, understanding, information, and others those under the company's control can then be utilized in strategy implementation(Barney, 1991).In connection with this study, the RBV theory is commonly used in the research that examines itabout the use of information systems. Researchers use RBV theory to help defines firm resources as a firm's information technology capabilities and explains the business value of information technology (Mabert et al., 2001). Furthermore, the RBV theory creating value for the company based on the resources owned by the company such asERP, where ERP is an information system that has economic value, is relatively rare, difficult to findimitated or imitated, and tied to the company (Barney, 1991; Hedman & Kalling, 2003). This mattersupported by Fosser et al. (2008); Hedman & Kalling (2003), which states that ERPis part of information technology resources that can create advantages competitive We will analyze case studies from various industrial sectors that have adopted the latest technologies in their AIS and record the results that have been achieved. The goal is to understand how companies can utilize the latest technology to increase their operational efficiency and gain a competitive advantage in an increasingly competitive market. (Herlianti, Tawami, 2019) In the following chapters, we will explain the research methodology used, analyze our findings, and provide practical recommendations for companies wishing to adopt the latest technologies in their AIS. It is hoped that this research can provide valuable guidance for business stakeholders, software developers and researchers who are interested in increasing company efficiency through the development of AIS based on the latest technology.

## RESEARCH METHODS

This research uses a quantitative approach to collect and analyze data. This approach allows us to numerically measure the impact of the development of the latest technology-based Accounting Information Systems (AIS) on company efficiency. (Melchor, et al, 2015)

### Population and Sample

The population in this research is local scale companies in the city of Palembang that have adopted the latest technology in their AIS. So far the data we have obtained is 50 companies that make up the research population. We selected a sample consisting of a number of companies from a variety of industry sectors that represent variations in scale, industry type, and level of technology adoption. This sample was chosen randomly to ensure better representation. In this case, the research sample was 50 in palembang city and grouped into management, service and retail types of business.

### Research Instrument

Data was collected through a specially designed questionnaire-based survey. This questionnaire includes structured questions that aim to measure the company's operational efficiency, the impact of the latest technology-based AIS on decision making, and the level of satisfaction of AIS users. The questionnaire also includes questions related to company demographics, such as size, industry sector, and level of technology adoption.

### Data Collection Procedures

Questionnaires were sent online to respondents who had sufficient knowledge about AIS and company operations. Respondents were asked to fill out a questionnaire according to their experience in using AIS. The data collected will be anonymized and analyzed to answer the research questions.

### Data analysis

The variable measurement is using a questionnaire about the use of SIA technology using AI and Blockchain methods, using elements of company type, distributed to 50 local companies inPalembang with 3 types of business, namely, retail, industrial and service, with small, large and medium scale. The survey was carried out to management. company.

## RESULTS AND DISCUSSION

this research is local scale companies in the city of Palembang that have adopted the latest technology in their AIS. So far the data we have obtained is 50 companies that make up the research population. We selected a sample consisting of a number of companies from a variety of industry sectors that represent variations in scale, industry type, and level of technology adoption. This sample was chosen randomly to ensure better representation. In this case, the research sample was 50 in palembang city and grouped into management, service and retail types of businessThe results of this research include data analysis from questionnaires that we distributed to companies that have adopted the latest technology in accounting information systems (AIS). Respondents in this study had diverse backgrounds and experiences in using AIS.

**Tabel 1.** Company Sample Table

| No. | Variabel Profil Company Variable | Persentase Sampel |
|---|---|---|
| 1 | Industri Sector | |
| | - Industri | 40% |
| | - Service | 30% |
| | - Ritel | 30% |
| 2 | Company Size | |
| | - Intermidiate | 50% |
| | - Big | 30% |
| | - Small | 20% |
| 3 | Penggunaan Teknologi Terkini di AIS | |
| | - AI | 60% |
| | - Teknologi Blockchain | 40% |

**Sumber: Analysis Result (2023)**

Before we start analyzing the results, let's look at the related profiles first. In the sample of companies in our study, the majority of companies can be placed in industry (40%), followed by the service sector (30%) and retail (30%). Most companies are medium-sized companies (50%), followed by large companies (30%) and small companies (20%). In terms of current technology usage, around 60% of companies have implemented AI in AIS, while 40% of companies are using blockchain technology.

One of the most important aspects we study is the company's operational efficiency. Respondents were asked to rate the effectiveness of their operations before and after implementing the latest AIS technology. The results show that around 75% of companies reported increased operational efficiency after implementing the latest technology. These results reflect the significant positive impact of the development of AIS based on the latest technology on increasing company efficiency. Next we assess the impact of current AIS techniques on decision making. Survey results show that around 80% of respondents said that the latest technology has helped them make better decisions. With more sophisticated data analysis and more detailed reporting, business leaders have better access to relevant information, enabling them to make more timely and data-driven decisions.AIS user satisfaction is also an important focus of this research. The results show that around 70% of respondents are very satisfied with their AIS after implementing the latest technology. Factors such as ease of use, data accuracy, and system responsiveness increase satisfaction. This shows that the development of AIS based on the latest technology not only increases efficiency but also provides a better user experience for users.

**Table 2. Impact of Recent Ais**

| No. | Variabel | Responden Persentation |
|---|---|---|
| 1 | Increased Operational Efficiency | 75% |
| 2 | Helps Make Better Decisions | 80% |
| 3 | AIS User Satisfaction 70%<br>Source | 70% |

**Sumber:** Analysis Results (2023)

We dug deeper and performed advanced data analysis to clarify factors that may influence operational efficiency, decision making, and user satisfaction in the context of today's technology-based AIS. The results of the regression analysis show several significant results:Impact of Artificial Intelligence Technology: The use of artificial intelligence (AI) in AIS is significantly related to operational efficiency. Companies that use AI tend to be more efficient than companies that don't. Blockchain adoption costs: Although the use of blockchain technology is not yet standard in AIS, companies that adopt it tend to have higher user satisfaction. Blockchain also offers a higher level of data security.User training: Training users to use advanced AIS has a positive impact on better decision making. Companies that train their employees adequately tend to exploit the potential of AIS more effectively.Company size: Larger companies tend to have more resources and budget to implement the latest technology. Therefore, company size also has a positive relationship with higher operational efficiency The results of this research clearly show how important the development of AIS based on the latest technology is for company efficiency. The significant improvements in operational efficiency reported by the majority of respondents show that investing in the latest technology brings real benefits. The use of artificial intelligence and blockchain in AIS has been proven to increase efficiency and security.

Additionally, the positive impact on decision making and user satisfaction cannot be ignored. With the latest technology, business leaders have better access to the information they need to make better, faster decisions. High user satisfaction reflects that more advanced AIS are not only functionally useful but also provide a more positive user experience. However, there are several challenges that must be overcome in the development of AIS based on current technology. Companies need to pay attention to user training so they can optimize the potential of AIS. Additionally, the costs of implementing and maintaining the latest technology can also be an obstacle for smaller companies In the context of this research, there are several limitations that must be acknowledged. The sample we used may not cover the entire spectrum of industries and company sizes. In addition, the results of this study are based on respondents' perceptions and responses, which can be influenced by various subjective factors.

In order to develop this research further, future research could involve in-depth case studies of companies that have successfully implemented the latest technology in their AIS. This can provide deeper insight into best practices and barriers that may be encountered in AIS development.

The results of this research support the theory and explore the development of AIS based on the latest technology and its impact on company efficiency. Based on the Resource-Based View Theory, this theory holds that when a company wants to achieve sustainable competitive advantage, the company must acquire and manage resources and competencies that are valuable, difficult to obtain or rare, cannot be duplicated, and cannot be replaced (VRIN). and there must be a company or organization that can mobilize and utilize it well (Barney, 1991). Then, according to Barney (1991), to obtain a sustainable competitive advantage, companies must use methods that utilize the company's internal strengths, by responding to external opportunities and neutralizing incoming threats and ignoring internal weaknesses. Company resources are all assets owned by the company including competencies, organizational processes, company characteristics, understanding, information, etc. that are under the control of the company which can then be utilized in implementing strategy (Barney, 1991). In connection with this research, the RBV theory is commonly used in research that examines the use of information systems. Researchers use RBV theory to help define corporate resources as a company's information technology capabilities and explain the business value of information technology (Mabert et al., 2001). Furthermore, the RBV theory creates value for the company based on the resources owned by the company such as ERP, where ERP is an information system that has economic value, is relatively rare, difficult to imitate or copy, and is tied to the company (Barney, 1991; Hedman & Kalling, 2003). This is supported by Fosser et al. (2008); Hedman & Kalling (2003) state that ERP is part of an information technology resource that can create competitive advantages. We will analyze case studies from various industrial sectors that have adopted the latest technologies in their AIS and record the results that have been achieved. The goal is to understand how companies can leverage the latest technology to improve operational efficiency and gain a competitive advantage in an increasingly competitive marketplace. Various kinds of research were conducted to review the role of accounting information systems

on the performance of MSMEs. The study conducted by Latifah et al. (2021) using MSMEs as a research sample, and gave results that SIA acts as a mediator between strategies business and organizational performance, then AIS also contributes positively to organizational performance.Another study on MSMEs was also conducted by Bi et al. (2017) and gives the result that development of e-business capabilities and business process competencies has a positive impact on the performance of MSMEs. The use of AIS also not only plays a role in general company performance, but also affects employee performance. Using AIS in the form of ERP helps manufacturing company employees in solving problems, management visibility, description work, authority and overall organizational performance (Wickramasinghe & Karunasekara, 2012). Then in a study conducted by Hwang et al. (2015) by using sample manufacturing companies, in facing the company's business environment, application ERP systems require strategic adaptation, reorganization, merger or integration, as well education and training for users. The use of accounting information systems is also used by audit firms or practices accountant. One form of this information system is cloud-based client accounting.The impact of using a cloud-based client accounting system is an increase in service consultation after the system is implemented. Other information systems used in audit firms are computer-assisted audit tools and techniques (CAATTs). Application

CAATTs are influenced by environmental factors, the complexity of the client's accounting information system (AIS)and the perceived level of support from professional accounting bodies (PABs) (Siew et al., 2020

## CONCLUSIONS AND RECOMMENDATION

This research highlights the importance of developing an Accounting Information System (AIS) based on the latest technology in increasing company efficiency. The research results show that the adoption of the latest technology in AIS contributes to increased operational efficiency, better decision making, and higher levels of user satisfaction.However, companies need to pay attention to factors such as user training and implementation costs on the road to a more sophisticated AIS. By understanding and addressing these challenges, companies can harness the full potential of the latest technologies in their AIS to achieve competitive advantage and long-term success. This research serves as a starting guide for companies looking to adopt the latest technology in their AIS. In an ever-evolving business world, improving AIS can be a determining factor in achieving company goals and meeting increasingly stringent market demands.

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# Corporate in Financial Distress and Determinant Analysis of Successful Financial Turnaround

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## ABSTRACT

*Corporate financial distresses and turnarounds has always been relevant on business literatures because we have seen more than enough corporate bankruptcies over the past decades. Financial distress is a condition of declining financial performance, earlier phase prior to companies experiencing bankruptcy or liquidation. The response to this condition ranges from a denial of the problem, to reducing the scale and scope of operations, all the way to the top change of management and dissolution of corporation. With the complexities of issues and implications associated with financial distresses and the recoveries attempted by corporations, the ability to formulate appropriate strategic responses is becoming very much important for stakeholders. This study is focusing on determinant analysis of multiple organizational factors, which are expense retrenchment, profitability, free assets, size, assets retrenchment and leverage, that may influence the successful financial turnaround for financially distressed firms and use logistic regression in hypothesis testing of the study. Samples are taken from manufacturing companies listed in Indonesia Stock Exchange (IDX) in research period 2015 to 2019. Financial data from 2015 to 2019 are used to determine financial distresses utilizing Altman's Z-Score model, and data from 2016 to 2018 are processed as the independent variables. Results of the study found that all of five independent variables have positive influence toward the likelihood of successful financial turnaround, however only three variables including profitability, free assets and leverage giving significant influence, meanwhile two other independent variables including expense and assets retrenchment do not have significant influence the likelihood of successful financial turnaround.*

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## INTRODUCTION

Dynamic economic conditions combined with the rapid pace of change, provide tough challenges for every company that lives in it. Often these rapid changes cannot be anticipated well by companies, which ultimately drags them into financial distress, but this does not mean that the company's life journey is over, more precisely, the company is experiencing a condition of declining financial performance. which can increase the risk of insolvency of the company. The term insolvency is different from the term bankruptcy, although the two are often confused. Insolvency is generally understood as a state when a company have the inability to pay debts when they are due. Financial distress as defined by Kristanti (2019) is a situation when a company is unable to fulfill its obligations. This happens as an early sign before the worst thing that can happen, which is bankruptcy.

While we're on the subject of bankruptcy, Law 37 of 2004 (Kepailitan dan Penundaan Kewajiban Pembayaran Utang - PKPU) governs the laws of Indonesia pertaining to this matter. Any debtor with two or more creditors who is unable to pay in full one due and receivable debt may be declared bankrupt by a court decision, either upon the debtor's request or upon the request of any one or more of those creditors, as stated in article 2, paragraph 1. Bankruptcy is clearly not solely a result of the company's financial status; it is a decision made by an authorised court.

The delisting of a public company's shares from the Indonesian Stock Exchange (IDX) is another potential outcome of financial difficulty. The IDX authorities must take this measure to safeguard investors' and the company's interests from possible losses. Regulation Number I-I Governing Delisting and Relisting of Shares on the Exchange, Provisions III.3.I.I., is the reference utilised by the IDX for delisting shares of listed businesses. The IDX is required by this law to delist a company's shares if the company faces at least one occurrence or condition that seriously threatens its ability to continue operating as a public corporation.

In addition to the regulations mentioned above, in order to increase protection for investors, the IDX considers it necessary to determine certain conditions for Listed Companies and Equity Securities from Listed Companies to be included in the criteria for Equity Securities under Special Monitoring, through Regulation No. II-S concerning Equity Securities Trading Under Special Monitoring. In its letter number Kep-00030/BEI/05-2022 dated 27 May 2022, IDX Directors sets out several criteria for equity securities to be included in special monitoring, which are then classified into 17 special notations. Of all these special notations, there are several notations that related to the financial distress criteria, namely B, M, E, A, D, L and S. If a company falls within these criteria, the company's shares are given a special note, which can be a consideration for IDX investors before making investment decisions on company shares.

In responding to the financial distress conditions experienced by the company, management must carry out an analysis and then make decisions quickly but precisely. Quick decisions must be taken because the longer the financial distress condition lasts, the more company resources will be wasted. Likewise, if the decisions taken are not correct, the result is that management's response will be ineffective and financial distress cannot be reversed successfully.

Bankruptcy is one of several options that companies experiencing financial distress can take. There are three options available to this type of business, say Pastena and Ruland (1986): 1) The business can keep running in the hopes of improving its financial situation; 2) A merger or acquisition might be an option; 3) Filing for bankruptcy and selling off assets would be the last resort.

For companies that choose to continue operations, the company must struggle to turn around its financial condition and try to achieve economic stability. When a firm's performance can be turned around from a downturn that threatens its survival to finally becoming a corporation that can attain sustained profitability, it is considered a successful turnaround. Appropriate management actions are very necessary in an effort to stop decline and stabilize company performance, according to Whitaker (1999). In deciding what actions need to be taken, it is necessary to know what factors need to be maintained and what needs to be taken to achieve a successful turnaround for a company experiencing financial distress.

The phenomenon of financial distress turning into a successful financial turnaround has also occurred in several large companies which are currently successful in becoming global companies such as Apple Inc., General Motors Company Inc., Fedex Corporation or the Renault SA - Nissan Motor Co Ltd alliance. The success of this financial turnaround was not achieved easily, because financial turnaround is a complex process. This complexity includes various combinations of external factors or the economic and business environment, as well as internal company factors such as the resources owned, and company strategies that are relevant and effective at various stages of performance decline.

Most financial turnaround strategies can be said to include two stages, namely a strategy to survive a decline in performance with the main aim of stabilizing the company's financial condition, and the next stage is a recovery strategy. Several studies have emerged regarding what factors in a financial turnaround strategy are the determinants of financial turnaround, for example whether retrenchment factors such as asset reduction, cost reduction or employee reduction and several other resources influence financial performance recovery in financial distress conditions. These factors focus on the internal company, where external factors, such as economic and business dynamics are seen as not being within the control of company management.

Resource factors that are thought to affect a company's financial turnaround success have been the subject of several prior studies using research objects at the IDX. These factors include potential earnings, free assets, firm size, asset retrenchment, expense retrenchment, profitability, level of leverage, degree of financial distress (severity), and CEO turnover. Of the 23 previous studies conducted on the IDX which are used as references, the results of these studies are not the same in concluding that there is a partial influence of these research factors or variables on the success of financial turnaround, or it could be said that there is still a research gap in terms of variables. An overview can be seen in Table 1 as follows:

Table 1: Research Factors in Previous Studies

| **No.** | **Research Factors** | **Partial Influence** | |
|---|---|---|---|
| | | **Influence** | **Not Influence** |
| 1 | Severity | 3 | 6 |
| 2 | Free asset | 8 | 7 |
| 3 | Asset retrenchment | 3 | 6 |
| 4 | Expenses retrenchment | 1 | 3 |
| 5 | Level of leverage | 2 | 1 |
| 6 | Prospective earnings | 0 | 1 |
| 7 | Firm size | 8 | 6 |
| 8 | CEO turnover | 0 | 9 |
| 9 | Profitability | 3 | 0 |

Source: processed data

From Table 1 we can see that the factors most frequently studied in previous studies are free assets, firm size, then severity, asset retrenchment, CEO turnover, then expenses retrenchment, level of leverage, profitability, and prospective earnings, with results or research conclusions not uniform, except for the CEO turnover factor, where all studies state that there is no partial influence, and the profitability factor, where all studies state that there is a partial influence. Differences in research periods, populations and research samples can cause differences in final research conclusions.

As financial distress may happen anytime to any corporation, research on financial distress and financial turnaround topics are always relevant and in demand. It is important for researcher to give contribution and to provide meaningful feedback based on empirical study of financial turnaround to business stakeholders, which in turn will also give suggestion on future research on the same topics. According to Chowdury (2002) the development of knowledge about corporate turnaround has grown rapidly in the last few decades, however, many agree that the literature on corporate turnaround is still limited in number, when compared with research in other fields, for example financial distress. Moreover, corporate turnaround research for developing countries was only widely seen in the East Asia area after the economic crisis in 1998, according to Abdullah and Husin (2010). This situation motivated the author to conduct study on the topic of financial turnaround with the research objects being companies listed on the Indonesian Stock Exchange.

This study was inspired by the previous studies of Smith and Graves (2005), Francis and Desai (2005), and Sudarsanam and Lai (2001), also by previous Indonesian researchers who conducted research in Indonesia, so there are similarities in several variables used, but this study offers novelty based on the financial turnaround theory used and on the research object which are manufacturing companies in Indonesia registered on the IDX, especially from the basic industry and chemistry sector, miscellaneous industry sector and consumer goods industry sector, and experiencing financial distress. This study also covering the research gap from previous studies, in addition to the difference in study period, which was from year of 2015-2019.

Nevertheless, this study may have some limitations, firstly on the population of samples taken which only cover manufacturing companies, although manufacturing companies already covers many business sectors. Secondly, the period of study is limited to 2015-2019 prior to pandemic of Covid-19 era, and thirdly, the study is not covering external factors. These limitations may give suggestion to other research in the future research within the same topics of financial turnaround.

**Literature Review**

According to Sudirsanam and Lai's (2001) research, the literature on turnaround strategies cites three main areas: operation, asset, and financial restructuring. Stabilizing business operations and reestablishing profitability with a focus on tight cost management and reduction of operational assets is the goal of operational restructuring, which is synonymous with efficiency strategy or operation strategy. Increasing efficiency and margins through the reduction of direct costs and the streamlining of overhead in accordance with volume is the goal of operational restructuring, which encompasses tactics for lowering operating expenses, increasing income, and decreasing operating assets (Slater, 1984). Companies in financial crisis often begin their turnaround strategies with operational restructuring (Hofer, 1980). The goal of efficiency measures is to maximize revenue (output) while minimizing costs (input). For a turnaround to be successful, Arogyaswamy and Yasai-Ardekani's (1997) research on the topic of cost reduction and efficiency improvement—which can boost profitability in the short term—is crucial. Another factor is investment in technology. The capacity of a business to turn a profit over a specific time frame is what Brigham and Houston (2001) mean when they talk about profitability. A company's profitability is a measure of its future profit potential, an indication of the efficacy and efficiency of its management, and a reflection of the success of its activities.

Reorganizing a company's assets, whether through investment or sale, is known as asset restructuring. According to Hofer (1980), asset divestiture and retrenchment are crucial for recovery in cases of extreme crisis and/or poor strategic health. For instance, in a scenario where the product or market is dropping, and the current capacity is far higher than the long-term revenue potential or assets. If a company's performance is going downhill, the management ought to do something about it, say Barker and Mone (1994). According to Hambrick and Schecter (1983), retrenchment is a method of increasing efficiency by cutting down on less productive firm resources. This strategy can significantly affect turnaround. However, corporations can also seek out acquisition possibilities that align with their core skills and have the potential for long-term profitability through asset restructuring. Hofer (1980) contended that a change in strategy direction is crucial for organizations that have previously pursued misguided strategies or are in the midst of declining or mature products or markets. Free assets are defined by Singh (1986) as the liquid, non-guaranteed resources of a corporation. On the other hand, according to White (1989), businesses that are in a financial bind but have enough free assets (i.e., more assets than debt or fixed assets than debt collateral) will have a better shot of avoiding bankruptcy. Free asset availability is a key differentiator between organizations that successfully execute a turnaround and those that fail, according to research by Casey et al. (1986), Campbell (1996), and Routledge and Gadenne (2000).

There are two main approaches to financial restructuring, as described by Sudarsanam and Lai: equity-based and debt-based. The former aims to reduce interest and debt payments by reorganizing a company's capital structure. Dividend cuts and other equity-related actions are examples of equity-based strategies, whereas debt-based strategies involve reorganizing the company's debt. Reducing or eliminating dividends can boost liquidity, but it could lead to agency disputes with shareholders, so it's important to carefully weigh both options. George and Hwang (2010) and Routledge and Gadenne (2000) found that companies with debt had a better chance of a successful turnaround. However, Molina (2005) argues that companies in financial distress are often burdened by large amounts of debt because over leverage is the main cause of financial difficulties. Zingales (1998) argues that high leverage makes survival less likely by limiting investment, and Giroudet et al. (2012) observed that performance improved significantly after debt reduction.

**Hypothesis Development**

Expenses retrenchment is part of the operational strategy related to all company actions in terms of cost reduction, such as cost rationalization, including the cost of goods sold and selling, general and administrative (SG&A) costs. Expense retrenchment is aimed at increasing the company's efficiency and profit margin, which is an important aspect for turnaround success because it can increase profitability in the short term, according to Arogyaswamy and Yasai-Ardekani (1997). Therefore, the better the efficiency strategy is implemented, the more cost savings will have a positive impact on increasing the company's ability to carry out turnaround, according to Lohrke and Bedeian (1998). The formulation of the hypothesis based on this description is as follows:

**H1 = Expense retrenchment have positive influences in successful financial turnaround**

Profitability is a company's ability to create profits over a certain period, according to Brigham and Houston (2001). Profitability can be used as an indicator of the success of company operations, reflecting the effectiveness and efficiency of company management. According to research by Taffler (1983), Casey et al (1986) and Routledge and Gadenne (2000), profitability is statistically significant and can be used to distinguish companies in financial distress and with the potential to survive, from companies experiencing liquidation. The greater the level of profitability relative to assets, the greater the potential for success in the company's financial turnaround. The formulation of the hypothesis based on this description is as follows:

**H2 = Profitability have positive influences in successful financial turnaround**

The logic of the asset retrenchment strategy is that by reducing assets that are performing poorly, the company can end its downward financial condition and it is hoped that this will improve the company's performance (DeWitt, 1993; Hoskisson and Johnson, 1992). Asset retrenchment is a consequence of a sharp decline in performance where the company's financial performance becomes very bad, according to Barker and Mone (1994). Based on previous research, asset retrenchment has an influence on the possibility of a company's financial turnaround being successful. The results of a study conducted by Pearce and Robbins (1992) found that companies that experienced a decline in financial performance and did not carry out asset retrenchment were less likely to turnaround and would continue to experience a decline in performance. The formulation of the hypothesis based on this description is as follows:

**H3 = Asset retrenchment have positive influences in successful financial turnaround**

Casey et al (1986), and also White (1989) report that the amount of free assets is an important variable in distinguishing companies that are successful in implementing a turnaround or those that are not. Companies experiencing distress with adequate free assets (such as assets that exceed debt or fixed assets that exceed debt collateral) will have a higher probability of success in avoiding bankruptcy because these assets enable the company to obtain the injection of funds needed to achieve a successful turnaround and provide support. which guarantees the lender that there are sufficient assets to repay the loan if necessary. In this case, free assets can be used as a proxy for measuring the company's ability to guarantee loans.

Measuring free asset resources is by comparing the number of assets that exceed the total amount of debt to total assets (Francis and Desai, 2005). The company's free resources will help the company reduce the effects of a decline in financial performance and provide resources to take effective action, so that companies with more free resources have a better chance of surviving during periods of financial distress, according to Barker and Mone (1998). The formulation of the hypothesis based on this description is as follows:

**H4 = Free assets have positive influences in successful financial turnaround**

The leverage ratio provides an overview of the sources of operating funds used by the company, besides that it also shows the risks faced by the company. The greater the risk experienced by the company, the greater the uncertainty in making profits in the future, according to Paramasivan (2009). This increase in risk is also related to how the company can survive the financial distress it is experiencing, because the higher the company's leverage value, the lower the possibility of the company successfully carrying out a financial turnaround. Giriati's (2021) research on the leverage factor in turnaround success shows that the debt to equity ratio has no effect on turnaround success, and advises companies to be careful in using debt in turnaround strategies because there is a risk of debt default which will have a negative impact on turnaround success. The formulation of the hypothesis based on this description is as follows:

**H5 = Leverage have positive influences in successful financial turnaround**

## RESEARCH METHODS

### Population and Sampling

The population in this study are manufacturing companies, especially from the basic and chemical industry sectors, miscellaneous industry and consumer goods industry sectors, which are listed on the Indonesia Stock Exchange (IDX), which reports its financials have been published in 2015-2019. The population is 125 companies. The companies that will be observed are companies that are experiencing financial distress. To measure the company's financial condition, Altman discriminant analysis calculations are used to produce a calculated Z-score value.

The sample determination was carried out purposively, that is, the sample companies were selected based on certain criteria (Candrawati, 2008). The criteria in question are:

1. Manufacturing companies in a consistent population are listed on the IDX continuously from 2015-2019.
2. Manufacturing companies in the population resulting from criterion 1, which publish financial reports continuously from 2015-2019.
3. Next, from the results of screening criteria 2, a sample of companies that experienced financial distress during 2015-2019 was selected, using the Altman Z-score formula whose data was taken from the company's financial reports. The samples selected were 2 groups, namely:
   a. Companies that in the 2015-2019 period always experienced financial distress (Smith and Graves 2005)
   b. Companies that in the 2015-2019 period experienced a Z-score in the financial distress category for at least 2 consecutive years and followed by a Z-score in the non-financial distress category for at least 2 consecutive years (Smith and Graves 2005)

### Variables and Model

The success of financial turnaround in manufacturing enterprises facing financial hardship is the dependent variable in this study, and it is measured using the Altman Z-score discriminant analysis in the following ways:

$$\text{Z-score} = 1{,}2\ WC/TA + 1{,}4\ RE/TA + 3{,}3\ EBIT/TA + 0{,}6\ MVE/BVD + 0{,}99\ S/TA$$

WC/TA = Working Capital / Total Asset
RE/TA = Retained Earnings / Total Asset
EBIT/TA = Earnings Before Interest and Tax / Total Asset

MVE/BVD = Market Value of Equity / Book Value of Debt
S/TA = Sales / Total Asset

From the calculated Altman Z-score value, the middle cut-off in the gray area, which is 1.81 – 2.99, then taken so that the Z-score value obtained is 2.40. Companies that have a Z-score value of less than or equal to 2.40 are categorized as companies in financial distress (Candrawati, 2008).

The data used in calculating the Altman Z-score formula was taken from the company's financial reports for the 2015-2019 period. Based on the sample that has been selected, 2 dichotomous categories are obtained for the dependent variable, namely:

a. Category 0, for samples that during the 2015-2019 period always experienced financial distress, or the company did not succeed in turnaround.
b. Category 1, for samples that during the 2015-2019 period experienced financial distress for at least 2 consecutive years and were followed by recovery conditions for at least 2 consecutive years, or the company succeeded in a turnaround.

In Table 2 below, the operational definition of the research independent variable is presented as follows:

Table 2: Operational Definition of Independent Variables

| No | Independent Variables | Description | Measurements |
|---|---|---|---|
| 1 | Expenses Retrenchment | Total Expenses Current Year - Total Expenses Previous Year, divided by Total Expenses Previous Year (Animah, 2017) | (TEt – TEt-1) / TEt-1 |
| 2 | Profitability | Ratio of Net Income and Average Total Asset (Wulandari & Gunawan, 2016) | ROA = NI / Averg TA |
| 3 | Asset Retrenchments | Total Asset Current Year - Total Asset Previous Year, divided by Total Asset Current Year (Wulandari & Gunawan, 2016) | (TAt – TAt-1) / TAt-1 |
| 4 | Free Asset | One minus the ratio of Total Liability divided by Total Asset (Wulandari & Gunawan, 2016) | 1 – (TL/TA) |
| 5 | Leverage | The ratio of Debt and Equity (Giriati, 2021) | Debt / Equity Ratio (%) |

The data analyzed as an independent variable is the 2016-2018 variable data, part of the 2015-2019 period, where the 2016-2018 period is estimated as the period when the company started taking response actions, it is expected that more changes in the company's condition can be seen after company took action against financial distress conditions in 2015. Then the companies that are predicted to be able to achieve financial turnaround, in 2018-2019, the last 2 years of the 2015-2019 period, is the period of successful turnaround, which is included in the category requirement of at least 2 years of being turned around to non-financial distress condition.

Descriptive statistics and inductive statistics (hypothesis testing) were the two statistical methods used to examine the data gathered and processed in this study. Quantitative data can be better understood and described through the use of descriptive statistics. To determine if independent variables have an effect on turnaround success, the logistic regression analysis method is employed for hypothesis testing.The logistic regression model proposed is:

$$Ln\frac{p}{1-p} = b0 + b1\ EXP + b2\ PROF + b3\ FREAS + b4\ ASRET + b5\ LEV$$

p = probability of company with successful turnaround
1-p = probability of company with unsuccessful turnaround
b0 = constant
b1-b6 = independent variable coefficient of successful turnaround (unsuccessful=0, successful=1)
EXP = expenses retrenchment
PROF = profitability
FREAS = free asset
ASRET = asset retrenchment
LEV = leverage

## RESULTS AND DISCUSSION

Based on the Z-score value during 2015-2019, companies that experienced financial distress for at least 2 consecutive years and followed by non-financial distress performance for at least 2 years, obtained 8 companies in the turnaround category, and 34 companies in the non-turnaround category, which are companies whose performance during 2015-2019 always experienced financial distress. The results show that the majority of the sample (81%) of manufacturing companies experienced declining financial conditions or experienced financial distress, as can be seen in Table 3 below:

Table 3: Sample Quantity

| No | Sample | Quantity | % |
|---|---|---|---|
| 1 | Non-Turnaround Companies | 34 | 81% |
| 2 | Turnaround Companies | 8 | 19% |
| Total | | 42 | 100% |

Source: processed data

### Descriptive Statistical Analysis

Companies in the turnaround group (T) and non-turnaround group (NT) are described, shown, and summarised using descriptive statistics for each independent variable in the research model. The data that was analysed includes variable data from 2016 to 2018. The results, which include minimum, maximum, mean, and standard deviation values, are displayed in Table 4 below. The analysis was conducted using the SPSS programme:

Table 4: Descriptive Statistical

| No | Variabel | Turnaround (T) | | | | Non-Turnaround (NT) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Min | Max | Mean | St Dev | Min | Max | Mean | St Dev |
| 1 | EXP | (0.54) | 0.84 | 0.09 | 0.27 | (0.92) | 0.96 | 0.03 | 0.22 |
| 2 | PROF | (0.16) | 0.51 | 0.07 | 0.11 | (0.22) | 0.18 | 0.00 | 0.06 |
| 3 | ASRET | (0.44) | 0.47 | 0.06 | 0.17 | (0.85) | 0.42 | 0.02 | 0.14 |
| 4 | FREAS | 0.11 | 0.91 | 0.58 | 0.24 | (2.59) | 0.74 | 0.25 | 0.51 |
| 5 | LEV | 0.10 | 8.26 | 1.26 | 1.70 | (3.04) | 11.10 | 1.82 | 2.21 |

Source: processed data

Table 4 shows the EXP variable which is measured by comparing the current year's total expense compared to previous year's total expense proportionally, to see if there is a decrease in the total expense value. The greater the decrease in expense value, the better, because it means the company is more efficient. For companies in the turnaround group (T), the minimum value is (0.54) and the maximum value is 0.84 and the mean value is 0.09 with a standard deviation of 0.27. Meanwhile, the EXP variable for non-turnaround (NT) group companies has a minimum value of (0.92) and a maximum value of 0.96 and a mean value of 0.03 with a standard deviation of 0.22. From these numbers, it can be seen that the mean values for both groups, both NT and T, are positive, so it is concluded that in general there has been no expense retrenchment, since the total expenses for the current year are still greater than last year, even though individually expense retrenchments occurred in several companies.

As a gauge of a company's profitability, the PROF variable calculates the Return on Assets (ROA) ratio, which is the ratio of net income to average total assets. Having a higher ROA number is desirable. Values for group T range from 0.16 to 0.51, with 0.07 as the mean and 0.11 as the standard deviation. In the meantime, the PROF variable for the NT group ranges from 0.22 to 0.18, with 0.00 as the mean and 0.06 as the standard deviation. Overall, the data suggests that while both groups' results are positive, the T group outperforms the NT group in terms of profitability.

To determine if there has been a decrease in the total asset value, the ASRET variable is calculated by proportionally comparing the current year's total assets to last year's total assets. The better for the business if it can maximise the use of its productive assets. The range of values for T group companies is from 0.44 to 0.47, with 0.06 as the mean and 0.17 as the standard deviation. In the meantime, NT group companies' ASRET variable ranges from 0.85 to 0.42, with 0.02 as the mean and 0.14 as the standard deviation. From the numbers where the mean is positive, it can be interpreted that in general the two groups, both T and NT groups, do not see any decline in assets or asset retrenchment, although individually several companies carrying out asset retrenchment.

The FREAS variable uses a measurement of the portion of total liabilities to total assets with a limit of 1 or 100%, to indicate resources that are still free, namely the amount of assets that exceeds the total liability. For T group companies, the minimum value is 0.11, the maximum is 0.91 and the mean value is 0.58 with a standard deviation of 0.24. It can be interpreted that group T companies have controlled total liability where the average is 58% of total assets. Meanwhile, NT group companies have a minimum value of (2.59), a maximum value of 0.74, and a mean value of 0.25 with a standard deviation of 0.51. In the NT group there are several companies that have a relatively large total liability of more than 100% of total assets, causing a negative FREAS value, which also makes the mean value smaller, namely 23%, which means the amount of free assets in the T group is better than the NT group.

The LEV variable uses the debt to equity ratio (DER) measurement. For group T companies, the minimum value is 0.1, the maximum value is 8.26, and the mean value is 1.26 with a standard deviation of 1.70. The conclusion is drawn that the DER value for group T is in good condition where there is no negative equity and the average debt value is 1.26 times the equity. Meanwhile, NT group have a minimum value of (3.04), a maximum value of 11.10, and a mean value of 1.82 with a standard deviation of 2.21. From these numbers it can be interpreted that NT group have relatively worse performance, where some companies have negative equity and debt values that are greater or an average of 1.82 times the equity value.

## Hypothesis Testing

The Hosmer and Lemeshow test was used to estimate the goodness of fit in the first analysis, and the hypothesis to determine the regression model's fitness was:
H0: there is a match between observations and possible predicted results (model fits the data)

H1: there is no match between observations and possible predicted results (the model does not fit the data)

Hosmer and Lemeshow test result is shown in below Table 5:

Table 5: Hosmer and Lemeshow Test Result

| **Step** | **Chi Square** | **Df** | **Sig** |
|---|---|---|---|
| 1 | 6.391 | 8 | 0.603 |

Source: processed data

The Hosmer and Lemeshow test yielded a chi-square value of 6.391, which is lower than the chi-square table value of 15.507, and a probability significance value of 0.603, which is higher than the α value of 0.05. Since the predicted and actual classifications are statistically indistinguishable, we may accept H0 and proceed with our analysis using the regression model.

Table 6: Overall Model Fit Test Step 0 Result

| **Iteration** | | **-2 Log Likelihood** | **Coefficient Constant** |
|---|---|---|---|
| Step 0 | 1 | 123.586 | -1.238 |
| | 2 | 122.705 | -1.435 |
| | 3 | 122.702 | -1.447 |
| | 4 | 122.702 | -1.447 |

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 122.702
c. Estimation terminated at iteration number 4 because parameter estimates changed by less than 0.001

Source: processed data

In the table above, the iteration history table at step 0 shown the value of -2LL is 122.702, and it is smaller than the chi square table value of 152.094 so that H0 can be accepted, which means that the model before entering the independent variable is a fit with the data

After entering the independent variables, iteration history table in step 1 shows that the -2LL value in step 1 of 76.449 is smaller than the -2LL value in step 0 of 122.702, which means that the overall model fit test results are feasible.

Table 7: Overall Model Fit Test Step 1 Result

| **Iteration** | | **-2 Log Likelihood** | **Coefficient** | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | **Constant** | **EXP (X1)** | **PROF (X2)** | **ASRET (X3)** | **FREAS (X4)** | **LEV (X5)** |
| Step 1 | 1 | 106.295 | -1.413 | 0.571 | 5.689 | 0.167 | 0.533 | -0.059 |
| | 2 | 92.275 | -2.349 | 1.428 | 11.176 | 1.074 | 1.71 | -0.093 |
| | 3 | 84.048 | -4.072 | 1.827 | 17.176 | 1.399 | 3.963 | 0.124 |
| | 4 | 77.976 | -8.086 | 1.536 | 18.386 | 2.675 | 9.934 | 0.805 |
| | 5 | 76.505 | -8.762 | 1.447 | 20.202 | 3.354 | 11.038 | 0.789 |
| | 6 | 76.469 | -8.852 | 1.479 | 20.699 | 3.457 | 11.159 | 0.781 |
| | 7 | 76.469 | -8.851 | 1.481 | 20.715 | 3.46 | 11.158 | 0.78 |
| | 8 | 76.469 | -8.851 | 1.481 | 20.715 | 3.46 | 11.158 | 0.78 |

a. Method: Enter
b. Constant is included in the model.
c. Initial -2 Log Likelihood: 122.702
d. Estimation terminated at iteration number 7 because parameter estimates changed by less than 0.001
Source: processed data

Next step, the 2 x 2 classification table is used to calculate the correct and incorrect estimated values. Table 8 below shows that in the predicted column of turnaround companies (T) there are 24 companies, while in the row the actual observation results are 12 companies experiencing turnaround, in the other side, for non-turnaround companies (NT) there are 102 companies, and in the row the actual observation results 99 companies experienced non-turnaround, so the overall accuracy of this model was 88.1%.:

Table 8: Classification Model Analysis

| | Observed Companies | | Predicted | | |
|---|---|---|---|---|---|
| | | | **Non-Turnaround 0** | **Turnaround 1** | **Percentage Correct** |
| Step 1 | Non-Turnaround | 0 | 99 | 3 | 97.1 |
| | Turnaround | 1 | 12 | 12 | 50.0 |
| | Overall Percentage | | | | 88.1 |

a. The cut value is 0.500

Source: processed data

Regression coefficient testing is the last step in the analysis process to determine the extent to which each dependent variable in the model influences the independent variables. The regression coefficient can be determined using Wald statistics and probability values (sig) as shown in Table 9 below:

Table 9: Regression Coefficient Test Result

| Iteration | | B | SE | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| Step 1 | EXP (X1) | 1.481 | 1.611 | 0.845 | 1 | 0.358 | 4.395 |
| | PROF (X2) | 20.715 | 6.951 | 8.882 | 1 | 0.003 | 991428768.9 |
| | ASRET (X3) | 3.460 | 3.062 | 1.277 | 1 | 0.259 | 31.813 |
| | FREAS (X4) | 11.158 | 2.901 | 14.792 | 1 | 0.000 | 70131.052 |
| | LEV (X5) | 0.780 | 0.269 | 8.411 | 1 | 0.004 | 2.182 |
| | Constant | -8.851 | 1.929 | 21.048 | 1 | 0.000 | 0.000 |

a. Variables entered on Step 1 EXP (X1), PROF (X2), ASRET (X3), FREAS (X4) dan LEV (X5)

Source: processed data

From the model above, the interpretation seen in the output variable display in the equation model analysis can be stated as follows:

Ln = -8.851 + 1.481 EXP + 20.715 PROF + 3.46 ASRET + 11.158 FREAS + 0.78 LEV

Logistic regression clearly shows that all independent variables are positively correlated, hence a higher value for EXP, PROF, ASRET, FREAS, or LEV indicates a better chance of a successful financial turnaround for the organisation.

**Expense Retrenchment (EXP)**

The results of the logistic regression test for the model shows that the expense retrenchment (EXP) variable consistently has a positive regression coefficient sign, with a probability value (sig) of 0.358 which is greater than the sig α value of 0.05, meaning that EXP has a positive effect on the probability of successful turnaround, but the effect is not significant. The results of this test also show that the sign matches the hypothesis, which means that reducing costs will encourage an increase in company profitability in the short term, as stated by Arogyaswamy and Yasai-Ardekani (1997) states that cost reduction increases a company's efficiency and profit margins, which are important factors for successful turnaround. Companies in financial crisis may increase their chances of a successful turnaround by cutting expenses, according to this study's findings, which corroborate those of Saragi et al. (2019). Meanwhile expense reduction does not affect the effectiveness of a company's turnaround in financial trouble, according to studies conducted by Chetta and Khomsiyah (2022) and Suratno et al. (2017).

**Profitability (PROF)**

The model's logistic regression test reveals that the profitability (PROF) variable consistently has a positive regression coefficient sign, with a sig α value of 0.05 and a probability value (sig) of 0.003. This indicates that PROF significantly and positively affects the likelihood of a successful turnaround. As a measure of profitability, the sign of the Return on Assets (ROA) figure matches the hypothesis being tested. The likelihood of a successful turnaround for the company is proportional to its ROA value. After deducting the expenses incurred to acquire these assets, return on assets (ROA) is a measure of a company's profitability. ROA can be used to measure the level of effectiveness of a company in managing the assets it owns and creating profits as explained by Brigham dan Houston (2001). The more efficiently the company manages its assets, the greater the profit it gets, the better the company's financial performance, and the company does not need to experience financial distress. The results of this research support the conclusions in previous research conducted by Wulandari and Gunawan (2016) and Lestari et al (2014), which reported that profitability influences positively the successful of financial turnaround by companies in financial distress.

**Asset Retrenchment (ASRET)**

The results of the logistic regression test for the model shows that the asset retrenchment (ASRET) variable consistently has a positive regression coefficient sign with a probability value (sig) of 0.259 which is greater than the sig α value of 0.05, meaning that asset retrenchment has a positive effect on the probability of turnaround success, however the effect is not significant, nevertheless the test's results are in agreement with the hypothesis. ASRET in this study is proxied by the percentage reduction in total assets from the previous year's total assets. Asset retrenchment is a consequence of a sharp decline in performance where the company's financial performance becomes very bad, according to Barker and Mone (1994), therefore an efficiency action by reducing company resources that are less effective and greatly influences the success of turnaround, according to Hambrick and Schecter (1983). The results of this research support papers written by Lestari and Triani (2014), as well as Kusumaatmaja (2021) which show that asset reductions have a positive influence on company turnaround success, but do not support the results of the Suhfriatiningsih (2014), as well as Wulandari and Gunawan (2016) study who do not accept that a decrease in assets can support the success of financial turnaround.

**Free Asset (FREAS)**

The logistic regression test for the model reveals that the free asset (FREAS) variable consistently has a positive regression coefficient sign, with a probability value (sig) of 0.00, which is less than the sig α value of 0.05. This implies that free assets significantly and positively impact the likelihood of a successful turnaround. The test's results are in agreement with the hypothesis, suggesting that high FREAS during the study period bode well for the company's turnaround prospects. In this analysis, FREAS is represented as total assets minus total debt as a percentage of total assets. As found by Routledge and Gadenne (2000) that the availability of free assets is an important determining variable in distinguishing companies that successfully carry out a turnaround from companies that are unsuccessful. The results of this research support papers written by Chetta and Khomsiyah (2022) and Hirmanto et al (2020) which show that free assets have a positive effect on turnaround success, however not necessarily agre with result of study conducted by Darmayanti et al (2021) that concluded free assets do not have positive impact to the success of financial turnaround.

**Leverage (LEV)**

The results of the logistic regression test for the models show that the leverage (LEV) variable consistently has a positive regression coefficient sign with a probability value (sig) of 0.004 which is greater than the sig α value of 0.05, meaning that LEV has a positive and significant effect on the probability of turnaround success. A high leverage ratio during the study period is indicative of a higher likelihood of the company's turnaround success, according to the signals of this test, which means that the hypothesis is correct. In this study, the Debt to Equity ratio (DER) is used as a proxy for leverage. One way to understand where a business gets its operational cash is by looking at its leverage ratio. Another indicator of the dangers that the business faces is the leverage ratio. According to Paramasivan (2009), the likelihood of future profit generation is directly proportional to the level of risk that a company is exposed to. This study's findings corroborate those of Fitriyanto et al. (2018), who found that leverage significantly affects the likelihood of a successful financial turnaround. While previous studies have found no correlation between the leverage variable (DER) and turnaround success (Nasti et al., 2016; Giriati, 2022), our findings contradict those studies.

## CONCLUSIONS AND SUGGESTIONS

### Conclusions

In general, the results of this research are expected to increase theoretical understanding for companies, creditors and investors in considering the determinants of successful financial turnaround for companies experiencing financial distress. Through the results of hypothesis testing and conclusions, one can be convinced that expense retrenchment, profitability, free assets, asset retrenchment and leverage factors have a positive influence on financial turnaround success.

The results of this research support the opinion of Sudarsanam and Lai (2001) regarding the company's financial turnaround strategy which is the basis of this research, namely operational restructuring, asset restructuring and financial restructuring. Operational restructuring is the first turnaround strategy to be implemented in companies experiencing financial distress, in which efficiency measures are taken including expense retrenchment to achieve profitability in the short term. The better the company carries out expense retrenchment, the higher the company's efficiency, the higher the profitability, the greater the probability of the company's success in financial turnaround.

Asset restructuring in this research is represented by free assets and asset retrenchment factors. Free assets are company assets that are not guaranteed to creditors. The company's free assets will help the company to overcome the impact of worsening financial performance because companies that have more free assets have a greater chance of surviving during a downturn, according to Barker and Mone (1998) and Francis and Desai (2005). Asset retrenchment is a company's attempt to reduce the number of assets to avoid company decline and financial difficulties, according to Nastiti and Pangestuti (2016). The greater the reduction in unproductive company assets, the more it will help the company create a competitive advantage and ultimately increase the probability of success in carrying out a financial turnaround.

Financial restructuring is the restructuring of a company's capital structure to ease the pressure of paying interest and debt and is separated into two equity-based and debt-based strategies, according to Sudarsanam & Lai (2001). Financial restructuring in this research tests the leverage factor. George and Hwang (2010) and Routledge and Gadenne (2000) conclude that companies that have debt can experience higher turnaround success. However, large debt will actually put the company in financial distress, because over leverage is usually the main cause of financial difficulties, according to Molina (2005). In debt there are elements of interest rates and currency which have a risk if the company is not wise in managing its debt, for this reason the company must be careful so that it does not get trapped in other financial difficulties.

**Suggestions**

For companies experiencing financial distress and trying to achieve success in financial turnaround, by knowing the influence of the variables expense retrenchment, profitability, free assets, asset retrenchment and leverage on the probability of success in financial turnaround, it is expected that this can be taken into consideration in taking effective strategies to achieve success. turnaround. However, it is necessary to know the factors causing the financial distress conditions experienced by the company so that appropriate strategies can be determined to overcome these conditions, for example whether financial distress is caused by ineffective internal operations so that efforts to improve internal management are needed or whether it is due to external factors such as the worsening national and global economic situation. For creditors, the determinants of financial turnaround success can be used to decide on granting loans to companies by analyzing the company's resilience in facing financial distress through considering the variables expense retrenchment, profitability, free assets, asset retrenchment and leverage, then determining policies in monitoring loans that have been granted. For investors, the determinants of financial turnaround success can help investors when assessing the possible financial condition of a company regarding the feasibility of investment plans in the company. This is because if bankruptcy occurs and liquidation continues, the investor is the last party to receive the remaining results of the liquidation process.

For academics, this research can add to the repertoire of research in the field of accounting, especially understanding the causes of financial distress, the financial turnaround cycle and the analysis process to determine the determinants of the success of financial turnaround in companies experiencing financial distress.

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# EFFECT OF GOOD CORPORATE GOVERNANCE (GCG), CORPORATE SOCIAL RESPONSIBILITY (CSR) DISCLOSURE, AND INTELLECTUAL CAPITAL ON TAX AVOIDANCE (Empirical Study on Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period)

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**ABSTRACT**

*Tax avoidance is a legal and safe strategy for taxpayers, since it does not conflict with the established tax terms. This study aims to test and analyze the effect of corporate governance by selecting variabel of the board of independent commissioners and auditing committees, disclosure of social responbility and intellectual capital on tax evoidance on transport and logistics companies registered at the Indonesian stock exchange 2019-2021. The study includes quantitative work with an associative approach that uses detailed financial statements annully. The population of the study included 30 transport and logistics companies listed in the Indonesia stock exchange period 2019-2021. Research sample were selected using purposive sampling technique to be obtained by 10 companies that met the study criteria over a time span of 20192021. Data analysis uses a double linear regression analysis techniques in which result significantly variable independent council of commissioners, auditing committees, and disclosure of social responbility do not affect tax avoidance. Whereas intellectual capital variables have significant impact on tax avoidance. Simultaneous variables of the independent council of commissioners, auditing committees, disclosure of social responbility and intellectual capital affect tax avoidance.*
*The Independent Board of Commissioners variable has no effect with a significant level of 0.562, the Audit Committee variable is 0.547, and the Corporate Social Responsibility variable is 0.517 or above 5%. While intellectual capital has an effect with a significance level of 0.004, Simultaneously, the variables of the Independent Board of Commissioners, Audit Committee, corporate social responsibility, and intellectual capital affect tax avoidance with a significance level of 0.23 or above 5%. From the results of the research disclosed, it can be concluded that there are suggestions to further tighten supervision over the implementation of corporate taxation so as to reduce the opportunity to practice tax avoidance.*

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## INTRODUCTION

Tax avoidance refers to a deliberate endeavor aimed at mitigating the tax liability without contravening legal provisions (Mardiasmo, 2016). In order to diminish the tax payable, organizations strategically leverage vulnerabilities within tax statutes and regulations, engaging in transactions that remain exempt from tax obligations. The prevalence of tax avoidance among companies attests to the prevailing challenges faced by public enterprises in Indonesia in effectively implementing sound corporate governance practices. Effective corporate governance represents the interconnectedness of entities responsible for overseeing corporate conduct, encompassing key stakeholders such as the board of commissioners, directors, and the

General Meeting of Shareholders (GMS). The establishment of good corporate governance serves the purpose of supervising tax planning and management, aligning with the parameters set by relevant legal frameworks. Through the application of good corporate governance practices, assurance is provided that corporate governance in the realm of taxation adheres to lawful principles, emphasizing the pursuit of legal tax avoidance strategies *(Hidayana, 2017).*

This research assesses good corporate governance through the examination of specific variables, namely the Independent Board of Commissioners and the Audit Committee. As outlined by (Surya and Yustiavandana (2006) in Hanum, 2013). the Independent Board of Commissioners assumes a pivotal role within a company, serving as a supervisor and providing guidance to ensure the company's operations align with prevailing regulations. The Jakarta Stock Exchange stipulates that a company must have a minimum of 30% independent commissioners, emphasizing their significance. The quantification of the Independent Board of Commissioners is determined by calculating the ratio of independent commissioners to the total number of commissioners within a company, as elucidated by Noriska Sitty Fadhila, (2017).

In the execution of its responsibilities, the Independent Board of Commissioners receives support from the Audit Committee. The establishment of an audit committee within a company is imperative to enhance the supervisory role of the Board of Commissioners, thereby contributing to the overall enhancement of corporate management. Particularly for companies listed on the Indonesia Stock Exchange, the presence of an audit committee is mandated as it serves as a conduit facilitating communication between the company and external auditors. The Audit Committee bears the crucial responsibility of ensuring that the company adheres to pertinent laws and regulations, conducts its operations with ethical considerations, and effectively oversees potential conflicts of interest and fraudulent activities perpetrated by company personnel (N. A. A. & L. Kurniasih, 2012). Corporate social responsibility (CSR) constitutes a managerial initiative undertaken by business entities with the aim of attaining sustainable development objectives grounded in economic, social, and environmental equilibrium. This entails the mitigation of adverse effects while maximizing positive contributions (www.csrindonesia.com, 2022). The execution of corporate social responsibility represents a manifestation of the broader concept of good corporate governance, portraying the entity as socially and environmentally accountable to society.

Beyond the significance of good corporate governance and corporate social responsibility, intellectual capital assumes a pivotal role within a company, serving as a foundational asset that confers superiority and competitiveness. The conceptualization of an intellectual model, indicative of the transition from service-based production to a knowledge-based economy, was initiated in the mid-1980s (Nurhayati, 2017). This underscores the transformative influence of intellectual capital in shaping the competitive landscape and strategic positioning of a company. The amount of Indonesian businesses employing knowledge-based strategies is indicative of the country's ongoing growth in intellectual capital. A company's ability to compete and perform better within itself can be enhanced by its intellectual capital, an intangible asset that demonstrates the source of information and knowledge.

The prevalence of tax avoidance practices, influenced by financial considerations, has been extensively studied both internationally and within Indonesia. It is undeniable that tax avoidance has become a customary practice within companies, as evidenced by ongoing cases. One notable instance is the tax avoidance phenomenon observed in the case of PT Garuda Indonesia Tbk (GIAA). This case involved the alleged smuggling of a Harley Davidson motorcycle ordered by the President and Director of PT Garuda Indonesia Tbk (GIAA), I Gusti Ngurah Askhara, along with two Brompton bicycles and their accessories. The smuggling operation utilized Garuda Indonesia's new Airbus A330-900 Neo aircraft with flight number GA9721. The discovery of these items occurred during an inspection of the aircraft hangar owned by PT Garuda Maintenance Facility (GMF) AeroAsia Tbk at Soekarno-Hatta International Airport, Tangerang City, Banten, in 2019. The suspicion arises that the smuggling of these items was orchestrated for the purpose of tax evasion, considering that Harley-Davidson motorcycles and Brompton bicycles fall under the category of luxury goods, subject to a 125 percent Luxury Goods Sales Tax (PPnBM) based on the goods' price (Kompas.com, 2019).

The selection of transportation and logistics companies is the object of research because the phenomenon of tax avoidance was found at PT Garuda Indonesia Tbk (GIAA), and the selection of transportation and logistics companies is useful to minimize the occurrence of tax avoidance practices, considering that the transportation and logistics sector is also one of the pillars of the country's economy. These activities have a significant opportunity for fraud, especially in tax payments. That way, it is important to increase knowledge so that the responsibilities that will be carried out by the company are well managed.

Based on the above phenomena and background, in this study, the researcher wants to examine "The Effect of *Good Corporate Governance* (GCG), *Corporate Social Responsibility* ***(***CSR) Disclosure, and *Intellectual Capital* on *Tax Avoidance* (Empirical Study of Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the Period 2019–2021)"**.**

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### Agency Theory

Agency theory, as conceptualized by Jensen, M.C., & Meckling, (1976). arises from the inherent conflict of interest between principals and agents. According to (Novitasari Astri, 2016) this theory characterizes an agency relationship as a contractual arrangement wherein one or more individuals (employers or principals) engage the services of other individuals (agents) to execute tasks and confer decision-making authority. The crux of agency theory lies in acknowledging the information asymmetry between company managers (agents) and shareholders (principals). Managers possess greater awareness of internal information and future prospects of the company compared to shareholders and other stakeholders, as articulated by (T. dan M. M. R. S. Kurniasih, 2013). The agency model aims to establish a mutually agreed-upon system between management (as agents) and shareholders or owners (as principals). From this perspective, the occurrence of tax avoidance in the context of agency theory is attributed to disparities in agreements between members (managers) and company owners (shareholders). Members seek substantial rewards for their performance, asserting that they have fulfilled the company's interests, optimized profits, and engaged in tax planning, including tax avoidance, as a means to minimize the tax burden. The dynamics of these relationships within the agency framework contribute to the emergence of tax avoidance practices as a strategy aligned with the interests and incentives of the involved parties.

### Tax

Tax, as defined by Law Number 28 of 2007 and expounded in the book by Resmi, (2019) on General Provisions and Tax Procedures, refers to mandatory contributions to the state. These contributions are owed by individuals or entities as stipulated by law, devoid of direct reciprocation, and are designated for state purposes aimed at fostering the greatest prosperity for the people.

S.I. Djajadiningrat's definition characterizes tax as an obligation to remit a portion of wealth to the state treasury, arising from a specific situation, event, or action that bestows a certain position. It is not framed as a punitive measure but rather as a mandated submission in accordance with government regulations, lacking a direct reciprocal service from the state for the maintenance of public welfare. Dr. N.J. Feldmann further posits that taxes represent unilaterally imposed obligations owed to authorities, lacking counterproduction and exclusively allocated to cover public expenditures.

Taxes are imposed based on or by the force of law and its implementing regulations. The payment of taxes does not entail an individual counterperformance by the government. The state, encompassing both central and local governments, collects taxes, and the resultant funds are intended for government expenditures. Any surplus in income is directed toward financing public investment initiatives. This framework underscores the legal compulsion, unidirectional nature, and public welfare orientation intrinsic to the concept of taxation.

**Tax Avoidance**

Tax avoidance refers to a legal and justifiable approach to minimize taxes while remaining within the confines of tax legislation, particularly through tax planning. It constitutes a strategic and methodical process employed by taxpayers that aligns with tax provisions, ensuring compliance with the law. The execution of tax avoidance involves the utilization of methods and techniques that capitalize on the vulnerabilities or "grey areas" present in tax laws and regulations. By navigating within the legal boundaries, taxpayers aim to optimize their tax liabilities without violating statutory provisions (Pohan, 2018).

**Good Corporate Governance**

According to the Forum Corporate on Indonesia (FGCI), good corporate governance is delineated as a framework of regulations that govern the relationships among shareholders, company management (managers), creditors, the government, employees, and other internal and external stakeholders concerning their rights and obligations. Essentially, it establishes a corporate governance system. The objective of implementing good corporate governance is to oversee all activities conducted by managers, aiming to minimize instances of tax avoidance within the company (Suprasto, 2019).

In alignment with the general guidelines for corporate governance in Indonesia, the key principles of good corporate governance encompass transparency, accountability, responsibility, independence, fairness, and equality. Additionally, Islam provides a comprehensive concept emphasizing devotion to prevent engagement in prohibited (haram) and dishonest practices (Azwirman, Yusnar Z Basri, Zulhelmy, 2019). This amalgamation of principles and values underscores the multifaceted nature of good corporate governance, encompassing legal and ethical considerations for the benefit of all stakeholders involved

**Independent Board of Commissioners**

As per Law No. 40 of 2007 concerning Limited Liability Companies, the Board of Commissioners serves as a corporate organ with the primary responsibilities of conducting general or specific supervision in accordance with the articles of association and providing advice to the board of directors. The Board of Commissioners is entrusted with the role of overseeing the company's operations, aligning with the principles of good corporate governance. Moreover, the Board of Commissioners carries the obligation of supervising the performance of the board of directors and ensuring the implementation of policies set forth by the board of directors. This dual function emphasizes the crucial role of the Board of Commissioners in upholding governance standards and safeguarding the interests of the company and its stakeholders (Santoso, 2015).

An independent commissioner is an individual who, in all aspects, has no affiliations with the controlling shareholder, maintains no relationships with the board of directors or the board of commissioners, and does not hold a directorial position in a company associated with the owner company. The Board of Commissioners, in which independent commissioners play a vital role, serves as a supervisor and guide, ensuring that the company adheres to relevant regulations. Furthermore, independent commissioners are required to possess a comprehensive understanding of laws and regulations pertaining to the capital market. Their appointment is typically proposed by shareholders who are not considered controlling shareholders during the General Meeting of Shareholders. This framework underscores the significance of independence and expertise in the role of independ (Pohan, 2018).

**Audit Committee**

The Indonesian Audit Committee Association (Santoso, 2015) characterizes the Audit Committee as a professionally and independently operating committee. Formed by the board of commissioners, its primary task is to assist and reinforce the functions of the board of commissioners, particularly in overseeing the financial reporting process, risk management, audit execution, and the implementation of good corporate governance within the company. The Audit Committee is identified as a highly effective entity in the implementation of good corporate governance, playing a significant role in mitigating fraud in financial reporting. In line with ensuring the effectiveness of good corporate governance, the audit committee report is typically included in the company's annual report, as highlighted by (Al-Baidhani, 2014). This integration emphasizes the integral role of the Audit Committee in promoting transparency, accountability, and sound financial practices within the corporate framework.

Since the introduction of Good Corporate Governance recommendations on the Indonesia Stock Exchange (IDX) in 2000, audit committees have become a standard component of corporate governance for public companies. The Audit Committee serves a dual role: providing supervision during the financial reporting process and internal oversight, as mandated by the Indonesia Stock Exchange, which requires all business entities to have an Audit Committee overseen by Independent Commissioners. This committee plays a crucial role in monitoring the performance of the company's management and the financial statements produced by the management. As per BAPEPAM-LK Nomor IX.15, the Audit Committee is a committee established by the board of commissioners to aid in carrying out their duties by providing opinions aimed at enhancing the quality of work and reducing irregularities in company management. Building on agency theory proposed by. (Jensen, M.C., & Meckling, 1976) the Audit Committee, within this theoretical framework, is assigned a distinct task of assisting the Board of Commissioners in fulfilling their responsibilities, thereby mitigating agency conflicts. The Audit Committee plays a pivotal role in guiding management to act diligently in the execution of company operations, including matters related to taxation. According to the agency theory, the presence of an Audit Committee contributes to the reduction of agency conflicts. Importantly, a higher number of Audit Committees is associated with a lower likelihood of tax avoidance.

## Corporate Social Responsibility

Corporate social responsibility (CSR) involves a company's responsibility to stakeholders and parties associated with the company. The level of CSR undertaken by a company reflects its commitment to the community. In broader terms, CSR can be understood as the company's engagement in economic, legal, ethical, and discretionary activities, fostering harmonious relationships with various stakeholders, including consumers, suppliers, the government, employees, and shareholders (Hidayat, 2020). From the perspective of Islamic accounting, CSR reporting aligns with Islamic principles outlined in the Qur'an (Surah Al-Baqarah, verse 282). This Islamic directive emphasizes fairness and correctness in conducting trade transactions or business activities, with the aim of preventing losses and conflicts among individuals (Azwirman, Yusnar Z Basri, Zulhelmy, 2019). Several factors underscore the significance of corporate social responsibility, including the increasing globalization that breaks down barriers between regions worldwide, CSR as a means to fulfill aspects of good corporate governance, and CSR serving as an indicator of an organization meeting ethical standards. This, in turn, can minimize crises and enhance the company's reputation in the future.

## Intellectual Capital

The definition of intellectual capital provided by (Harrison, S., & Sullivan, 2000) characterizes it as the success of a company that is significantly influenced by the company's ongoing efforts to maximize various organizational values. These values encompass heightened profits, enhanced customer loyalty, the acquisition of innovations from other companies, cost reduction, and improvements in productivity. In essence, intellectual capital encapsulates the collective knowledge, expertise, and intangible assets within a company that contribute to its overall success and competitive advantage.

Intellectual capital, as defined by (Hikmat, I., Akhmadi & Purwanda, 2019). represents the resources and knowledge within a company in the form of intangible assets. When utilized optimally, these assets enable the company to implement strategies effectively and efficiently, thereby serving as added value and contributing to the company's competitive advantage. Intellectual capital is essentially the intangible knowledge and allure owned by a company, providing additional benefits through the establishment of business processes and delivering greater value compared to competitors or other companies. To measure intellectual capital, one commonly used approach is the VAIC™ (Value Added Intellectual Coefficient) method. The calculation of VAICTM involves several steps, which typically include assessing the value of human capital, structural capital, and relational capital within the organization. This method aims to quantify the intellectual capital and its contribution to the overall value and competitiveness of the company.

## Research Model

The research model delineates the interconnections between variables to be examined in the study. In this specific research model, the framework of thought revolves around understanding the impact of the Board of Commissioners, Audit Committee, Disclosure of Corporate Social Responsibility, and Intellectual Capital on Tax Avoidance. The empirical investigation focuses on Transportation and Logistics Companies listed on the Indonesia Stock Exchange, covering the period from 2019 to 2021.

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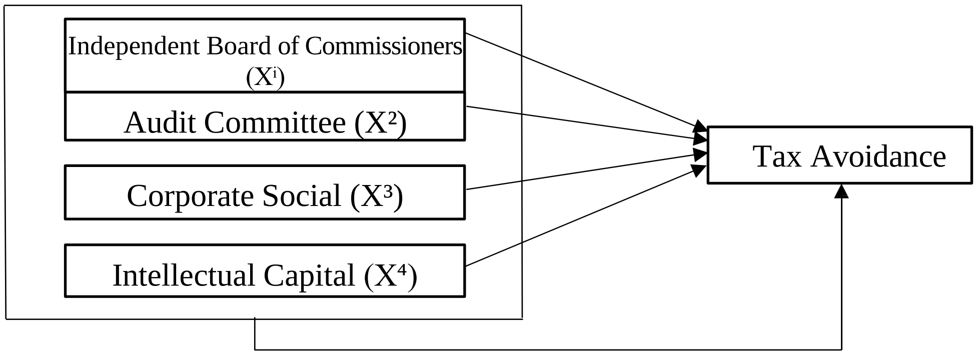


*Hypothesis*

H1: Independent Board of Commissioners affects *Tax Avoidance* in Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period.

H2: The Audit Committee affects *Tax Avoidance* in Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period.

H3: Disclosure of *Corporate Social Responsibility* affects *Tax Avoidance* in Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period.

H4: *Intellectual Capital* affects *Tax Avoidance* in Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period.

H5: Independent Board of Commissioners, Audit Committee, *Corporate Social Responsibility* Disclosure, *Intellectual Capital* affect *Tax Avoidance* in Transportation and Logistics Companies Listed on the Indonesia Stock Exchange for the 2019-2021 Period.

## RESEARCH METHODS

The research method employed is a quantitative approach using a quasi-experimental design. The study encompasses all transportation and logistics companies that are publicly listed on the Indonesia Stock Exchange (IDX) for the period spanning from 2019 to 2021. The data used for the study is secondary in nature and has been obtained from the official website of the Indonesia Stock Exchange (IDX), accessible at Www.idx.co.id, (2022).

The data collection techniques utilized in this research involve the literature study method and documentation. The literature study method involves the systematic review and analysis of journals, books, literature, previous research, and other relevant media that pertain to the topics under investigation. This approach allows the researcher to gather comprehensive insights, theories, and empirical findings related to the variables and relationships being studied.

The sample for this research is derived from the population using the purposive sampling technique. Purposive sampling is chosen because the selection of companies is based on specific criteria that align with the objectives of the study. In other words, only companies that meet certain predetermined criteria are included as research objects.

**Tabel 1 : List of Research Population**

| No | Code | Company Name |
|---|---|---|
| 1 | AKSI | PT. Mineral Sumber Daya Mandiri Tbk |
| 2 | ASSA | PT. Adi Sarana Armada Tbk |
| 3 | BIRD | PT. Blue Bird Tbk |
| 4 | BLTA | PT. Berlian Laju Tanker Tbk |
| 5 | BPTR | PT. Batavia Prosperindo Trans Tbk |
| 6 | AAID | PT. AirAsia Indonesia Tbk |
| 7 | DEAL | PT. Dewata Freightinternational Tbk |
| 8 | ELPI | PT. Pelayaran Nasional Ekalya Purnamasari Tbk |
| 9 | GIAA | PT. Garuda Indonesia (Persero) Tbk |
| 10 | HAIS | PT. Hasnur Internasional Shipping Tbk |
| 11 | HATM | PT. Habco Trans Maritima Tbk |
| 12 | HELI | PT. Jaya Trishindo Tbk |
| 13 | JAYA | PT. Armada Berjaya Trans Tbk |
| 14 | KJEN | PT. Krida Jaringan Nusantara Tbk |
| 15 | LRNA | PT. Eka Sari Lorena Transport Tbk |
| 16 | MIRA | PT Mitra International Resources Tbk |
| 17 | NELY | PT. Pelayaran Nelly Dwi Putri Tbk |
| 18 | PPGL | PT. Prima Globalindo Logistik Tbk |
| 19 | PURA | PT. Putra Rajawali Kencana Tbk |
| 20 | RCCC | PT. Utama Radar Cahaya Tbk |
| 21 | SAFE | PT. Steady Safe Tbk |
| 22 | SAPX | PT. Satria Antaran Prima Tbk |
| 23 | SDMU | PT. Sidomulyo selaras Tbk |
| 24 | SHIP | PT. Sillomaritime Perdana Tbk |
| 25 | TAXI | PT. Expres Trasindo Utama Tbk |
| 26 | TMAS | PT. Temas Tbk |
| 27 | TNCA | PT. Trimuda Nuansa Citra Tbk |
| 28 | TRJA | PT. Transkon Jaya Tbk |
| 29 | TRUK | PT. Guna Timur Raya Tbk |
| 30 | WEHA | PT. WEHA Transportasi Indonesia Tbk |

Sumber: (Www.idx.co.id, 2022)( accessed 28 November 2022)

The sample is part of the population, which can be obtained by the purposive sampling technique. The purposive sampling technique is used because, in a study, only companies that meet the criteria can be used as research objects.

**Table 2: List of Sample Criteria**

| No | Kriteria | Jumlah |
|---|---|---|
| 1 | Transport and Logistics companies listed on the Indonesia Stock Exchange | 30 |
| 2 | Transportation and Logistics companies listed on the Indonesia Stock Exchange that do not have complete financial reports for the period 2019-2021 | (10) |
| 3 | Transport and Logistics companies listed on the Indonesia Stock Exchange that have a loss before tax | (10) |
| 4 | Transportation and Logistics companies listed on the Indonesia Stock Exchange that can meet the criteria | 10 |
| 5 | Period Year of Research Observation | 3 |
| 6 | The amount of research data sampled | 30 |

Source: Data processed 2022

Based on table 1, there are 10 companies that meet the research criteria multiplied by three periods. So that the amount of data to be studied is 30 samples. The following table is the sample in this research:

**Table 3: Sample of Transport and Logistics Companies**

| No. | Code | Company Name |
|---|---|---|
| 1 | ACTION | PT Mineral Sumberdaya Mandiri Tbk |
| 2 | ASSA | PT Adi Sarana Armada Tbk |
| 3 | BLTA | PT Berlian Laju Tanker Tbk |
| 4 | BPTR | PT Batavia Prosperindo Trans Tbk |
| 5 | HELI | PT Jaya Trishindo Tbk |
| 6 | JAYA | PT Armada Berjaya Trans Tbk |
| 7 | NELY | PT Pelayaran Nelly Dwi Putri Tbk |
| 8 | PURA | PT Putra Rajawali Kencana Tbk |
| 9 | TMAS | PT Temas Tbk |
| 10 | SHIP | PT Sillomaritime Perdana Tbk |

Source: Data processed 2022

The data analysis technique in this study uses multiple linear regression analysis, which is carried out with the help of the SPSS (statistical package for social science) computer program. Multiple linear regression analysis is used to determine the effect of independent variables, namely the Independent Board of Commissioners, Audit Committee, corporate social responsibility, and intellectual capital, on the dependent variable, namely tax avoidance. The following is the formula for multiple linear regression:

$$\boxed{Y=\alpha+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+e\ldots\ldots}$$

Describtion

| | |
|---|---|
| Y | : *Tax Avoidance* |
| α | : Constant |
| β1 – β4 | : Regression Coefficient |
| X1 | : Independent Board of Commissioners |
| X2 | : Audit Committee |
| X3 | : *Corporate Social Responbility* |
| X4 | : *Intellectual Capital* |
| e | : Error (Estimator error rate in research) |

**Operational definition of variables**

**Dependent Variabel**

*Tax avoidance is* measured using the *Cash Effective Tax Rate (CETR)* (Hanlon, 2010).

$$Cash\ ETR\ = \frac{Cash\ Tax\ Paid\ i,t}{Pretax\ Income\ i,t}$$

**Independent variable**

In this study, there were four (four) independent variables studied, namely the Board of Independent Commissioners, Audit Committee, Corporate Social Responsibility, and Intellectual Capital. The definition and measurement of each variable are as follows:

a. Independent Commissioners

To measure the independent board of commissioners in the company, it can be formulated as follows:

$$\text{Independent Commissioners} = \frac{\text{Number Of Independent Commissioner}}{\text{Total Number Of Independent Commissioner}}$$

b. Audit Committee

The measurement of the audit committee in a company can be formulated using the expression:

$$\text{Audit Committee} = \sum \text{Audit Committee}$$

c. Corporate Social Responsibility

The measurement of corporate social responsibility in a company can be formulated using the CSR Index:

$$\text{CSR Index} = \frac{\text{Amount of information disclosed}}{\text{Total Amount of information disclosed}}$$

**Intellectual Capital**

To measure *intellectual capital,* the VAIC$^{TM}$ value can be calculated through several steps:

VA=OUT-IN

Description:

OUT = Revenue of all products and services sold

IN =All company costs, except employee costs

1. VAHU=VA/HC

Description:

VA = Company value added

HC = Total salaries and wages of employees

2. STVA=SC/VA

Description:

SC = Structural capital (VA-HC)

VA = Company value added

3. VAIC™=VACA+VAHU+STVA

## RESULTS AND DISCUSSION

### Research Results

This study aims to determine the effect of good corporate governance, corporate social responsibility disclosure, and intellectual capital on tax avoidance in transportation and logistics companies listed on the Indonesia Stock Exchange for the 2019–2021 period. This study was conducted to see the effect of four independent variables, namely the Independent Board of Commissioners, the Audit Committee, corporate social responsibility, and intellectual capital, and the dependent variable, namely tax avoidance. This chapter will present the results of data analysis with the variables used so that they can be discussed sequentially regarding general description, research results, multiple regression, classical assumption testing, and hypothesis testing.

### Descriptive Statistical Test

In this study, the descriptive statistical test will provide an overview of the data in the form of minimum, maximum, mean, and standard deviation values. By using SPSS version 22, results from descriptive statistical analysis were obtained.

**Tabel 4 Descriptive Statistical Test Results**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Tax Avoidance | 30 | .0276 | 1.6133 | .316980 | .3456250 |
| Independent Board of Commissioners | 30 | .3333 | .6667 | .500000 | .0978700 |
| Audit Committee | 30 | 2.0 | 3.0 | 2.933 | .2537 |
| CSR Disclosure | 30 | .1099 | .5055 | .320879 | .1108484 |
| Intellectual Capital | 30 | 1.3916 | 5.6825 | 2.441076 | 1.1097195 |
| Valid N (listwise) | 30 | | | | |

Sumber: *Ouput* SPSS versi 22 (2023)

Based on table 4, it can be seen that the amount of data in this study is 30 samples, which show the following:

1. The Tax Avoidance variable has a minimum value of 0.0276, namely in the Berlian Laju Tanker Tbk (BLTA) company in 2021, a maximum value of 1.6133 in the Mineral Sumberdaya Mandiri Tbk (AKSI) company in 2020, a mean value of 0.316980 and a standard deviation of 0.3456250. The mean obtained is lower than the standard deviation value, meaning that the data on the Tax Avoidance variable varies and is spread far from the mean value.

2. The Independent Board of Commissioners variable has a minimum value of 0.3333, namely in the Adi Sarana Armada Tbk (ASSA) company in 2020 and 2021 as well as in the Nelly Dwi Putri Shipping Tbk (NELY) company in 2019, 2020 and 2021. The maximum value is 0.6667 in the Berlian Laju Tanker Tbk (BLTA) company in 2019, the Armada Berjaya Trans Tbk (JAYA) company in 2021, as well as the Temas Tbk (TMAS) company in 2019, 2020 and 2021. The mean value is 0.500000 and the standard deviation is 0.978700. The mean obtained is lower than the standard deviation value, meaning that the data on the Independent Commissioner variable varies and is spread far from the mean value.

3. The Audit Committee variable has a minimum value of 2.0, namely in the company Berlian Laju Tanker Tbk (BLTA) in 2019 and 2020, and a maximum value of 3.0 in companies other than Berlian Laju Tanker Tbk (BLTA) in 2019 and 2020. The mean value is 2.933, and the standard deviation is 0.2537. The mean obtained is higher than the standard deviation value, meaning that the Audit Committee variable data is less or has a low data deviation, so that the data is only centered on the mean value.

4. The corporate social responsibility variable has a minimum value of 0.1099, namely in the Mineral Sumberdaya Mandiri Tbk (AKSI) company in 2019 and 2020, and a maximum value of 0.5055 in the Adi Sarana Armada Tbk (ASSA) company in 2021. The mean value is 0.320879, and the standard deviation is 0.1108484. The mean obtained is higher than the standard deviation value, meaning that the corporate social responsibility variable data has a lower or lower data deviation, so that the data is only centered on the mean value.

5. The intellectual capital variable has a minimum value of 1.3916, namely in the Putra Rajawali Kencana Tbk (PURA) company in 2020, and a maximum value of 5.6825 in the Mineral Sumberdaya Mandiri Tbk (AKSI) company in 2020. The mean value is 2.441076, and the standard deviation is 1.1097195. The mean obtained is higher than the standard deviation value, meaning that the intellectual capital variable data is less or has a low data deviation, so that the data is only centered on the mean value.

**Data Analysis**

Data analysis in this study uses multiple linear regression analysis models. The use of multiple linear regression models aims to determine the accuracy of the relationship between the independent variables (X), namely the Independent Board of Commissioners, Audit Committee, corporate social responsibility, and intellectual capital, and the dependent variable (Y), namely tax avoidance.

**Tabel 5 : *Coefficients*[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .592 | .792 | | .747 | .462 |
| | Independent Board of Commissioners | -.370 | .630 | -.105 | -.588 | .562 |
| | Audit Committee | -.141 | .231 | -.103 | -.610 | .547 |
| | CSR Diclosure | -.356 | .541 | -.114 | -.658 | .517 |
| | Intellectual Capital | .179 | .056 | .575 | 3.181 | .004 |

a. Dependent Variable: Tax Avoidance
Sumber: *Output* SPSS 22 (2023)

**The Effect of Independent Board of Commissioners on *Tax Avoidance***

The test results indicate that the Independent Board of Commissioners variable in Good Corporate Governance does not have a statistically significant effect on Tax Avoidance for transportation and logistics companies. The significance level, which is 0.562 or above 5%, leads to the rejection of the first hypothesis (H1). This result suggests that the presence of independent commissioners alone, in terms of their proportion in a company, does not guarantee a significant impact on Tax Avoidance. The explanation provided is that not all members of the Independent Board of Commissioners may be able to demonstrate true independence, leading to ineffective supervisory functions. This ineffectiveness, in turn, contributes to the inadequate oversight of management in carrying out Tax Avoidance practices. Moreover, the statement implies that the proportion of independent commissioners, whether large or small, may not be the sole determining factor for preventing Tax Avoidance. Instead, the emphasis is placed on the quality and genuine independence of the commissioners to ensure effective oversight. The suggestion is that an increase in the number of independent commissioners in a company may lead to a decrease in tax avoidance practices due to higher levels of tax compliance.

**Effect of Audit Committee on *Tax Avoidance***

The test results reveal that the Audit Committee variable in Good Corporate Governance does not have a statistically significant effect on Tax Avoidance for transportation and logistics companies, as indicated by a significance level of 0.547 or above 5%. Consequently, the second hypothesis (H2) is rejected. The explanation provided suggests that the number of audit committees in a company, whether many or few, does not have a direct preventive effect on Tax Avoidance practices. The example of PT Garuda Indonesia Tbk (GIAA), mentioned earlier, illustrates that even with more than three audit committees, the company engaged in tax avoidance. Hence, the conclusion drawn is that the prevention of tax avoidance in a company is not solely determined by the quantity of audit committees but rather by the quality of the audit committee itself. A qualified audit committee, operating professionally and independently, is deemed crucial for preventing undesirable actions by company management. The statement proposes that the effectiveness of the audit committee in curbing tax avoidance practices lies in its competence and independence. It is suggested that the more members an Audit Committee has, the lower the likelihood of tax avoidance practices, indicating that a greater number of qualified individuals can contribute to enhanced oversight.

**The Effect of *Corporate Social Responsibility* on *Tax Avoidance***

The test results indicate that the Corporate Social Responsibility variable, assessed using the Cash ETR (Effective Tax Rate) indicator, does not have a statistically significant effect on Tax Avoidance for transportation and logistics companies. The significance level is 0.517 or above 5%, leading to the rejection of the third hypothesis (H3). The provided explanation suggests that Corporate Social Responsibility (CSR) provides companies with a significant opportunity for tax avoidance. This is attributed to the ability of companies to suppress profits through CSR activities. Furthermore, the information disclosed regarding CSR activities in company reports may not necessarily align with the actual financial condition of the company. Consequently, the level of disclosure of social responsibility activities in the annual report is deemed unreliable as a benchmark for assessing the extent of tax avoidance by the company. The statement concludes that, contrary to the hypothesis, there is no direct correlation between the level of Corporate Social Responsibility and the level of tax avoidance. It is argued that higher levels of Corporate Social Responsibility do not necessarily result in lower tax avoidance, challenging the notion that increased CSR practices automatically lead to reduced tax avoidance practices within companies.

**Effect of *Intellectual Capital* Influence of Independent Board of Commissioners on *Tax Avoidance***

The test results reveal that the Intellectual Capital variable, assessed using the VAIC™ (Value Added Intellectual Coefficient) indicator, has a significant effect on Tax Avoidance for transportation and logistics companies. The significance level is 0.004, falling below the 5% threshold, leading to the rejection of the fourth hypothesis (H4). This outcome suggests a significant relationship between Intellectual Capital and Tax Avoidance. The finding implies that knowledge plays a crucial role in enhancing overall company performance. In this context, the result indicates that higher levels of Intellectual Capital are associated with lower levels of Tax Avoidance. This underscores the importance of intellectual resources, skills, and capabilities in influencing the company's approach to tax management and compliance

**Table 6: ANOVA[a]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .596 a | .35 5 | .252 | .298951 8 | 1.911 |

a. Predictors: (Constant), Intellectual Capital, Audit Committee, CSR Disclosure,
Independent Board of Commissioners
b. Dependent Variable: Tax Avoidance
Source: SPSS 22 *output* (2023)

**The Effect of Independent Board of Commissioners, Audit Committee, *Corporate Social Responsibility* Disclosure, *and Intellectual Capital* on *Tax Avoidance***

Based on the results presented in Table 4, the test indicates that the Good Corporate Governance variables, including the Independent Board of Commissioners and the Audit Committee, Corporate Social Responsibility Disclosure, and Intellectual Capital, collectively exhibit a significant effect on Tax Avoidance for transportation and logistics companies. The significance level is reported as 0.23 or above 5%, leading to the acceptance of the fifth hypothesis (H5). This outcome aligns with the theoretical framework employed in the study, particularly with the application of agency theory to the context of tax avoidance practices. The agency theory posits that the relationship between stakeholders and company management is crucial, necessitating collaboration to achieve company goals. The combined impact of Good Corporate Governance, Corporate Social Responsibility, and Intellectual Capital suggests that when these elements work synergistically, the company's goal of achieving profits is more attainable, resulting in minimal tax avoidance practices. The conclusion drawn from this test aligns with prior research, as referenced by (Herlina, 2020) and (Lesatanova Tricahya Avilya, 2022) Both studies suggest that various elements, including Good Corporate Governance, Corporate Social Responsibility, and Intellectual Capital, play integral roles in minimizing the occurrence of tax avoidance practices within companies.

## CONCLUSIONS

The research results indicate that, individually, the Independent Board of Commissioners, Audit Committee, and Corporate Social Responsibility Disclosure variables do not have a significant effect on Tax Avoidance in the empirical study of Transportation and Logistics Companies listed on the Indonesia Stock Exchange for the 2019-2021 period. However, Intellectual Capital, as measured by the VAIC™ indicator, exhibits a significant effect on Tax Avoidance. In the simultaneous regression test, considering all variables together, including the Independent Board of Commissioners, Audit Committee, Corporate Social Responsibility Disclosure, and Intellectual Capital, there is a collective and significant influence on Tax Avoidance in the specified context. This underscores the importance of examining multiple factors simultaneously to understand the complex relationship between corporate governance, social responsibility, intellectual capital, and tax avoidance within the transportation and logistics sector during the specified timeframe. By adding characteristics not included in the study and broadening the conversation, it is hoped that this research can serve as inspiration. To get a better understanding of the phenomena of tax avoidance methods, future research can potentially extend the duration of the study period and investigate additional industries.

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# DIGITAL ACCOUNTING INFORMATION SYSTEM IMPLEMENTATION AT BPKAD SAMOSIR DISTRICT

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**ABSTRACT**

*Problems at BPKAD Samosir Regency evolved over time with the changing landscape of information technology. Initially, BPKAD relied on Microsoft Office Excel software. However, with technological advancements, Microsoft Office Excel was superseded by e-finance applications. The e-finance application played a crucial role in supporting financial activities, particularly accounting, and was in use from 2019 until the conclusion of 2020. In early 2021, a further enhancement occurred as the SIPKD application (Regional Financial Management Information System) took over the role from the previous e-finance application. The aim of this research is to identify and analyze the factors that influence, either partially or simultaneously, the implementation of the Computer-Assisted Accounting System in the management of assets and finances of Samosir Regency. To conduct this research, researchers used quantitative methods with primary data, by distributing questionnaires to Samosir Regency BPKAD employees. Research participants are public service employees and honorary BPKAD Samosir Regency employees who have worked for at least two years and have made a direct contribution to the implementation of the Informal system. The research was conducted between March and April 2023. The results showed that the application of personal technical skills, user involvement, accounting expertise, and superior assistance had a positive and significant impact on the implementation of computerized accounting information systems, while training and education did not have a positive or significant impact on the implementation of information systems. computerized accounting. Human Resources Management plays a crucial role in the successful implementation and operation of Computerized Accounting Information Systems (CAIS) within an organization. This paper examines the key factors that influence the effective utilization of CAIS, including Personal Technical Ability, User Involvement, Training and Education, Accounting Knowledge, Leadership Support, and the Application of CAIS. The recommendation from this research is to add other variables outside the variables that have been researched, such as Good Government Governance, Use of Information Technology, and others. and conducting in-depth interviews regarding the advantages and disadvantages of implementing a computerized accounting information system. As well as adding references and expanding research objects such as all SKPD in Samosir Regency*.

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## INTRODUCTION

As for the problems at BPKAD Samosir Regency. Initially BPKAD only used Microsoft Office Excel software, but as information technology developed, the role of Microsoft Office Excel was replaced by e-finance applications. The e-finance application itself is used to support financial activities, especially accounting, where this application has been used from 2019 to the end of 2020. In early 2021, the role of the e-finance application was replaced by the SIPKD application (Regional Financial Management Information System) as an improvement on the previous application.

Personal technical skills are skills that demonstrate a person's ability to complete difficult tasks (Witara & Sumadi, 2022). The ability of information system users to use computer software and hardware well in order to process data into high quality and reliable information is known as personal technical proficiency. (Permana & Suryana, 2020) To maximize the benefits of information systems, personal technical proficiency is essential. Especially when we live in the current era of globalization, accounting information systems are very important for controlling business operations. The Theory of Technology Adoption Model (TAM) states that the two main factors that influence a person's decision to adopt and use technology are practical and enjoyable. Findings from Theory indicate that there is a higher level of personal understanding regarding the benefits of using information systems for accounting and there is greater motivation to use such systems. By producing high quality data, accounting information systems can increase company value. (Perbarini, 2012). In line with research conducted by (Witara & Sumadi, 2022); (Senduk et al., 2021); (Lubis et al., 2021); (Permana & Suryana, 2020); (Zulaeha & Sari, 2020); (Ningsih et al., 2019); (Anggraini, 2019) and (Kharisma & Juliarsa, 2017) who stated that personal technical skills can impact the implementation of computerized accounting information systems, but this finding is not in line with research conducted by (Yasa et al., 2020) which confirms that personal technical skills have no impact on the implementation of computerized accounting information systems.

No matter how well the information system is built, if human resources are not included as a user element in the system design process, the system will fail to meet user needs. Therefore, involving more users in the system development process will improve the performance of the accounting information system. Based on this theoretical basis, it is necessary to explain why users of accounting information systems participate, because they provide a simple and useful process for creating reports. Therefore, higher user satisfaction when using the system for accounting will have the impact of higher user satisfaction, which in turn causes more users to use the system. This statement is in line with research conducted by (Witara & Sumadi, 2022); (Permana & Suryana, 2020); (Ningsih et al., 2019); and (Kharisma & Juliarsa, 2017) which suggests that user involvement can impact the implementation of computerized accounting information systems but this finding is not consistent with research conducted by (Yasa et al., 2020); (Zulaeha & Sari, 2020); (Fadly & Munthe, 2020); and (Anggraini, 2019) which states that user participation does not affect the implementation of accounting information systems that use computers.

Accounting expertise also influences how people use accounting information. As Wichman (1984) points out, written by (Lestari & Rustiana, 2019) which states that the inability of company owners to implement accounting causes problems. Many targets are expected to fail due to the lack of accounting skills of BPKAD employees. To ensure the implementation of a computerized accounting system, it is very important to improve the performance of BPKAD employees. When considering the theoretical perspective of the Technology Adoption Model (TAM), a variety of things influence the decision of whether and how to use technology. The theoretical basis for developing an information retrieval system is that this program will be successful. Studies that support this statement include research conducted by (Aditiya, 2022); (Nurkafta, 2022); (Sophian & Wi, 2022); (Kustina & Utami, 2022); (Mustofa & Trisnaningsih, 2021); (Jannaha & Triyanto, 2021) and (Lestari & Rustiana, 2019) which states that accounting expertise can impact the application of computerized accounting information systems, however, this finding is not in accordance with research conducted by (Ermawati & Handayani, 2022) and (Kustina & Utami, 2022) which indicates that accounting skills cannot impact the implementation of computerized accounting information systems.

Greater support for senior managers will result in increased success of the accounting system. This is because manager support in the development and implementation of processes related to the accounting system itself is positively related. The technology acceptance model (TAM) theory, which originates from psychology, is based on the belief that the perspectives, desires, and relationships between a user's behavior and his or her computer work. Theoretical work's aim is to recognize the main factors that influence users' decisions when they adopt technology. (Latifah & Abitama, 2021). Study conducted by (Witara & Sumadi, 2022); (Latifah & Abitama, 2021); (Senduk et al., 2021); (Yasa et al., 2020); (Fadly & Munthe, 2020); (Zulaeha & Sari, 2020) and (Anggraini, 2019) which suggests that the implementation of accounting information systems that use computers can be influenced by senior management support, but the results are contrary to research conducted by (Utami & Ismawati, 2021) which stated that superior assistance had no impact on the implementation of a computerized accounting information system.

The urgency of this research is because BPKAD Samosir Regency still uses a semi-computerized system in recording its finances, so that accountability is often late, due to the inability of employees to process data with the e-financial application system. By using this e-financial system, it is hoped that accountability reports can be carried out correctly time.

## THEORETICAL BASIS

### *Technology Acceptance Model* (TAM)

The aim of the Technology Acceptance Model (TAM) theory is to provide a theoretical basis for planning, evaluating and implementing information technology systems. The way users accept and use technology is described in this model. (Ningrum, 2017). TAM promoted by (Davis, 1989) ON (Vidantika & Putra, 2018) adopted from the Theory of Reasoned Action (TRA), because TRA is the foundation for developing information technology models. that can be adapted for specific information technology systems. Looking at the Technology Acceptance Model (TAM) shows that the decisions of information technology users have a significant influence on how and when they introduce new systems, especially in relation to advantages and ease of use. So it can be concluded that the two related models are able to find reasons for accepting or rejecting an information system.

The following is the initial TAM chart proposed by (Davis, 1989).

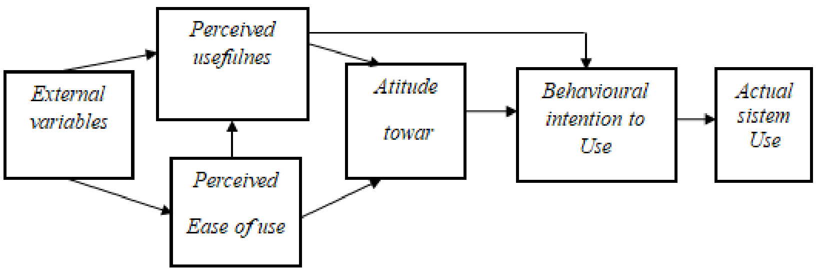


**Figure 1**
***Technology Acceptance Model* (TAM)**

**Human Resources Management**

Human Resources Management involves theories and approaches that guide how an organization manages its workforce. This includes Strategic Human Resource Management, Human Capital Theory, Resource-Based View, Social Exchange Theory, Motivation Theory, and Organizational Behavior Theory. These theories help HR managers align human resource practices with organizational goals, invest in employee development, leverage workforce capabilities for competitive advantage, build positive relationships with employees, understand factors influencing motivation and engagement, and create a positive work environment for increased productivity.

**Implementation of a digital-based accounting information system**

Accounting information system according to (Hall, 2016) is a series of formal steps used to collect data, transform it into information, and convey it to users. The focus of this information system is to improve products and services, management processes, and efficiency. (Jogiyanto, 2017). According to (Al-Hiyari et al., 2013), indicators in determining the achievement of implementation of a computerized accounting system consist of five things, namely:

1. Computerized SIA has clearer features than conventional systems.
   Conventional accounting information systems have simpler techniques. This simplicity is reflected in the frequent occurrence of drafting or supporting documents that are incomplete and do not comply with the generally accepted standards of PSAK.SIA is simpler to use than conventional systems.
2. SIA provides information to ensure the company's database.
   In the conventional application of accounting, there are quite a lot of workers involved in accounting activities, which opens up great opportunities for employment opportunities, but because coordination is difficult for many people, the time for presenting financial reports tends to be longer and more complicated, especially if at any time one or several people who are unable to work for some reason will definitely hinder work because they have to wait first for the presence of the person concerned.
3. Computerized SIA is easier to manage compared to conventional accounting information systems.
   Accounting with a computerized accounting information system will certainly make it easier for companies to access data online
4. Computerized SIA is easy to access.
   In a computerized accounting system that is full of automation, all calculations for financial management are carried out by accounting software quickly and accurately.

**Personal Engineering Skills**

When viewed through the basic words of proficiency, (Stephen, 2015) conveying Ability, namely a person's ability to complete various tasks in the workplace. According to him, the ability of information system users can be measured in three ways, namely:

1. Knowledge
   Knowledge as an information system user can be seen through:
   a. Have knowledge of accounting information systems.
   b. Understand the knowledge of tasks from his work as an information system user.

2. Abilities
   Ability as an information system user can be seen from:
   a. Ability to run existing information systems.
   b. Ability to express information needs.
   c. Ability to express how the system should be.
   d. Ability to carry out work tasks.
   e. Ability to align work with tasks.
3. Skills
   Expertise as an information system user can be seen from:
   a. Expertise in work responsibility.
   b. Skills in expressing needs at work.

**User Engagement**

A series of reasons why user involvement is crucial in the design and development of information systems, as explained by (Latifah & Abitama, 2021) including:

1. User needs
   Users are people within the company. For a system to be implemented, the system must be able to absorb user needs.
2. Knowledge of local conditions
   An understanding of the environment in which the accounting information system will be applied needs to be possessed by the information system designer, and to obtain this knowledge the system designer must ask for help from users who really understand the environment in which they work.
3. Lack of will to change
   Users often feel that the information system they have prepared cannot be used and does not meet their needs. To reduce the reluctance to change, it can be reduced if users are involved in the process of designing and developing information systems.
4. Feeling threatened
   Many users realize that the implementation of computer information systems in organizations may threaten their jobs, or make their capabilities no longer relevant to the organization's needs.
5. Increased democracy
   The meaning of democracy here is that users can be directly involved in making decisions that will impact them.

**Training and Education**

What is usually the aim of training and education programs is the interests of employees, companies and consumers. According to (Latifah & Abitama, 2021) In general, the objectives of the research are:

1. To develop skills that enable effective and efficient completion of tasks;
2. To develop skills that enable rational completion of tasks; And
3. To develop actions that encourage collaboration with colleagues and superiors.

**Accounting Skills**

As stated (Hendrisna, 2015) that accounting expertise is all knowledge about accounting obtained by users of accounting information from informal or formal education. Head of research assistance indicators. Indicators of superior assistance in research (Septianingrum,

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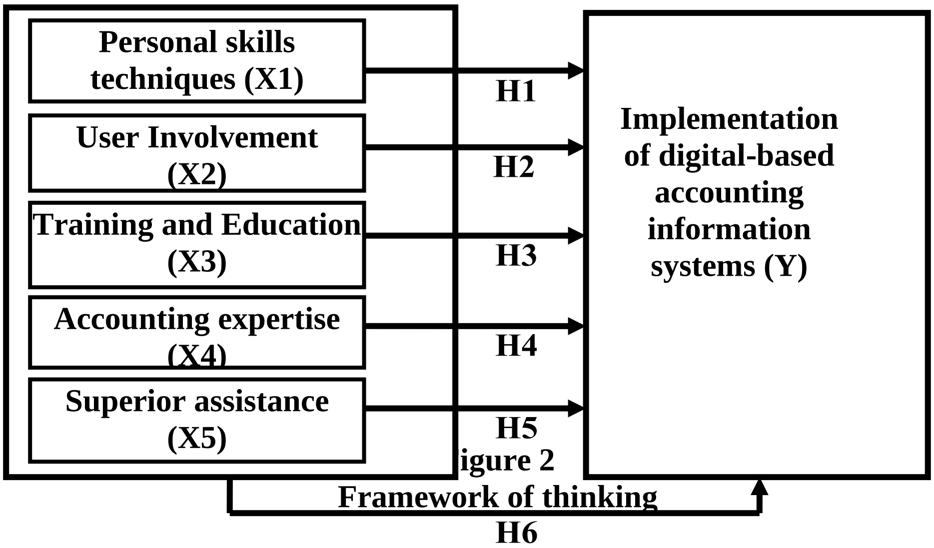
2014) :

1. Management computer skills
   Not only employees must have the ability to operate the existing system, but a leader must also have the ability to use and operate the system.
2. Management's attention to information system performance, and
   A leader must also be able to provide support and encourage employees to work enthusiastically, effectively, efficiently and productively so that optimal work results are obtained.
3. Management expertise in implementing systems in organizations.
   Leaders must also understand what systems exist in the organization they lead. Whether the existing system in the organization is being used well or whether the existing system is experiencing problems or not. A leader must know about this.




**igure 2**
**Framework of thinking**

**Hypothesis Development**

**The impact of personal skills techniques on the implementation of digital-based accounting information systems**

The Theory of Technology Adoption Model (TAM) states that the two main factors that influence a person's decision to adopt and use technology are practical and enjoyable. Findings from Theory indicate that there is a higher level of personal understanding regarding the benefits of using information systems for accounting and there is greater motivation to use such systems. The results of this study indicate that a higher level of personal technical skills when using a similar system correlates with the level of effectiveness in using the system. So, if someone believes they can improve their work performance, then they will use human resource technical abilities in the field of human resource information. On the other hand, if someone believes that the skills of technical staff reporting systems can improve work performance, then he will not use them. If you're not confident, he won't use it. (Mardiana, 2014).

In line with previous research conducted by (Witara & Sumadi, 2022); (Senduk et al., 2021); (Lubis et al., 2021); (Permana & Suryana, 2020); (Zulaeha & Sari, 2020); (Ningsih et al., 2019); (Anggraini, 2019) and (Kharisma & Juliarsa, 2017) who stated that personal technical skills have a positive and significant impact on SIA implementation. From the TAM theory that the researcher put forward, supported by previous research, the researcher drew the following hypothesis:

**H1: Personal technical skills have a positive and significant impact on the implementation of computerized accounting information systems**

**The Impact of User Involvement on the Implementation of a digital-based accounting information system**

The term "user participation" refers to the process in which members of an organization or user group are involved when the system development process is carried out. Based on this theoretical basis, it is necessary to explain why users of accounting information systems participate, because they provide a simple and useful process for creating reports. Therefore, higher user satisfaction when using the system for accounting will have the impact of higher user satisfaction, which in turn causes more users to use the system.

This statement is also in line with research (Witara & Sumadi, 2022); (Permana & Suryana, 2020); (Ningsih et al., 2019); and (Kharisma & Juliarsa, 2017) which suggests that user contributions have a positive and significant impact on SIA implementation. By referring to the TAM theory which has been explained by the researcher and supported by previous research, the researcher draws the following hypothesis:

**H2 : User participation has a positive and significant impact on the implementation of digital-based accounting information systems**

**The Impact of Training and Education on the Implementation of digital-based accounting information systems**

When considering the theoretical perspective of the Technology Adoption Model (TAM), a variety of things influence the decision of whether and how to use technology. The theoretical basis for developing an information retrieval system is that this program will be successful. System users will learn new things and improve their ability to use it. This can improve the performance of the ERP system.

This statement is also in line with a study by (Witara & Sumadi, 2022); (Latifah & Abitama, 2021); (Mustofa & Trisnaningsih, 2021); (Nadhifah et al., 2022); (Lubis et al., 2021); (Efriyenty, 2020); and (Zulaeha & Sari, 2020) which explains that training and education programs have a positive and meaningful influence on the implementation of accounting information systems. From the TAM theory that the researcher put forward and supported by previous research, the researcher drew the following hypothesis:

**H3: Training and education have a positive and significant impact on the implementation of computerized information systems**

**The impact of accounting expertise on the implementation of digital-based accounting information systems**

The theoretical conception of the Technology Adoption Model (TAM) states that two factors that determine a person's decision to accept and use technology are practical and enjoyable. According to the theoretical basis, if the user has sufficient experience in the field of accounting, it will be easier for the user to implement the accounting information system. The ability to understand accounting depends on how many people are interested in studying the subject. For this reason, the use of accounting in work is becoming increasingly important. On the other hand, the number of people who do not have the desire to study Accounting is increasing along with the increasing number of people who are familiar with this field, so the amount of information they use is decreasing. Thus, a high level of competence of accounting users can have a positive impact on the use of accounting information.

This statement is consistent with the findings (Aditiya, 2022); (Nurkafta, 2022); (Sophian & Wi, 2022); (Kustina & Utami, 2022); (Mustofa & Trisnaningsih, 2021); (Jannaha & Triyanto, 2021) and (Lestari & Rustiana, 2019) which states that accounting skills have a positive and significant influence on the application of accounting information systems. Based on the TAM theory explained by the researcher and reinforced by previous research, the researcher formulated the following hypothesis:

**$H_4$ : Accounting skills have a positive impact on the implementation of digital-based accounting information systems**

**The impact of superior assistance on the implementation of digital-based accounting information systems**

The technology acceptance model (TAM) theory, which originates from psychology, is based on the belief that the perspectives, desires, and relationships between a user's behavior and his or her computer work. Theoretical work's aim is to recognize the main factors that influence users' decisions when they adopt technology. If all parties agree with this interpretation, it is easier to accept order in the company's operations. Assistance to superiors, which is directly related to the company's information system, is very important to improve their performance. (Setianingsih, 2012).

Study by (Mardiana, 2014). Social impact assessment would be improved if management received more support in setting up and operating the AIS performance system. Support from higher management in this process has a positive effect. This statement is in accordance with research conducted by (Witara & Sumadi, 2022); (Latifah & Abitama, 2021); (Senduk et al., 2021); (Yasa et al., 2020); (Fadly & Munthe, 2020); (Zulaeha & Sari, 2020) and (Anggraini, 2019) who stated that superior assistance had an impact on the implementation of the accounting information system. From the TAM theory that the researcher put forward and supported by previous research, the researcher drew the following hypothesis:

**$H_5$ : Assistance from superiors has a positive impact on the implementation of computerized information systems**

**$H_6$ : Personal technical proficiency, user participation, training and education, accounting expertise and superior assistance can jointly impact the implementation of a computerized accounting information system.**

## RESEARCH METHODS

### Research Location and Time

This investigation was carried out at the Samosir Regency Regional Financial and Asset Management Agency Office from February to April 2023.

### Population and Sample

Workers at the Samosir Regency Regional Financial and Asset Management Agency are the subjects of this research. In this research, samples were selected based on criteria or considerations. A purposive sampling method was used.

The criteria created by researchers are:

1. Samosir Regency BPKAD employees who are civil servants who have worked for a minimum of two years.
2. Samosir Regency BPKAD employees who are civil servants whose daily lives directly contribute to the implementation of digital-based accounting information systems.

The type of data used in this research is primary data. Primary data is data obtained from the results of questionnaires conducted on employees who implement a computerized accounting information system at BPKAD Samosir Regency.

Research data were analyzed and tested using statistical tests consisting of descriptive statistics, classical assumption testing, multiple linear regression analysis and hypothesis testing with the determination test ($R^2$), simultaneous test (F-test) and partial test (t-test) using software. SPSS (Statistical Product and Service Solutions).

## RESULTS AND DISCUSSION

### Data Collection Results

**Table 1**
**Questionnaire Distribution Return Results**

| Description | Total | Percentage |
|---|---|---|
| Questionnaires distributed | 56 | 100 |
| Returned questionnaire | 52 | 92,86 |
| Unreturned questionnaires | 4 | 7,14 |
| Incomplete questionnaire | 2 | 3,57 |
| Processable questionnaire | 50 | 89,29 |

Source: Data Processing Results by SPSS 26, 2023

Based on table 1, it is known that, of the 56 questionnaires distributed, 52 were returned, while 4 questionnaires were not returned because they were outside the city, while 2 questionnaires did not meet the requirements because their work period was only 1 year.

### Data Quality Test

### Validity Test and Reliability Test

The results of instrument testing for all variables studied obtained valid results due to the values $r_{hitung}$ greater than $r_{tabel}$ with these results all question items can be fulfilled in measuring the variables studied. In the Reliability test, a Cronbach Alpha value was obtained above 70, which indicates that the variables asked to respondents were consistent in answering each question, so that by fulfilling this requirement, further testing can be continued.

### Classic assumption test

**Table 2**
**Classic Assumption Test Results**

| Variable | VIF Multicollinearity | Sig. Heteroscedasticity (Glejser) |
|---|---|---|
| Personal technical abilities | 1.345 | .133 |
| User engagement | 2.404 | .203 |
| Training and Education | 2.178 | .541 |
| Accounting Knowledge | 1.414 | .989 |
| Leadership support | 1.650 | .581 |
| One Sample K-S | .200[c.d] | |

Source: SPSS 26 Data Processing Results, 2023

Based on Table 2, the data shows a normal distribution with a value of 0.200 which is greater than 0.05. In addition, the multicollinearity test shows that the VIF value is below 10 and the Tolerance value for each variable is above 0.1. So, from these results, multicollinearity does not occur and in the heteroscedasticity test, the Sig value is above 0.05, so heteroscedasticity does not occur in the data.

**Multiple Linear Regression Analysis**

**Table 3**
**Results of Multiple Linear Regression Analysis**

| Variable | B | $T_{count}$ | $T_{table}$ | Sig. | Hypothesis |
|---|---|---|---|---|---|
| (Constant) | -10.697 | -4.205 | | .000 | |
| Personal technical abilities | .443 | 3.158 | 2.021 | .003 | H1 is accepted |
| User engagement | .272 | 6.433 | 2.021 | .000 | H2 is accepted |
| Training and Education | -.093 | -1.270 | 2.021 | .211 | H3 is rejected |
| Accounting Knowledge | .081 | 2.774 | 2.021 | .008 | H4 is accepted |
| Leadership support | .120 | 3.318 | 2.021 | .002 | H5 is accepted |
| Uji F | $F_{hitung}$ = 35.287<br>$F_{tabel}$ = 2.427 | | | .000 | H6 is accepted |
| Adjusted $R^2$ | | | 0,778 | | |

Source: SPSS 26 Data Processing Results, 2023

From the table above, the following regression model can be applied to illustrate the relationship between independent and dependent variables:

$$\mathbf{Y= -10.697 + 0.443x1 + 0.272x2 - 0.093x3 + 0.081x4 + 0.120x5 + e}$$

In testing the coefficient of determination, the Adjusted R Square value obtained was 0.778, which means that 0.778 (77.8%) of the independent variables can impact the dependent variable. Meanwhile, in the F Test, an Fcount value of 35.287 was obtained, which exceeds 2.427, and because the sig. value is 0.000 which is lower than 0.05, it can be concluded that the dependent variable. dependents can jointly impact the dependent variable. In the T test, from the table the hypothesis that is accepted is in the variables of personal technical skills, user involvement, accounting skills and superior assistance. This can be seen from the fact that the value $T_{hitung} > T_{tabel}$ and also the sign value is smaller than 0.05, but specifically for the training and education variables the hypothesis is rejected because $T_{hitung} < T_{tabel}$ and the sign value is 0.211 which is greater than 0.05.

**Discussion**

**The Impact of Personal Technical Skills on the Implementation of Digital-based Accounting Information Systems.**

Hypothesis $H_1$ is accepted, indicating that personal technical skills have a positive and significant impact on the implementation of computerized AIS. This indicates that the better the personal technical skills carried out by the Samosir Regency BPKAD employees, the better they will be in implementing digital-based accounting information systems.

From a theoretical perspective, the findings of this research are in line with the TAM Theory because BPKAD employees as agents or regional governments have worked in accordance with personal technical skills, as evidenced by the latest education of BPKAD employees in Samosir Regency, the majority of whom are bachelor's degree graduates (23 people or 46%) and if Judging from the length of work, the majority of more than 13 years and over have worked as many as 25 people (50%), this means that BPKAD employees have personal technical skills in implementing a computerized accounting information system in accordance with the wishes of the principals so that the agents employed must have adequate skills in managing regional finances.

Apart from being in line with the TAM theory, this research is also consistent with the statements provided by research related to SIA, as stated by (Witara & Sumadi, 2022); (Senduk et al., 2021); (Lubis et al., 2021); (Permana & Suryana, 2020); (Zulaeha & Sari, 2020); (Ningsih et al., 2019); (Anggraini, 2019) and (Kharisma & Juliarsa, 2017) which states that personal technical expertise can influence the implementation of computerized accounting information systems, but this view is not in line with the findings of research conducted by (Yasa et al., 2020) which states that personal technical expertise has no impact on the implementation of computerized accounting information systems.

**The Impact of User Involvement on the Implementation of a digital-based accounting information system**

The results of Hypothesis $H_2$ are accepted, meaning that User Participation has a positive and significant impact on the implementation of computerized accounting information systems. The findings of this research state that the more active user participation, the greater the implementation of a computerized accounting information system in BPKAD Samosir Regency.

From a theoretical perspective, the findings of this research are in accordance with the TAM Theory because the agent or local government has involved budget users both from internal government and external sources, including involving the community in carrying out Musrenbang every year, so that the budget prepared by the agent must be appropriate. really needs the principal. The involvement of budget users is highly expected by the principal so that the working agent truly serves the local community in accordance with the agent's promise to the principal.

This statement from the TAM theory is supported by research conducted by research examining the relationship between user involvement and the implementation of digital-based accounting information systems, including those conducted by (Witara & Sumadi, 2022); (Permana & Suryana, 2020); (Ningsih et al., 2019); and (Kharisma & Juliarsa, 2017) which indicates that user participation has a potential impact on the implementation of computerized accounting information systems, but these findings are not consistent with research conducted by (Yasa et al., 2020); (Zulaeha & Sari, 2020); (Fadly & Munthe, 2020); and (Anggraini, 2019) which confirms that user participation has no influence on the implementation of a computerized accounting information system.

**The Impact of Training and Education on the Implementation of digital-based accounting information systems**

The results of Hypothesis $H_3$ are rejected, meaning that training and education do not have a significant effect and significance on the application of computerized accounting information systems. This statement indicates that there is no connection between training and education and the implementation of a computerized accounting information system by BPKAD Samosir employees. The strongest relationship is the existence of accounting education in applying a computerized accounting information system. This is acceptable because employees at BPKAD already have Ages over 38-43 years are 27 people or 54%, so employees tend to use old applications, no longer want to use the newest applications.

In line with previous researchers who conducted research between training and education conducted by (Aditiya, 2022); (Ermawati & Handayani, 2022); (Harris, 2021); (Fadly & Munthe, 2020); (Anggraini, 2019); (Shirlyani et al., 2018) and (Kharisma & Juliarsa, 2017) which revealed that training and education did not influence the implementation of computerized accounting information systems, but these results were not consistent with research conducted by (Witara & Sumadi, 2022); (Latifah & Abitama, 2021); (Mustofa & Trisnaningsih, 2021); (Nadhifah et al., 2022); (Lubis et al., 2021); (Efriyenty, 2020); and (Zulaeha & Sari, 2020) which states that training and education have a potential impact on the implementation of computerized accounting information systems.

**The Impact of Accounting Expertise on the Implementation of a digital-based accounting information system**

The results of Hypothesis $H_4$ are accepted, meaning that accounting skills have a positive impact and have a significant effect on the implementation of computerized accounting information systems. This is supported by data which shows that 30 of the Samosir Regency BPKAD employees have an economic education background, while the remaining 20 people (40%), this indicates that the employees who manage finances in the Samosir Regency regional government have the majority of economic education in particular accounting major.

From a theoretical perspective, the findings of this research are consistent with the TAM Theory because of the involvement of agents or employees of BPKAD Samosir who have been employed by the principal, the majority of whom are Bachelor's degree graduates and have educational backgrounds in accounting economics, so that with this educational background the principal believes that the agents employed have been able to carry out his duties are in managing regional finances in Samosir Regency.

The results of this research are consistent with research conducted by (Aditiya, 2022); (Nurkafta, 2022); (Sophian & Wi, 2022); (Kustina & Utami, 2022); (Mustofa & Trisnaningsih, 2021); (Jannaha & Triyanto, 2021) and (Lestari & Rustiana, 2019) which revealed that accounting expertise influences the application of accounting information systems that use computers, but is not consistent with research conducted by (Ermawati & Handayani, 2022) and (Kustina & Utami, 2022) which states that accounting expertise has no impact and is not significant on the implementation of digital-based accounting information systems.

**The Impact of Superior Assistance on the Implementation of a digital-based accounting information system**

The results of Hypothesis $H_5$ are accepted, meaning that superior assistance has a positive and significant influence on the implementation of computerized accounting information systems. This statement implies that the greater the superior's assistance in applying the latest information technology in financial management, the greater the implementation of computerized accounting information systems.

From a theoretical perspective, the results of this research are consistent with TAM theory because the agents or leaders of BPKAD Samosir have supported the latest information technology in managing the financial management of the Samosir Regency government, so that the preparation of financial reports can be carried out quickly, efficiently and effectively in accordance with the principal's expectations. The findings of this research are in line with the results of research carried out by (Witara & Sumadi, 2022); (Latifah & Abitama, 2021); (Senduk et al., 2021); (Yasa et al., 2020); (Fadly & Munthe, 2020); (Zulaeha & Sari, 2020) and

(Anggraini, 2019) which states that superior assistance can have an impact on the implementation of digital-based accounting information systems, but is not in line with research conducted by (Utami & Ismawati, 2021) which indicates that superior support has no influence on the implementation of digital-based accounting information systems.

**The impact of personal technical skills, user involvement, training and education, accounting expertise and superior assistance on the implementation of digital-based accounting information systems**

The results of Hypothesis $H_6$ are accepted, meaning that Personal Technical Skills, User Involvement, Training and Education, Accounting Expertise and Supervisor Assistance have a joint impact on the application of computerized accounting information systems. This statement concludes that employees and leaders at BPKAD Samosir Regency can implement Personal Technical Skills, User Involvement, Training and Education, Accounting Expertise and Assistance from superiors in regional financial management, thus, the implementation of a computerized accounting information system will be able to run effectively.

The findings from this research are also in accordance with the TAM Theory, where the agent, in this context the regional government (BPKAD), has fulfilled the requirements set by the principal so that the contracted agent can run the regional government in terms of personal technical skills, involvement users, training and education, accounting expertise and superior assistance for the implementation of digital-based accounting information systems.

## CONCLUSIONS AND SUGGESTION

### Conclusion

Through the research findings and discussion in the previous chapter, the conclusion is: Personal technical skills, user involvement, accounting expertise and superior assistance have a positive and significant influence on the implementation of digital-based accounting information systems in BPKAD Samosir Regency, but training and education do not have an influence which is significant for the implementation of the computerized accounting information system at BPKAD Samosir Regency, while in the joint test Personal Technical Skills, User Involvement, Training and Education, Accounting Expertise and Supervisor Assistance have a joint impact on the implementation of the computerized accounting information system at BPKAD Samosir Regency.

### Research Limitations

The limitations contained in the research include: 1) The implementation of a digital-based accounting information system was only examined from the variables of Personal Technical Skills, User Involvement, Training and Education, Accounting Expertise and Supervisor Assistance. 2) Researchers only distributed questionnaires without conducting in-depth interviews about the implementation of computerized accounting information systems. 3) The questionnaire used is a replication of other research. 4) This research uses quantitative primary data and 5) This research was conducted only at BPKAD Samosir.

### Recommendation

Regarding the limitations of this research, the author can provide several suggestions, namely: 1) What has been achieved now should be maintained in the future with the aim of serving the local community in accordance with the duties attached to regional government officials which have been received from the principal, namely the local village community. . Furthermore, it is recommended that regional government officials at BPKAD Samosir increase training and education related to the implementation of accounting information systems that use computers. 2) Adding other variables outside the variables that have been studied such as Good Government Governance, Use of Information Technology, and others. Because in the results of testing the coefficient of determination there is still the impact of other variables. 3) Conduct in-depth interviews regarding the strengths and weaknesses in implementing a computerized accounting information system. 4) Add more references and expand research objects such as all SKPD in Samosir Regency

**Research Implication**

From the research results above, the implications of this research are that with personal technical skills, user involvement, training and education, accounting expertise and assistance from superiors, it will be possible to implement a computerized accounting information system, so that local government financial management can be carried out more efficiently, effectively, timely and transparent.

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# The Capital Adequacy, Asset Quality, Management Quality, Earning Quality, and Liquidity Analysis in Indonesia Banking Sectors

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**ABSTRACT**

*Risks likely to arise and hinder profitability can be measured using the CAMEL analysis conducted in this study. CAMEL and profitability are fundamental aspects that are highlighted to determine the financial performance of bank sectors. It can be said that if the profitability value of a business is good, it reflects good financial performance. Increased profitability is the success of management in managing the risks detected. The specific purpose of this study is to measure each proxy that represents CAMEL analysis on the profitability value conveyed by the average return on equity (ROAA) variable in the banking sector so that bank management can manage risk well and generate high profits. This research was conducted using quantitative methods and secondary data in the form of databases, namely company financial report documents and company annual reports downloaded through the official website of the Indonesia Stock Exchange and processed using Eviews software. Conventional banks listed on the Indonesia Stock Exchange for the period 2020-2022, as many as 41 banks became the sample of this study. The results showed that CAR, NPL, BS, and LDR had a significant effect on banking profitability, while NIM had no significant effect on banking profitability.*

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## INTRODUCTION

A country's economy cannot be separated from the existence of financial institutions; the financial institutions in question are banks. Similar to other countries, Indonesia's economy is strongly influenced by the existence of financial institutions. Banks are financial intermediaries for those who have excess funds and those who need funds (lack of funds). Parties with excess funds are those who have funds in the bank and use them to invest in the bank. Meanwhile, those who need funds to finance business or household needs can utilize bank credit. Today's main drivers of the national economy are consumption, investment, and export and import activities. Consumption and investment activities contribute around 80% to the country's economic growth.

Banks have three main activities: first, collecting public funds through deposits (funding); second, channeling funds to the public in the form of loans (credit); and third, providing other services. Credit distribution is a banking activity that increases bank profits or profitability. Referring to Indonesian banking statistics released by the Financial Services Authority (OJK), the banking industry has earned a net profit of IDR 78.17 trillion as of July 2021, which means that it has grown by 9.68% compared to the 2020 period, which amounted to IDR 71.27 trillion. The growth in banking net profit was contributed by net interest income (NII), which grew 12.98% annually (year on year / yoy) to IDR 245.43 trillion (figure 1).

Profits that continue to increase illustrate that the bank is in good health and the bank's financial performance is in good condition. However, to obtain a high profit value, the bank must be prepared to face several risks that will hinder the increase in profitability. The risks accompanying efforts to increase bank profitability can be analyzed using CAMEL analysis (Capital Adequacy, Asset Quality, Management, Earning, and Liquidity). CAMEL is used as a risk measurement tool to predict financial distress calculations that occur in the past, present, and future so that bank management can manage risk efficiently.

**Figure 1**. Graph of Bank Profit Development 2016-2021


Source. OJK, 2023

According to Munir et al. 2017, CAMEL analysis simultaneously and partially affects banking profitability. The study was conducted by comparing the performance of banks in Indonesia with banks in Malaysia; the ratio used to measure profitability in this study is Return On Investment (ROI). In contrast to Munir et al. 2017, not all proxies representing CAMEL analysis affect banking profitability; Capital Adequacy Ratio (CAR) does not affect Return On Asset (ROA), Non-Performing Loan (NPL) does not affect ROA, Net Interest Margin (NIM) does not affect ROA while Operating Expenses on Operating Income (BOPO) affects ROA, and Loan to Deposit Ratio (LDR) affects ROA. Research by Irfan et al. (2019) shows that CAR, LDR, and NIM simultaneously influence banking ROA. According to Syachreza & Gusliana (2020), CAR, Financing to Deposit Ratio (FDR), and bank size have no effect on ROA in Islamic commercial banks registered with the Financial Services Authority (OJK) for the 2012-2017 period. In line with previous research, according to Henry & Garcinia (2019), CAR, NIM, and LDR simultaneously influence banking ROA. A study conducted by Korri & Baskara (2019) resulted in the finding that CAR and LDR have an influence on ROA, and NPL and BOPO have a significant negative effect on ROA. This research continues the study conducted by Dewi (2022) with several differences. First, the dependent variable used in previous research was Return on Assets (ROA), whereas in this research, the author chose the dependent variable as Return on Average Assets (ROAA). Second, the independent variables used in Dewi's (2022) research consist of three variables, namely Capital Adequacy Ratio (CAR), Net Interest Margin (NIM), Non-Performing Loans (NPL), Operational Expenses on Operating Income (BOPO), Loans to Deposit Ratio (LDR), and Net Open Position (PDN). This research uses CAMEL analysis (Capital Adequacy, Asset Quality, Management, Equity, and Liquidity), each of which is proxied by several ratios, namely as follows: Capital Adequacy (Capital Adequacy Ratio), Asset quality (Non-Performing Loan), Management (Bank size), Earning (Net Interest Margin), and Liquidity (Loan to Deposit Ratio). Third, the year period chosen by previous researchers was 2017-2020, while this research chose 2020-2022. Further research is needed based on the existing research gap, which is expected to produce newer findings.

The formulation of this research problem is, first, whether the CAMEL ratio affects the banking industry's profitability level. Second, whether the proxies representing each aspect of CAMEL jointly affect the profitability value of a bank. The objectives of this study are divided into general objectives and specific objectives. The general objective of this study is to explain the impact of CAMEL analysis (Capital, Asset, Management, Income, Liquidity) on the profitability of the listed banking sector in Indonesia. This research aims to explain the influence of CAMEL (Capital, Asset, Management, Earnings, Liquidity) analysis on the profitability of the banking industry listed on the Indonesia Stock Exchange. This research aims to measure each proxy representing CAMEL analysis of the profitability value proxied by the banking industry's Return on Average Asset (ROAA) variable so that bank management can manage risk well and obtain high profits.

### *Signaling Theory*

Signals are messages from company management that tell investors what to expect in the future. This helps investors decide what to do with their money (Brigham & Ehrhardt, 2005). The signal in question is in the form of information regarding the efforts made by management to realize the owner's wishes. Information functions to provide information, notes, and descriptions of current, past, and future conditions for the continuity of the company and its effects on the company. Signaling theory is closely related to the availability of information; the information giver tries to convey relevant information so that it can be utilized by the recipient of the information, who will adjust his behavior according to his understanding of the signal (Spence, 1973). Signaling theory can explain the measurement of a company's performance; this theory explains how the company should try to provide signals to users of financial reports.

### *Financial Performance*

The achievements of a company in a certain period that reflect the level of health and condition of the company are called the company's financial performance (Sutrisno, 2000). Every company is required to assess its financial performance as a reference to determine the extent of success the company has achieved. The company's financial performance assessment is carried out to determine the level of liquidity, solvency, profitability, and business activity (Munawir, 1990). One effort that can be made to assess a company's financial performance is to carry out financial report analysis. Based on the objectives of financial performance assessment, financial report analysis can be carried out using financial ratio analysis. The financial performance of a bank or company is said to be in good condition when the financial reports presented by the bank show high profit values. According to Munawir (2002), profitability is a company's ability to gain profits in a certain period. In line with Munawir (2002), according to Irawati (2009), the profits obtained by a company can be measured using the profit ratio (profitability ratio), which is used to determine the company's ability to generate profits in a certain period. Return on Average Assets (ROAA) is one of the profitability ratios often used to measure the financial performance of financial institutions. This research raises the issue of measuring the profitability value of financial institutions (conventional banks) using CAMEL analysis. To support this research, the author uses the results of previous studies and is supported by other sources.

Research conducted by Dewi (2022) aims to determine the results of capital, asset, management, profit, liquidity, and sensitivity to market risk ratios as proxied by Return on Assets (ROA) in national private commercial banks in 2017-2020. This research uses quantitative methods with secondary data obtained from bank annual reports. The sampling technique in this research was purposive sampling, where the researcher used twenty-three national private commercial banks with foreign exchange as the research sample. The research results show that only BOPO proxy income, which affects ROA because interest income is low while operational costs are higher. Meanwhile, capital does not affect ROA, which means the banking sector is not yet optimal in utilizing capital in services. Assets proxied by Net

Performing Loans (NPL) do not affect ROA. Furthermore, management has the same results as assets; it does not affect ROA due to adjustments due to the increase in interest rates in the previous year. Liquidity and sensitivity also do not affect Return on Assets (ROA). Mustafa's research results (2020) state that the CAR proxy has a positive and significant influence on bank profitability (ROA), the Operational Expenditure on Operating Income (BOPO) proxy has a negative and insignificant influence on ROA, and Non-Performing Loans (NPL) have a negative influence. and not significant on ROA, while the Net Interest Margin (NIM) proxy has a negative and insignificant effect on ROA. Research conducted by Mustafa (2020) used a sample of seven Islamic commercial banks in 2014-2018. This study was conducted to analyze the comparison of financial performance between conventional banks and Islamic commercial banks. Previous research conducted by Nguyen et al. (2020) produced findings that CAMEL analysis affected the performance of Vietnamese commercial banks as proxied by ROA, ROE, and NIM. This research took 31 Vietnamese commercial banks over six years, from 2013 to 2018, as research samples. This research aims to identify the influence of CAMEL analysis on the financial performance of commercial banks in Vietnam during that period. Research data was taken from secondary data in the form of annual financial reports of Vietnamese commercial banks for 2013-2018. One of the previous studies was carried out by taking a sample from the Bandung People's Credit Bank to analyze the influence of credit as proxied by the loan-to-deposit ratio (LDR) and Non-Performing Loans (NPL). Research sampling was conducted using non-probability sampling techniques and a purposive sampling method so that 24 bank samples were obtained for the 2014-2019 period. Saleh & Winarso's research (2021) produced findings that, after testing, showed that NPL and LDR affected banking profitability (ROA).

***Capital adequacy, Asset quality, Management quality, Earning management (CAMEL)***

The CAMEL approach (Capital adequacy, Asset quality, Management quality, earning quality) is considered one of the relevant tools used to measure banks' performance or financial health. CAMEL was first adopted by the Federal Financial Institution Examination Council on November 13, 1979, and continued by the National Credit Union Administration in October 1987. Munir et al. (2017) stated in their research that CAMEL analysis significantly affects bank profitability. This research was conducted using 114 bank samples from Indonesia and Malaysia. The sample selection technique in this research was purposive sampling. Research conducted by (Munir et al., 2017) used Return on Investment (ROI) as a ratio measuring bank profitability. This is different from the study conducted by Ebrahimi et al. (2017), the study states that capital adequacy (CA), management quality (MQ), and earnings quality (EQ) have a negative and significant effect on bank earnings management, while liquidity (LQ) positive and significant effect on bank earnings management. This research aims to analyze the influence of CAMEL on the profit management of banks listed on the Tehran Stock Exchange in 2010 - 2015. The research sample was taken using a purposive sampling technique of 14 banks listed on the Tehran Stock Exchange in 2010-2015. Furthermore, the study conducted by Syahputra & Saragih (2018) aimed to analyze the health level of PT Bank Artos Indonesia Tbk. for the 2014-2017 period using the CAMEL ratio. The author uses quantitative methods with secondary data sources; the secondary data in question is the 2012-2016 financial reports obtained from the Indonesian Stock Exchange website. PT Bank Artos Indonesia is in unhealthy condition. This happens because bank management has been unable to manage funds efficiently, which is indicated by very large costs incurred, and then there are problem loans at the bank. The author suggests that the management of PT Bank Artos Indonesia Tbk use

CAMEL analysis to measure risk periodically to improve the bank's financial performance (Syahputra & Saragih, 2018).

In Antoun et al. (2018) research, it was found that the quality of assets and income earned by banks was negatively influenced by size, and capital adequacy and liquidity were negatively influenced by size but positively influenced by bank concentration and economic growth. This study was carried out to analyze bank-specific, industry, and macroeconomic factors as determinants of the financial performance of banks in central and eastern Europe. Research data comes from the BankScope database, World Development Indicators, and Financial Structure and Development Dataset. Dahiyat (2020) concluded that only the proxies for management efficiency, earning quality, liquidity, and risk sensitivity had a significant effect on the financial performance of commercial banks. Still, the proxies for capital adequacy and asset quality did not significantly affect commercial banks' performance. Dahiyat (2020) researched by selecting a sample of commercial banks listed on the Amman Stock Exchange for the 2012-2018 period. The data chosen to support this research comes from the annual financial reports of commercial banks listed on the Amman Stock Exchange for the 2012-2018 period. As a result of Dahiyat (2020), researchers recommend using CAMEL analysis to measure the performance of commercial banks and other companies, such as insurance companies in Jordan. Magoma et al. (2022) study analyzes the financial performance of seven commercial banks listed on the Dar es Salaam Stock Exchange (DSE) for five years, from 2016 to 2020. The results of this study state that most commercial banks listed on the DSE during the period were influenced by management efficiency and capital adequacy. CAMEL analysis can measure bank financial performance (Magoma et al., 2022).

### *Capital Adequacy Ratio (CAR) and Return on Average Asset (ROAA)*

Capital Adequacy Ratio (CAR) or capital adequacy ratio is a ratio that shows the bank's ability as a financial institution to provide funds that are used as reserves to anticipate the risk of banking losses. Like companies that make capital the main factor in their business activities, the availability of capital is also very important for banking companies. Referring to signaling theory, the capital adequacy ratio can send signals or signs to shareholders and customers regarding the company's financial condition. The high or low CAR value obtained by a bank can reflect whether the bank's financial condition is healthy. Bank Indonesia (the central bank of Indonesia) has determined that a bank can be healthy if the CAR value reaches 8% and above; 6.4% - 7.9% indicates that the bank received an unhealthy rating. A value below 6.4% indicates the bank's unhealthy financial condition. The higher the CAR value of a bank, the higher the profits obtained by the bank; this is due to the company's ability to cover the risk of losses that could arise. In other words, the smaller the bank's risk, the greater the profitability value obtained by the bank (Mudrajad Kuncoro, 2011). Al Zaidanin (2020) states that sufficient capital will avoid external funding, which ultimately reduces the cost of capital so that the profitability obtained increases. This theory is supported by research by Ebrahimi et al. (2017), who found that the CAR ratio is a capital adequacy ratio that positively affects banking profitability. In line with previous research, Magoma et al. (2022) state that the capital adequacy ratio (CAR) positively affects banking profitability. In contrast to the results of Dewi's research (2022), it was stated that CAR had no positive effect on banking profitability. Based on this description, the authors can develop the following hypothesis:

*$H_1$: Capital Adequacy Ratio (CAR) significantly affects the profitability of conventional banks.*

***Net Performing Loan (NPL) and Return on Average Asset (ROAA)***

One of the banking credit activities is providing funds to customers or borrowers to measure the bank's ability to bear the risk of problem loans, called the Net Performing Loan (NPL) ratio. When a bank obtains a low non-performing credit score, the bank's responsibility will be smaller, which means that a larger ratio indicates that the bank is bad at managing assets (Susanto & Njit, 2018). The NPL ratio is a ratio that displays the comparison between non-performing loans and total credit. According to Mustafa (2020), a high NPL ratio will increase the costs incurred by the bank, causing losses to the bank. The NPL ratio set by Bank Indonesia is 5%. Bank Indonesia requires banks to assess asset quality and determine credit quality into five categories: current, under special research, substandard, and doubtful or non-performing (Eng, 2013). Saleh & Winarso's (2021) research results state that NPL positively affects banking profitability. In contrast to previous research, Dewi (2022) stated that there is no relationship between NPL and banking profitability. This raises the hypothesis of the author, which is as follows:

*$H_2$: Net Performing Loan (NPL) significantly affects the profitability of conventional banks.*

***Bank Size and Return on Average Asset (ROAA)***

The relationship between bank size and banking profitability is related to the influence of the world economic scale, which tends to be dominated by large banks. In general, the larger the bank size, the greater the profits obtained. Bank size is measured as the logarithm of the asset value in US dollars (Adusei, 2015). In line with signaling theory, increasing banking profitability, which is influenced by bank size, is a positive signal for users of financial information to make decisions. The view that bank size influences the value of banking profitability is supported by the results of research by Ali & Puah (2018), which states that bank size positively influences the profitability of banks in Pakistan. However, Syachreza & Gusliana (2020) have a different opinion; their findings are that bank size does not affect bank profitability because Sharia commercial banks' total asset growth is still below standard. Based on this explanation, the authors develop the following hypothesis:

*$H_3$: Bank Size significantly affects the profitability of conventional banks.*

***Net Interest Margin (NIM) and Return on Average Asset (ROAA)***

Universally, Net Interest Margin (NIM) is the difference between interest income and interest costs. In other words, NIM can show bank profits originating from credit or lending activities (Ariyanto, 2011). Other factors influence the NIM value of a bank; if demand for credit is greater than deposits, then the NIM value increases because the bank pays less interest than the interest received by the bank, so it can be said that an increase in the NIM value affects the value of banking profitability (Puspitasari et al. al., 2021). The statement above shows the application of signal theory; increasing the NIM value can influence the profitability value, providing a positive signal or signs to parties who need this information (investors or customers). This theory is supported by research results from Wildan Farhat Pinasti (2018) and Hidayat (2022), which state that Net Interest Margin (NIM) has a positive and significant influence on banking profitability. This requires companies to maintain the NIM ratio positively, thus attracting investors. In contrast to previous research, Dewi (2022) stated in her research that NIM does not affect banking profitability. This research also explained that the high and low NIM values obtained by banks were caused by movements in bank interest rates in the previous period. Based on the explanation above, the author raises the following hypothesis:

*$H_4$: Net Interest Margin (NIM) has a significant effect on the profitability of conventional banks*

***Loan to Deposit Ratio (LDR) and Return on Average Asset (ROAA)***

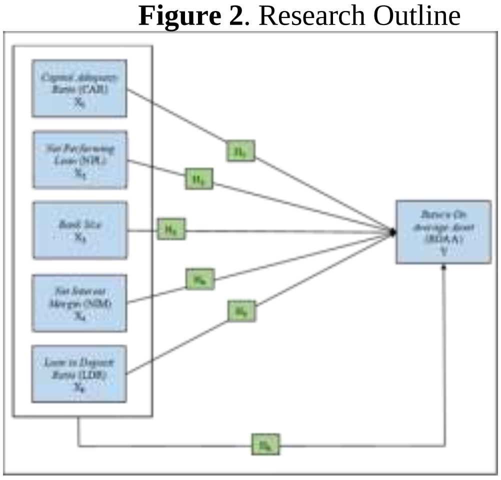
Referring to signaling theory, a positive signal or response can arise if the company can provide positive information to investors regarding its ability to fulfill its short-term obligations (Dewi, 2022). Loan Deposit Ratio (LDR) is used to measure the amount of credit provided by banks compared to the amount of capital used. The government has set the LDR amount at 110% (Kasmir, 2018). A bank's liquidity level can be measured using the Loan to Deposit Ratio (LDR). The higher the LDR value, the more illiquid a bank is, which means it has been unable to fulfill its short-term obligations. On the other hand, the lower the LDR value, the more liquid a bank is, but the more liquid a bank is, it indicates a lot of idle funds. Therefore, good bank management is conservative (Agustina & Wijaya, 2013). Supporting the statement above, research results from Hidayat (2022) and Ikmal (2018) state that LDR positively affects banking profitability. This happens because a high LDR value means more funds are channeled to third parties, thereby increasing bank income. Contrary to previous research, Dewi (2022) stated that LDR has no effect on banking profitability, so banks cannot use liquidity to assess bank health. Based on the existing exposure, the authors can determine the hypothesis as follows:
*$H_5$: Loan Deposit Ratio (LDR) significantly affects the profitability of conventional banks.*

***CAR, NPL, Bank Size, NIM, LDR, and Return on Average Asset (ROAA)***

According to previous research conducted by Munir et al. 2017, CAMEL analysis simultaneously affects banking profitability. The study was conducted by comparing the performance of banks in Indonesia with banks in Malaysia; the ratio used to measure profitability in this study is Return on Investment (ROI). Thus, researchers developed the following hypothesis:
*$H_6$: CAR, NPL, Bank Size, NIM, and LDR simultaneously have a significant effect on the profitability of conventional banks.*

The outline of the conceptual framework of this research can be described as follows:

**Figure 2**. Research Outline



Source: Researcher, 2023

## RESEARCH METHODS

This research used quantitative methods to examine the influence between several independent variables and the dependent variable. Quantitative methods are carried out by analyzing descriptive statistics, the results of data classification processing, to explain the characteristics of the variables studied. Secondary data is used in the form of databases, namely company financial report documents and company annual reports downloaded through the official website of the Indonesia Stock Exchange (IDX). The type of data used is ratio data, namely the ratio of annual financial statements of conventional banks during 2020-222 listed on the IDX. The secondary data collected is processed using the Microsoft Excel application, and for hypothesis testing, the EViews version 12 software is used. Conventional banks listed on the Indonesia Stock Exchange (IDX) for the period 2020-2022, as many as 41 banks became the sample of this study. The number of samples in this study is based on criteria that researchers determined, namely conventional banks listed on the Indonesia Stock Exchange during 2020-2022 and still consistently publishing financial reports during this study period. The sampling method used in this research is non-probability sampling, with a purposive sampling technique, where the researcher sets specific criteria or characteristics that must be met by the research sample so that it is under the research objectives and is expected to answer research problems. The following criteria are taken into consideration for the withdrawal of this research sample, namely as follows:

**Table 1.** Research Sample

| No. | Criteria | Quantity |
|---|---|---|
| 1. | Banking sector companies listed on the Indonesian Stock Exchange (IDX) | 46 |
| 2. | Syaria Banks (non conventional) bank 2020-2022 | (4) |
| 3. | Newly listed banks in 2020 | (1) |
| | Number of companies sampled | 41 |
| | Observation data for 2020-2022 | 123 |

Source: Processed Data, 2023.

The dependent variable used in this study is the profitability ratio Return on Average Asset (ROAA). ROAA is a measurement tool commonly used by banking companies to measure performance. The best ratio to measure the value of bank profitability is ROAA because commercial banks with a high leverage ratio tend to report higher ROAA. To measure the value of ROAA, the following formula can be used:

ROAA = (Net Income/ Average Total Assets) ………..…………………………………… (1)

In addition to the dependent variable, this research is supported by variables that affect the dependent or independent variables. The independent variables in this study are summarized into CAMEL assessment aspects, each indicator of which is proxied by several financial ratios, namely CAR ($X_1$), NPL ($X_2$), Bank Size ($X_3$), NIM ($X_4$), and LDR ($X_5$). Indonesia's minimum CAR value standard is regulated in Bank Indonesia Regulation Number 10/15/PBI/2008, which states that the minimum CAR value banks in Indonesia must obtain is 8%. Based on Bank Indonesia Circular Letter Number 3/30 / DPNP dated December 14, 2001, CAR can be calculated using the following formula:

CAR = (Equity/ Aggregated risk-weighted assets for credit risk) ......................................... (2)

Commercial Bank Health states that the banking NPL ratio is 5%; the smaller the NPL percentage generated, the bank will get a stable profit. The NPL value of the bank can be calculated using the following formula:
NPL = (Value or number of loans/ Total portfolio) ………..…………………………...…. (3)
Management is the third indicator in measuring bank performance or health, proxied by bank size. Total assets, total sales, total profit, tax burden, and others can assess the size of a company. Similar to banks, the size of a bank can be assessed by the total assets owned by the bank. Therefore, the formula that can be used to assess bank size is as follows:
Bank Size = LN (Total Assets) ………………………………………………………… (4)

Earning indicators are proxied by Net Interest Margin in this study; if the NIM value obtained by a bank is high, the profitability value of a bank will also increase. This happens because the increase in net interest income, the difference between total interest expense and total interest income, increases profit before tax.
NIM = (Investment Income-Interest Expenses)/ Average Earning Assets ………………….. (5)

One of the ratios that can proxy liquidity indicators is the Loan Deposit Ratio (LDR) ratio; LDR is a ratio that describes the entire amount of credit provided to third-party funds. Bank Indonesia Circular Letter Number 13/24/DPBP/2011 states that the LDR value that reflects a bank in a healthy condition is 78%-100%. The formula that can be used to calculate the LDR ratio is as follows:
LDR = (Bank's total amount of loans/ total amount of deposits) ………………………….... (6)

## RESULTS AND DISCUSSION

Descriptive statistics are one of the data analysis techniques often used by researchers. Descriptive statistics are data analysis techniques that use the distribution's minimum, maximum, average (mean), standard deviation, sum, range, kurtosis, and skewness. From the Eviews's output (table 2), the ROAA variable obtained an average value of -2.767477, a maximum value of 4.684861, and a minimum value of -7.202089. The CAR variable obtained an average value of -1.172286, a maximum value of 1.043381, and a minimum value of -2.195526. The NPL variable gets an average value of -4.486656, a maximum value of -0.314711, and a minimum value of -7.824046. The BS variable with 123 data has an average value of 2.997322, a maximum value of 3.48187, and a minimum value of 2.680664. The NIM variable obtained an average value of -3.252518, a maximum value of -0.239654, and a minimum value of - 6.119298. The LDR variable with 123 data obtained an average value of -0.23259, a maximum value of 1.266948, and a minimum value of -2.091514. Based on the test results, the regression model is obtained as follows:
$$ROAA = 2.624833 + 0.06169X_1 – 0.221742\ X_2 – 2.42440\ X_3 – 0.356331\ X_4 + 0.890452\ X_5 \quad (7)$$

**Table 2.** Descriptive Statistics

| Variable | N | Mean | Maks. | Min. |
|---|---|---|---|---|
| ROAA | 123 | -2.767477 | 4.684861 | -7.202089 |
| CAR | 123 | -1.172286 | 1.043381 | -2.195526 |
| NPL | 123 | -4.486656 | -0.314711 | -7.824046 |
| BS | 123 | 2.997322 | 3.48187 | 2.680664 |
| NIM | 123 | -3.252518 | -0.239654 | -6.119298 |
| LDR | 123 | -0.23259 | 1.266948 | -2.091514 |

Source: Processed Data (2023).

Chow Model Test and Hausman Test To determine the best model for estimating panel data, we conducted a chow test. Based on the Chow test results (table 3), the probability value of cross-section F is 0.000, which means s <0.05, indicating that the appropriate model used to estimate panel data is the Fixed Effect Model (FEM). In addition to the Chow test, researchers conducted a Hausman test (table 3) which showed that the probability value <0.05, so the suitable model to estimate panel data is FEM.

**Table 3.** Model Test Output

| Effects Test | Statistic | d.f | Prob. |
|---|---|---|---|
| Cross-section F | 19.263198 | -40.77 | 0.0000 |
| Cross-section Chi-square | 295.017759 | 40 | 0.0000 |

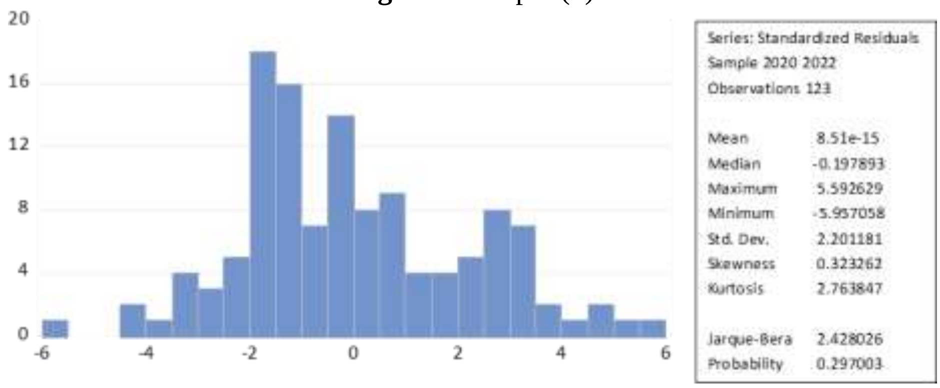
| Test Summary | Chi-Sq Statistic | Chi-Sq.d.f | Prob. |
|---|---|---|---|
| Cross-section Random | 16.390124 | 5 | 0.0058 |

Source: Processed Data (2023).

Classical Assumption Test

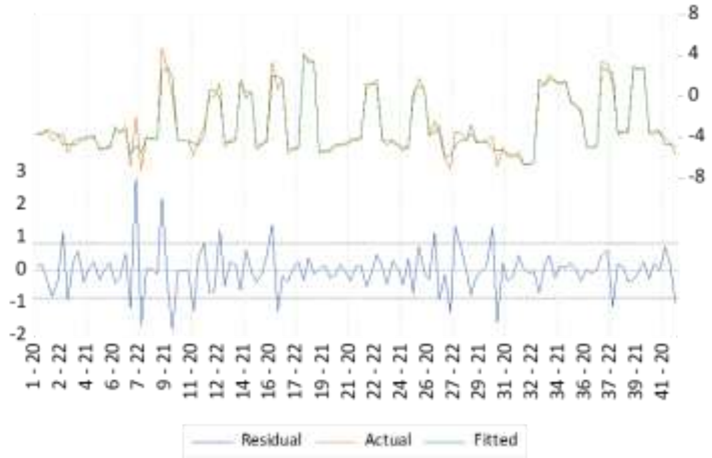
In the Eviews software, normality testing looks at the Jarque-Bera value, where the probability value> 0.05 indicates that the data is typically distributed. So, based on the graph output (figure 3), it can be concluded that the research data is typically distributed. As depicted in the graph output (figure 4), there is no regular pattern between the two, indicating no heteroscedasticity. Based on the results of the data processing output (table 4), it appears that the DW value is 1.326080, which indicates that there is no autocorrelation because the autocorrelation test can be known by determining the Durbin Watson (DW) value, where if the DW value is between -2 to +2, there is no autocorrelation. Based on the results of processing output, it can be concluded that there is no multicollinearity. If the correlation coefficient of each independent variable> 0.8, then multicollinearity occurs; otherwise, if <0.8, there is no multicollinearity.

**Figure 3**. Output (1)




Source: Processed Data (2023).

**Figure 4**. Output (2)




Source: Processed Data (2023).

**Table 4.** Output

| Test Summary | Chi-Sq Statistic |
|---|---|
| R-squared | 0.95135 |
| Prob (F-statistic) | 0.00000 |
| Durbin-Watson stat | 1.32608 |

Source: Processed Data (2023).

Hypothesis Test

**Table 5**. Hypothesis Test

| Variable | Coefficient | T-statistic | Prob | Result |
|---|---|---|---|---|
| C | 2.624833 | 0.708806 | 0.0506 | |
| CAR | 0.061694 | 0.175078 | 0.0015 | Accepted |
| NPL | -0.221742 | -1.83228 | 0.0198 | Accepted |
| BS | -2.4244 | -2.04568 | 0.0442 | Accepted |
| NIM | -0.356331 | -1.426252 | 0.1578 | Rejected |
| LDR | 0.890452 | 1.84532 | 0.0036 | Accepted |
| Test Summary | Chi-Sq Statistics | | | |
| R-squared | 0.95135 | | | |
| Prob (F-statistic) | 0.00000 | | | |
| Durbin Watson stat | 1.32608 | | | |

Source: Processed Data (2023).

Based on the test results above (table 5), it appears that the CAR, NPL, BS, and LDR variables obtained prob values <0.05, and then the variable has a significant effect on ROAA. The NIM variable obtains a prob value> 0.05, which indicates that the variable has no significant effect on the ROAA variable. Based on the test results above illustrate that the prob F-static value is 0.00000 <0.05, which indicates that the independent variables have a significant effect on the dependent variable. The coefficient of determination test is a test to determine how much influence all independent variables have on the dependent variable. Based on the test results above, the R-Square value is 0.951346, meaning that the variation of all independent variables can affect the dependent variable (ROAA) by 95.13%. In contrast, other variables outside the study influence the rest.

## Discussions

*Capital Adequacy Ratio (CAR) significantly affects the profitability of conventional banks.*

Based on hypothesis testing, the CAR variable significantly affects conventional banking ROAA. This supports the statement by Mudrajad Kuncoro (2011) that the higher the CAR value of a bank, the higher the profit obtained by the bank; this is due to the company's ability to cover the risk of loss that can arise, in other words, the smaller the risk of a bank, the greater the profitability value obtained by the bank. Referring to signaling theory, the capital adequacy ratio can send signals to shareholders and customers regarding the company's current financial condition. The relationship between CAR and ROAA is complex and can be nuanced depending on the specific context. While there is some evidence to suggest that a higher CAR can have a positive impact on ROA, it’s essential to consider several factors before drawing a definitive conclusion. Positive effects of higher CAR include a) increased bank stability. A higher CAR indicates a bank has more capital to absorb losses, which can boost investor confidence and potentially lead to lower borrowing costs. This can translate to higher profitability; b) reduced risk-taking. Banks with higher CAR may be less inclined to engage in risky activities, which can further reduce potential losses and improve ROAA, and c) the signaling effect. A good CAR can signal a bank’s sound financial health, attracting more customers and deposits, potentially leading to higher ROAA. Therefore, it’s essential to consider the specific context and other relevant factors before concluding whether a higher CAR will significantly affect ROAA. Some studies have found positive correlations, while others have no significant or negative effect. Here are some additional points to consider: a) the optimal level of CAR. There is no one-size-fits-all optimal level of CAR, as it can vary depending on a bank’s risk profile, business model, and regulatory environment, and b) the impact of other factors. ROAA is influenced by factors beyond CAR, such as operating efficiency, asset quality, and interest rates. The high and low CAR values obtained by a bank can reflect whether or not the bank's financial condition is healthy; Bank Indonesia has determined that a bank can be said to be healthy if the CAR value obtained reaches 8% and above, for a value of 6.4% - 7.9% indicates that the bank has a less healthy predicate. A value below 6.4% indicates an unhealthy bank's financial condition. This theory is supported by research by Ebrahimi et al. (2017); the CAR ratio is one of the capital adequacy ratios that positively affect banking profitability.

*Net Performing Loan (NPL) significantly affects the profitability of conventional banks.*

In the t-test, the NPL variable obtained a probability value of 0.0198, indicating that NPL has a significant and negative impact on ROAA. This happens because the NPL ratio of the conventional banks in the sample does not exceed the limit set by Bank Indonesia, which is 5%. This refers to the statement by Mustafa (2020); according to Mustafa (2020), a high NPL ratio will increase the costs incurred by the bank, causing losses to the bank. So, it can be said that the greater the NPL value, the greater the risk of credit failure, which has the potential to reduce interest income and reduce profits. The high NPL value will lower the ROAA value due to the loss of bank opportunities to earn profits. Some reasons why NPL negatively impacts ROAA: a) reduced interest income. NPSs are loans where borrowers are not making their scheduled payments. This means the bank loses the interest income it would have earned on those loans. This directly reduces the bank’s profitability, reflected in its ROAA; b) increased provisioning costs. When a loan is unlikely to be repaid, the bank must set aside money to cover the potential loss. This is called provisioning. Higher NPL leads to higher provisioning costs, further squeezing the bank’s profitability and lowering ROAA; c) reputational damage. High NPLs can damage a bank’s reputation, making it less attractive to investors and customers. This can lead to lower deposit levels and higher borrowing costs, negatively impacting ROAA, and

d) reduced efficiency. Managing NPLs is time-consuming and expensive. Banks must devote resources to collection efforts, legal proceedings, and loan restructuring, which takes away from their ability to focus on profitable activities. This can lead to lower overall efficiency and a decrease in ROAA. The adverse effects of NPLs on a bank's profitability outweigh any potential benefits.

*Bank Size significantly affects the profitability of conventional banks.*

Bank size is an independent variable tested in this study; after conducting a t-test, the result shows that the probability value of the variable is 0.0442, which indicates that BS has a significant effect on ROAA. The view that bank size affects the value of banking profitability is supported by the study by Ali & Puah (2018), which states that bank size positively affects the profitability of banks in Pakistan. In line with signaling theory, the increase in banking profitability influenced by bank size is a positive signal for users of financial information to make decisions. The relationship between bank size and ROAA is complex and nuanced, with no definitive, universally applicable answer. The potential effects of bank size on ROAA can be positive and negative, and various factors influence the nature and strength of this relationship. Positive effects of more prominent bank size factors: a) economies of scale. Larger banks can generate cost efficiencies through economies of scale. They can benefit from bulk purchasing, centralized operations, and more efficient technology investments, allowing them to operate at a lower cost per unit. This can potentially lead to higher profitability and ROAA; b) diversification. Larger banks can diversify their operations and income streams across different markets, products, and geographies. This diversification can help mitigate risk and stabilize earnings, potentially leading to more consistent and higher ROAA; c) resource access. Larger banks often have better access to financial resources, including deposits and capital, which can provide them with greater lending capacity and allow them to pursue profitable opportunities that may not be available to smaller banks. This can potentially boost ROAA; d) market power. Larger banks may have greater market power and pricing flexibility, allowing them to negotiate better terms with borrowers and depositors. This can lead to higher margins and improve ROAA; e) the banking environment, such as the competitive landscape, economic conditions, and regulatory framework; and f) the bank's business model. Banks with different business models (for example, retail banking versus investment banking) may experience different effects of size on ROAA and g) management quality. A bank's management team's competence and strategic vision are crucial in determining how effectively they can leverage or mitigate the challenges and opportunities associated with size, ultimately impacting ROAA.

*Net Interest Margin (NIM) has a significant effect on the profitability of conventional banks.*

Furthermore, the NIM variable is the fourth independent variable tested in this study. Universally, Net Interest Margin (NIM) is the difference between interest income and interest expense. in other words, NIM can show the bank's profit from credit or lending activities. After hypothesis testing, the NIM variable is known to have no significant effect on ROAA; this happens because the NIM obtained by banks is caused by the movement of bank interest rates in the previous period. Some factors that could be reasons why NIM has no significant impact on ROAA are a) NIM volatility. While a consistently high NIM is desirable, excessive volatility can lead to instability and difficulty predicting future earnings, potentially impacting ROAA negatively or without significant impact; b) different NIM levels in different contexts. Banks operating in different markets or with different business models may have naturally lower or higher NIMs, and c) other factors contribute to ROAA. NIM is not the only factor influencing ROAA. Operating expenses, asset quality, non-interest income, and risk management practices also play significant roles. A high NIM alone may not guarantee a high ROA if other factors are not managed effectively.

*Loan Deposit Ratio (LDR) significantly affects the profitability of conventional banks.*

The fifth independent variable tested in this study is LDR. The results show that the LDR variable significantly affects ROAA. This happens because the high value of LDR means that the higher the value of funds channeled to third parties, the higher the bank income. Loan Deposit Ratio (LDR) measures the amount of credit a bank provides compared to the amount of capital used; the government has set the amount of LDR at 110%. A bank's liquidity level can be measured using the Loan Deposit Ratio (LDR); the higher the LDR value, the more illiquid a bank is, which means it cannot fulfill its short-term obligations. Conversely, the lower the LDR value, the more liquid a bank is, but the more liquid a bank indicates that there are many idle funds. Some factors could be why LDR significantly impacts ROAA: a) increased income. Banks that lend out a significant portion of their deposits generate more interest income on those loans. This can directly contribute to their profitability and potentially boost ROAA; b) signaling effect. A well-managed high LDR can be seen as a signal of a bank’s confidence in its creditworthiness and its ability to manage risk. This can attract more deposits and customers, further increasing profitability and ROAA; c) efficient utilization of resources. A higher LDR indicates that the bank effectively puts its deposits to work by generating returns through loans. Efficient resource utilization and potentially higher ROAA; d) asset quality. The quality of the loans issued under a higher LDR is crucial. Loans to creditworthy borrowers with lower risk of default are less likely to impact ROAA compared to loans to high-risk borrowers negatively; e) economic environtment. Higher LDRs might be more sustainable during periods of economic growth due to lower default risks. Conversely, lower LDRs might be preferred in recessions to mitigate risk and protect ROAA; and f) the bank’s business model. Different bank models have different optimal LDR ranges based on risk profiles and income generation strategies.

*CAR, NPL, Bank Size, NIM, and LDR simultaneously have a significant effect on the profitability of conventional banks.*

This study uses CAMEL analysis with five financial metrics representing each aspect. Therefore, a simultaneous test is conducted to determine whether the independent variables representing CAMEL aspects simultaneously significantly affect ROAA. Based on the results of the F-Test or Simultaneous Test, it is known that the CAMEL analysis sent simultaneously by the five financial indicators has a significant effect on ROAA. All those independent variables do indeed have a significant and simultaneous effect on the ROAA of a bank. Their combined influence on ROAA is complex and multifaceted, with positive and negative interactions possible. Here’s a summary of the individual effects and their potential interactions: a) CAR. Higher CAR implies better risk absorption capacity, potentially leading to lower provisioning costs and higher profitability (positive effect); b) NPL. High NPLs can amplify the adverse effects of low CAR and vice versa. Higher NPL translates to lower interest income and increased provisioning costs, directly impacting ROAA negatively; c) bank size. Bureaucracy and inefficiencies in large banks can erode profitability and reduce ROA (negative effect); d) NIM. High NIM can mitigate adverse effects of other factors like high NPLs or low CAR; e) LDR. Higher LDR indicates efficient utilization of deposits, generating more loan income and potentially boosting ROAA. Interactions between those independent variables create a complex web of influences on ROAA; for example, a high CAR can mitigate the negative impact of high NPLs on ROAA; a high NIM can compensate for the reduced profitability from a low LDR, or bank size can amplify both positive and negative effects of other variables depending on its management effectiveness. Therefore, analyzing the impact of these variables on ROAA requires a holistic approach considering their individual and combined effects within the specific context of the bank and its operating environment. Statistical models and empirical analysis are often used to quantify these relationships and assess the relative importance of each independent in influencing ROAA.

## CONCLUSIONS AND SUGGESTION

This study was conducted to explain the effect of CAMEL analysis on the profitability of the conventional banking industry listed on the Indonesia Stock Exchange in 2020-2022. Not only that, this research is expected to be used to see what financial aspects banks need to pay attention to in increasing profitability. After testing, it can be concluded that CAMEL analysis is helpful for potential banking investors or other stakeholders because, with this analysis, the risks that banks may face in increasing profits will be seen. So that bank management can anticipate these risks. Suggestions for potential investors who will invest in conventional banking sector companies include considering financial ratios that significantly affect the company's profitability. For further researchers, it is recommended to conduct further research on other financial ratios and increase the research period to be used so that it is expected to obtain even better results.

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# Exploration of Social Accounting Disclosures: A Bibliometric Analysis Perspective

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**ABSTRACT**

*This study reviews the literature related to social accounting disclosures with the aim of mapping the research that has been done, providing insight into research trends, providing an overview of research themes, identifying the most cited authors and journals, evaluating the most active affiliations and countries in discussing social accounting reporting disclosures, and providing a basis for future research directions. Data analysis was conducted using bibliometric methods by collecting data from 188 articles contained in journals indexed in the Scopus database. RStudio was used as software to analyze the data and break down research trends by author, journal, affiliation, country, and keywords, providing insights into future research opportunities. The review showed an increase in publications since 2003, with Khaled Hussainey and Mathias Laine as the most active authors and Khaled Hussainey as the most impactful author. The most relevant journal in this context is Accounting, Auditing, and Accountability. The University of Naples Parthenope is the most relevant affiliation regarding publications in this field. In addition, the UK plays a leading role in this literature both in terms of the number of published works and the most cited ones. The most relevant keywords are corporate social responsibility, sustainability, and sustainable development. The implications of this study are significant for researchers interested in social accounting disclosures. The study provides a comprehensive overview of the research that has been done in this field, identifying research trends, themes, and the most cited authors and journals. This information can be used to guide future research directions and to identify areas where further research is needed.*

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## INTRODUCTION

Social and environmental reporting is now standardized on a company-wide basis, and the publication of sustainability reports is considered a common business practice in multinational companies (Fifka, 2012). Although the trend toward standardization of reporting is visible, there are still similarities in concepts regarding the nature and content of social and environmental reporting, making it difficult to distinguish between them. Changes in business reporting practices over time and changes in terminology can add to the complexity.

A few years ago, debates on social and environmental issues continued globally at the United Nations (UN, 2016). Attention to social and environmental issues has undergone a shift from simply providing information about jobs and value-added to the need to convey environmental or social-related information (Jizi et al., 2016). Conceptually, social accounting is included in Social and Environmental Accounting (SEA). Social and environmental accounting (SEA) implicitly contributes to companies' sustainability capabilities on the global stage, now and in the future. Thus, social issues are starting to be included in the sustainable development agenda, which has led most companies to adopt the integration and dissemination of sustainability practices in their strategies. The company integrates a sustainability strategy based on the triple bottom line (economic, social, and environmental) to overcome social challenges and encourage sustainable development. Companies incorporate environmental and social management strategies into their accounting systems and increase transparency (Rodrigues et al., 2021).

In the early 1990s, social accounting began to emerge. This raised significant concerns in the public (government) and private (business) sectors with global social and environmental impacts. Several proposals have emerged for social accounting to be integrated into the accounting and management systems of companies and other organizations. Furthermore, the attitude of companies towards disclosing this type of non-financial information may be related to organizational culture and type of activities, as well as existing laws and regulations, which may be due to the disclosure of social sustainability reports (Rodrigues & Mendes, 2018).

In response, not many companies have developed environmental management and accounting systems and attempted social and environmental reporting (Larrinaga-Gonza Âlez et al., 2001). Therefore, it will lead to an increase in research based on the analysis of information disclosed by companies. This need for companies to discuss social issues with stakeholders leads to the development of new corporate structures and an increase in the number of companies that begin to disclose this information. These reports contain both quantitative and qualitative information (Thomson & Bebbington, 2005).

Based on discussions about social and environmental accounting with stakeholders. Companies are rethinking how they communicate social and environmental challenges. Ramanathan (1976) defines “social accounting” as attempting to provide relevant information about business aims, economic and financial performance, policies, and social contributions and advocating this through reports that observe the link of costs and benefits, summarizing, prioritizing, mitigating information asymmetry between users(Rodrigues et al., 2021).

According toFifka (2012), the development of social and environmental reporting (SER) has changed throughout time and between regions. In Asia, Southern and Eastern Europe, Africa, and Latin America, SER research is a relatively young phenomenon. According to Al-Hawatmah & Shaban (2018), around 36% of Jordanian companies employ corporate social responsibility reports, with another 14% include related information in their financial reports to demonstrate their commitment to social responsibility. With the various types of reporting procedures employed, the Jordan Securities Commission is expected to ensure that social accounting reports are disclosed consistently. It is also critical to establish clear channels for such disclosure so that information about social responsibility may be successfully communicated to all parties involved.

It should be noted that over the past few years, a number of studies have been conducted in the field of social and environmental accounting (Gibbon & Dey, 2011). However, to date and to the best of our knowledge, the focus of this research has mostly been placed on environmental issues or theoretical development (Deegan, 2017). In the context of social accounting and corporate social responsibility reporting, it is important to remember that the operations of industrial companies have a significant impact on the surrounding communities. Therefore, these companies have an obligation to protect and be responsible for the environment and the communities in which they operate (Retolaza & San-Jose, 2021).

Based on these problems, the author is interested in conducting an in-depth discussion of how the disclosure of social accounting reporting. This research discusses all articles to date (not limited by the time period) so that it more broadly discusses the topic of disclosure of social accounting reporting. The importance of companies in disclosing social aspects in the context of social accounting, several research questions are formulated as follows:

RQ1. What are the research trends of social accounting reporting disclosures related to the author's name and the most cited journals, affiliations, countries that discuss social accounting reporting disclosures, and the most used keywords?

RQ2. What are the potential under-researched research topics related to social accounting reporting disclosures for future research?
This research is divided into the following sections. The first section is the introduction, followed by the research method, followed by the results and discussion section. The last section of this study is the conclusion and suggestions.

## RESEARCH METHODS

In preparing the research methods section, we followed the following steps: (i) formulating the research definition, (ii) selecting relevant databases, (iii) identifying appropriate keywords and terms, (iv) selecting words consistent with the articles, and (v) extracting and evaluating data (Tranfield et al., 2003). As a first step, we defined two research questions, as discussed in Section 1. Then, to analyze through search engines, we relied on the Scopus database, which is globally recognized and features high-quality articles from leading publishers (Ochoa et al., 2019). The online search process using the Sqopus database was conducted on January 29, 2024, with specific keywords selected, including ( TITLE-ABS-KEY ( disclosure ) AND TITLE-ABS-KEY ( social ) AND TITLE-ABS-KEY ( accounting ) ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-TO ( SUBJAREA , "ECON" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( PUBSTAGE , "final" ) ) AND ( LIMIT-TO ( SRCTYPE , "j" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( OA , "all" ) ). The search criteria were created with the purpose of narrowing down the focus publications about disclosure in social accounting within the business and economics academic areas, with an emphasis on the final publication stage, journal sources, english language, and open access availability. Table 1 shows the specific data-gathering criteria used during the search procedure. This methodical strategy ensured a targeted and comprehensive retrieval of relevant literature for the social accounting disclosures investigation.

**Table 1. Data Collection Criteria**

| No. | Data collection criteria | Number of articles |
|---|---|---|
| 1. | Database: Scopus<br>Search Date: January 29, 2024<br>Search by title, abstract, and keywords:<br>“disclosure” AND “social” AND “accounting” | 1.023 |
| 2. | Selected Subject Areas:<br>#Business, Management and Accounting<br>#Economics, Econometrics, and Finance | 743 |
| 3. | Document Type:<br>#Articles | 619 |
| 4. | Publication Stage<br>#Final | 587 |
| 5. | Source Type:<br>#Journal | 579 |
| 6. | Restrictions:<br>#English language and open access articles | 188 |

In the initial search, the article collection had a total of 1,023 data from the Scopus database. Furthermore, data restrictions were carried out by using the scope of Business, Management and Accounting and Economics, Econometrics, and Finance so that the results became 743 articles. Then, restrictions were made in the form of document types totaling 619 articles. Then, the limitation of the final stage publication is 587 articles. Restricting the type of source in the form of journals resulted in 579 articles. After that, the data was selected again by determining the data used, namely, only articles in English and all articles have open access, resulting in a total of 188 articles used in this study. The analysis tool used in this research is Biblioshiny on the R Studio platform, as described by Aria & Cuccurullo (2017). The data obtained was presented in “CSV” format from Scopus in accordance with the software requirements used by Biblioshiny.

## RESULTS AND DISCUSSION

### Descriptive main information

Based on table 2, information on the results of data analysis is presented in descriptive analysis. The table illustrates that over 20 years, 492 authors have published 188 documents on social accounting reporting disclosure information. Then, the articles analyzed are cited by about 35 authors and accumulate more than five citations per year.

**Table 1. Document main result information**

| Description | Results |
|---|---|
| **Timespan** | 2003:2024 |
| **Sources (Journals, Books, etc)** | 108 |
| Documents | 188 |
| Document Average Age | 5,61 |
| Average citations per doc | 35,23 |
| References | 12009 |
| **Keywords Plus (ID)** | 118 |
| Author's Keywords (DE) | 621 |
| **Authors** | 492 |
| Authors of single-authored docs | 26 |
| **Single-authored docs** | 28 |
| Co-Authors per Doc | 2,78 |
| International co-authorships % | 29,26 |
| **Article** | 188 |

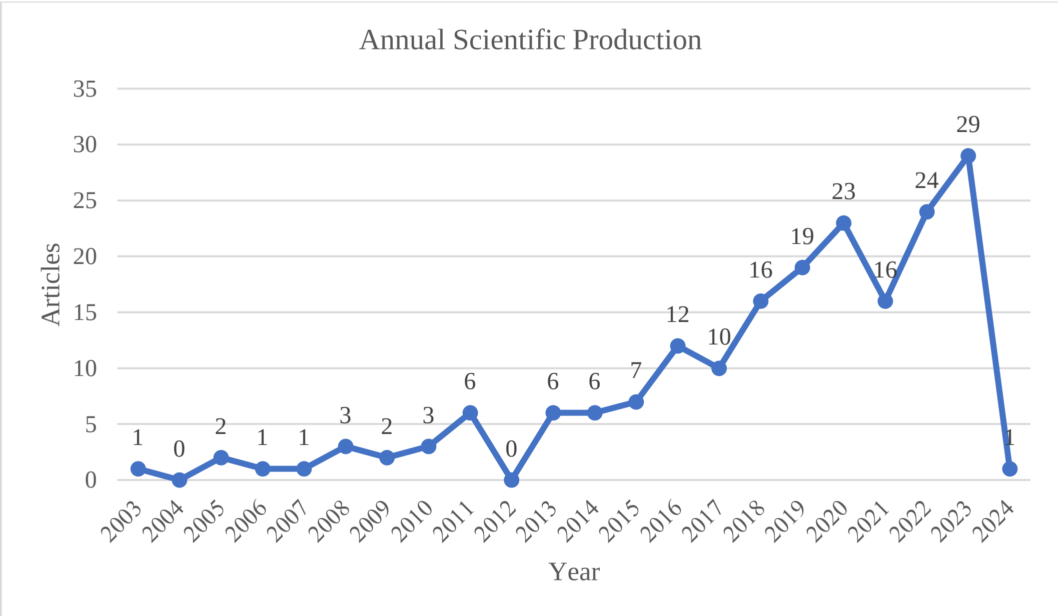
Source: Primary data for 2024

Figure 1 shows annual scientific productivity trends in social accounting publications from 2003 to 2024. The identified data shows variations in the number of publications over this period. From 2003 to 2015, the number of publications ranged from 1 to 7 per year. The publication specifically focuses on social accounting disclosure and reporting, especially in the context of environmental and social responsibility reports, the factors that influence them, and environmental report disclosure practices.

However, after 2015, there was a significant increase in the number of publications focusing on corporate social responsibility, stakeholder engagement, and related issues. Some literature shows that these studies not only disclose data but also look at the longitudinal aspect of reporting, with a peak occurring in 2022 to 2023 ranging from 24 to 29 publications. This reflects increasing research interest in issues such as corporate governance, CSR content analysis, and its relationship with sustainability disclosure and sustainable development.

This pattern indicates an increase in interest in the social accounting literature in recent years. Although the number of publications tends to fluctuate, this field of study is still in the development stage and still has exploration potential for future researchers. This shows that the issue of social responsibility is increasingly becoming a major concern, with the need to disseminate it or report it to all stakeholders (Rodrigues et al., 2021). Nonetheless, it should be noted that despite increasing interest in the social accounting literature, this field of study still needs to be fully discovered. Further research is still needed to understand certain aspects of corporate social responsibility and its disclosure practices in more depth. Therefore, further exploration and follow-up research remain necessary for future researchers to develop a better understanding of social accounting and best practices in this context.

**Figure 1. Annual Scientific Production**




**Social Accounting Reporting Disclosure Research Trends**

This research further analyzes the most cited journals, authors, and keywords. This information provides insight into the state of research and informs the most influential publications and journals for disseminating findings. The bibliometric analysis in this study focuses on the following: journals, authors, countries, and keywords that are widely used.

Figure 2 represents the ten most effective journals based on their citations related to social accounting reporting disclosures. “Accounting, Auditing, and Accountability Journal” is in the top position with a score of 15 articles, and the “International Journal of Professional Business Review” has a score of 6 articles. The journals “Business Strategy and the Environment” and “Corporate Social Responsibility and Environmental Management” have a score of 5 articles each. Furthermore, several journals such as “Accounting Forum”, “Australasian Accounting, Business and Finance Journal”, “Cogent Business and Management, “Corporate Ownership and Control”, Critical Perspectives on Accounting” and others are shown in the figure with a score of 4 articles. It can be concluded that the Accounting, Auditing, and Accountability Journal is the most influential source of publications related to social accounting reporting disclosure practices.

**Figure 2. Most Relevant Sources**

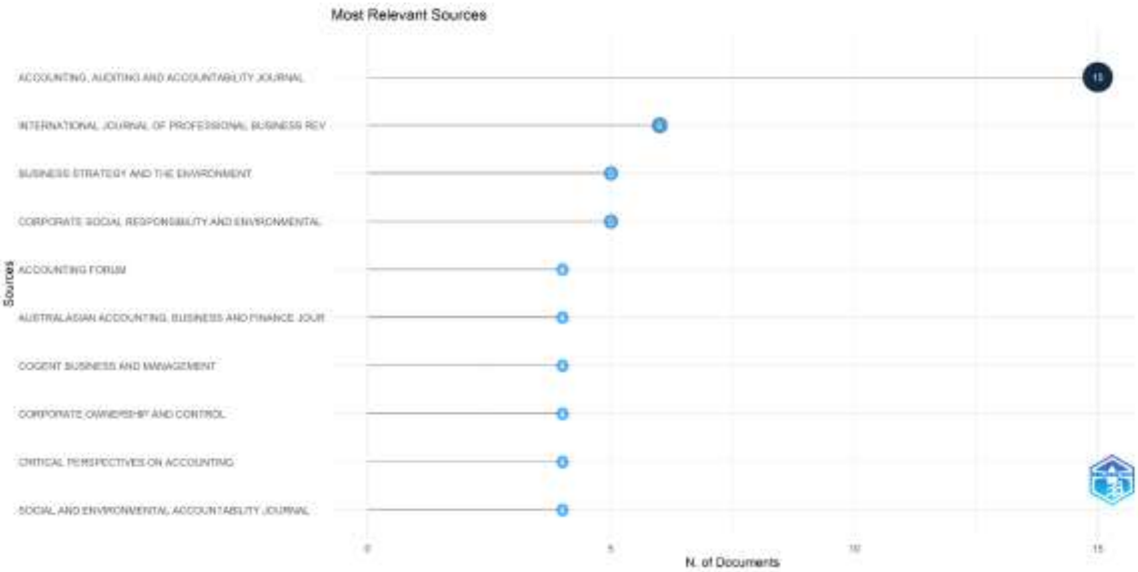



Figure 3 illustrates the ten most important academic journals in the domain based on the H-index. The H-index is used to represent the quality of a journal based on its citation impact and performance. The H-Index can be a much better indication of the high quality and quantity of a journal. In this figure, attention is drawn to the high H-index for the journal "Accounting, Auditing, and Accountability Journal," which has an H-index of 13. This indicates that the journal is frequently cited by other studies, which can be taken as an indication of substantial influence and relevance in the field. In addition, the journal is ranked Q1 on Scopus, which indicates that it is also officially recognized as a high-quality journal. This is followed by "Corporate Social Responsibility and Environmental Management", which comes in second place with an H index of 5. Furthermore, "Accounting Forum" and "Critical Perspectives on Accounting" are in third place as the most influential sources related to this topic, with an H index of 4.

**Figure 3. Sources' Local Impact by H index**

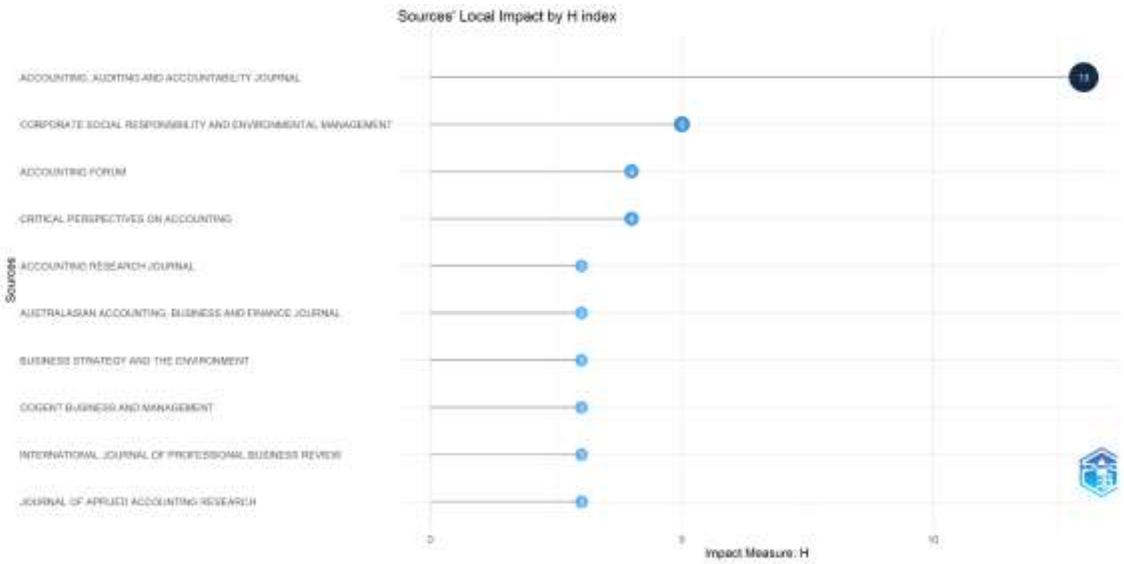
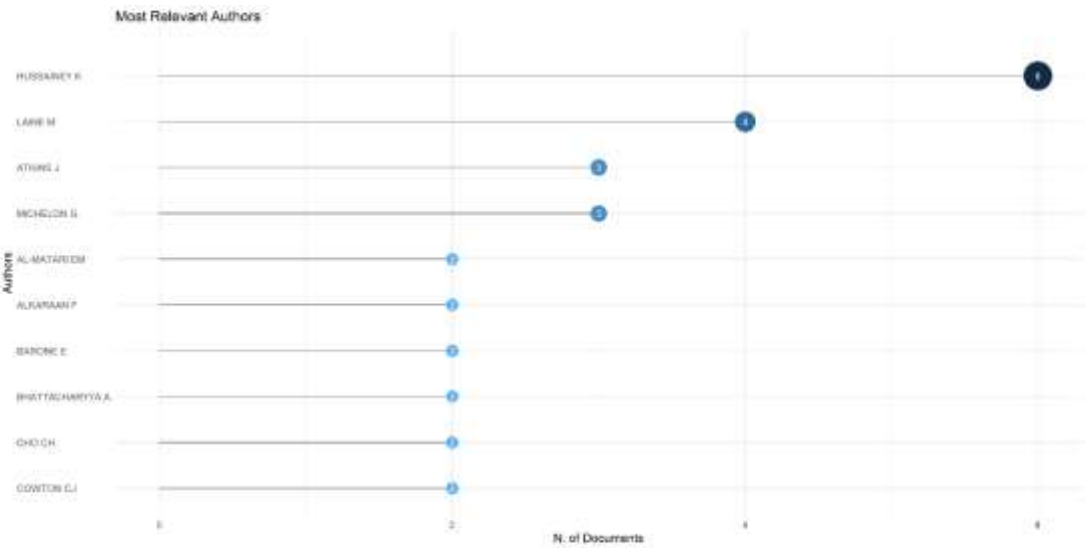



Figure 4 shows that "Most relevant authors" refers to authors who have made the most significant contributions to a particular field or topic. Bibliometric analysis is a statistical method used to identify the most cited papers in a field and the authors who published them. The following are ten of the most relevant authors who have published publications regarding social accounting reporting disclosures. Khaled Hussainey is the most efficient author with the highest number of publications in this field, having six articles. This is followed by Matias Laine, who is the second most effective author regarding this publication with four articles. Meanwhile, several authors such as Atkins J and Michelon G are the 3rd ranked authors regarding the publication of 3 articles on this topic.

**Figure 4. Most relevant authors**




Author Local Impact by H Index is a variant of the H index that distributes the citations each publication receives among its authors. This can help to identify the most influential authors in a particular source and to evaluate the impact of their research results particularly regarding social accounting reporting disclosures. The following are ten author impacts based on the H Index.Based on Figure 5, it can be concluded that Khaled Hussainey is the most impactful writer with an H-Index score of 5. Then several impactful writers are Atkins J, Laine M, and Michelon G with an H-Index score of 3.

**Figure 5. Authors' Local Impact by H Index**

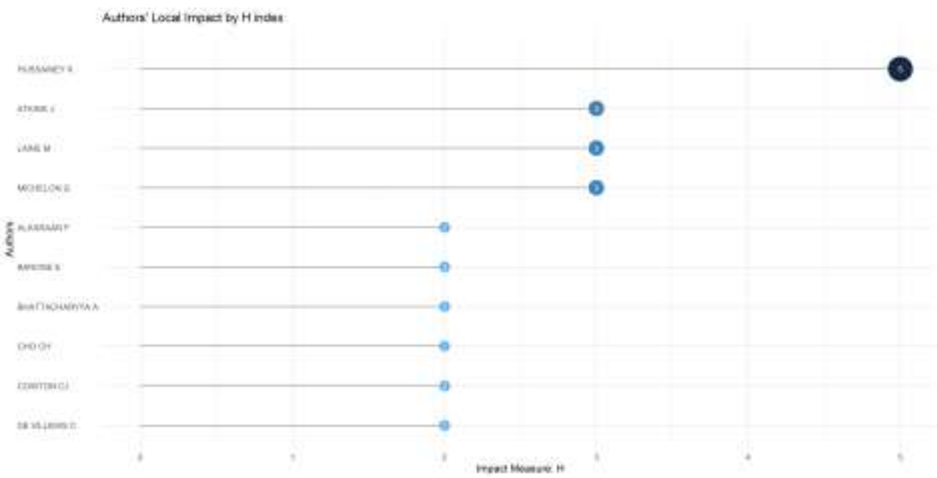
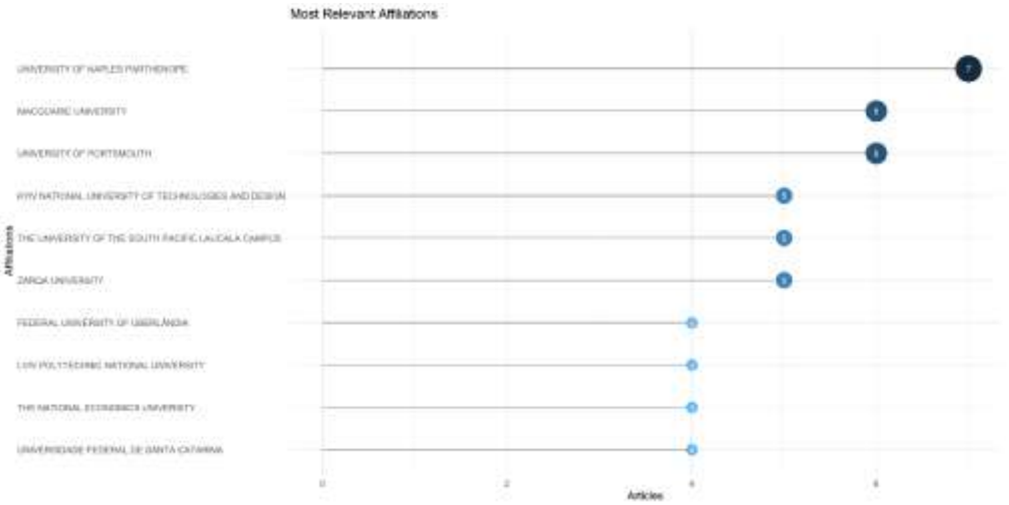


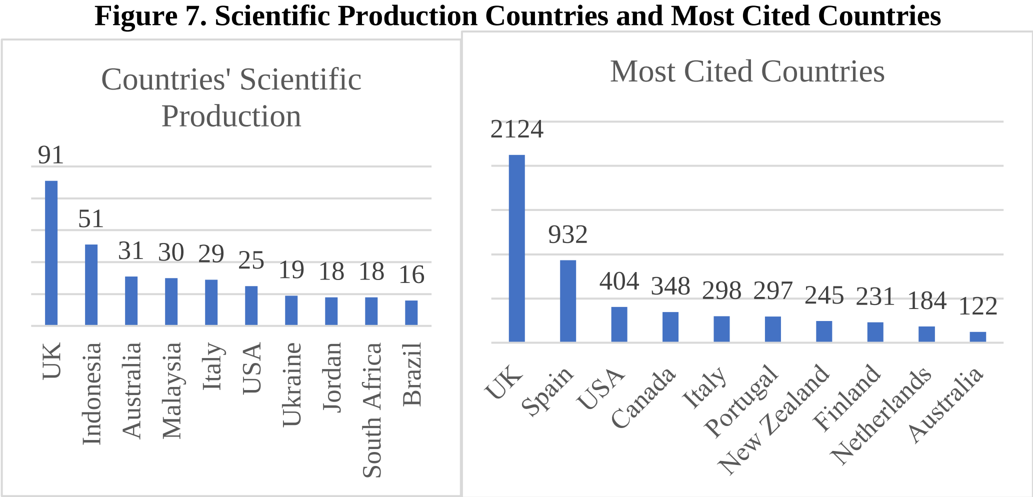

Figure 6 shows the most relevant authors' affiliation with universities. The most relevant affiliation refers to the institution or organization that is the main affiliation of the author of a publication, especially regarding social accounting reporting disclosures. This information is important in analyzing research trends and collaboration between institutions. Based on this, it explains that the University of Naples Parthenope is in the top position with a score of 7; it can be seen that the university began in 2013 to develop a new set of study curricula and department-based research organizations and is committed to pursuing social, cultural fields and economic development (University of Naples Parthenope, n.d.). Then followed by Macquarie University and the University of Portsmouth have the same score of 6.

**Figure 6. Most Relevant Affiliations**




Based on figure 7 shows "Countries of Scientific Production" and "Most Cited Countries" refer to countries that produce the most scientific publications and receive the most citations, respectively. Therefore, these results are important in analyzing research trends and collaboration between countries. The following are the ten countries with the most scientific production and the countries that are most cited, especially regarding the disclosure of social accounting reporting. The UK is the country with the first-highest number of productions at 91 articles, followed by Indonesia with the second-highest number of publications at 51 articles. Then Australia and Malaysia became the countries with the highest number of publications, ranking third and fourth, respectively, with 31 and 30 articles published.  Meanwhile, based on the country most cited regarding the publication of social accounting reporting disclosures, namely the UK, with 2124 citations. Next is Spain, with the number of citations the second highest was 932 citations. Then the third place with the most citations is the United States, with 404 citations.

**Figure 7. Scientific Production Countries and Most Cited Countries**



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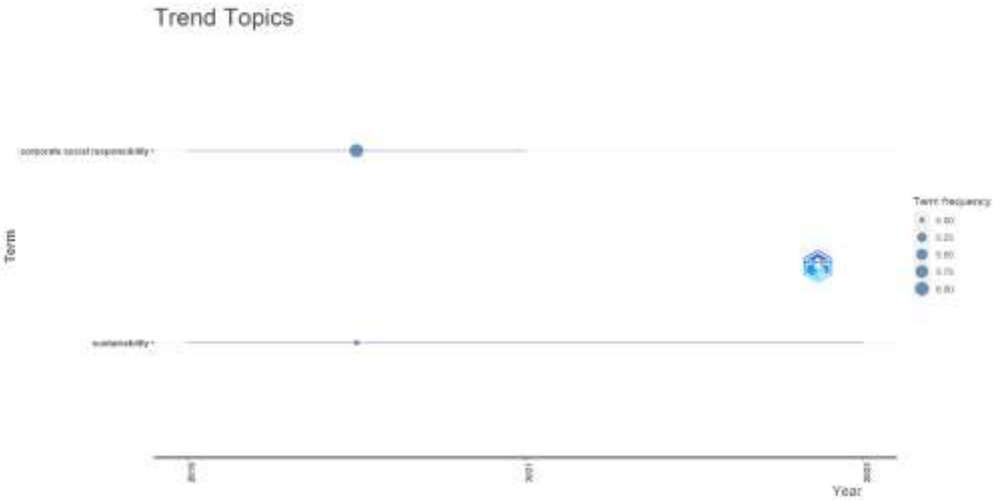
WordCloud is used to display the words or terms that appear most frequently in a set of documents. It is a graphical representation of the most common words or terms in a text corpus, where the size of each word is proportional to its frequency in the corpus. WordCloud helps researchers identify the most important topics or themes in a collection of documents and visualize the relationships between them. Based on figure 8 shows that “corporate social responsibility” is a popular keyword in this analysis, followed by “sustainability” and “sustainable development”. This means that if you want to conduct research related to social accounting, then future researchers can use these keywords in their source search.

**Figure 8. WordCloud**


Trend topics in bibliometric analysis involve identifying and analyzing the emerging or prevalent themes within a specific field of study over a certain period. These analyses help in understanding the current focus areas, tracking the development of new themes, and identifying potential research directions for future studies. The trend of using social accounting disclosure keywords can be seen in Figure 9, which shows that corporate social responsibility (CSR) has become a rapidly trending topic of social accounting disclosure since 2019. Looking at the data for the last 20 years shows that this topic is still interesting and needs to be researched more deeply. Based on Cho et al., (2015) there has been a substantial increase in the scope of CSR disclosure, especially in terms of providing information on environmental and social aspects. This is supported by Wiguna et al., (2023), who state that companies that carry out corporate social responsibility commit to environmental sustainability, and this is a very attractive investment opportunity. This is also valuable information for investors and potential investors to help them make the right decisions regarding companies that apply environmentally friendly accounting practices in corporate reporting. It is also accompanied by “sustainability”, which has emerged as a rapidly growing trend topic to date.

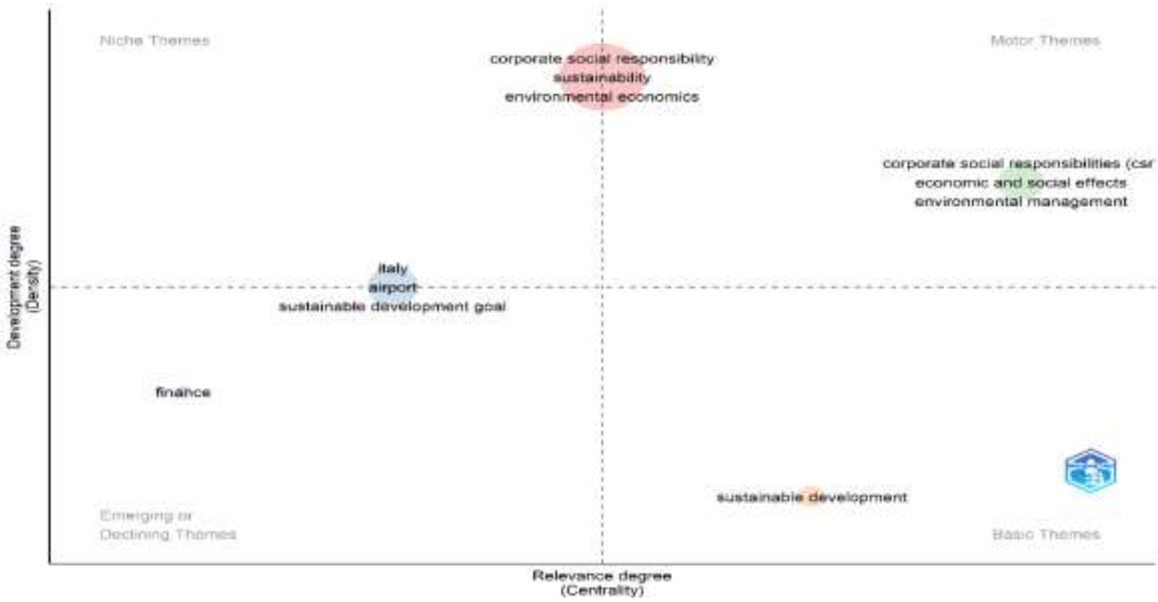
**Figure 9. Trend Topics**




## Potential Future Research Topics

Quadrants in theme map analysis consist of 4, namely niche themes, motor themes, declining or emerging themes, and basic themes. Khare & Jain (2022) state that niche themes are themes that are widely researched or are developing, usually the focus of extensive research, but have a low level of relevance to a particular topic. In contrast, motor themes indicate themes that are developing, have significant growth and have a high level of relevance. Highly researched themes play an important role in developing a topic while declining or emerging themes have a limited amount of research. Basic themes involve topics that are relevant but under-researched, indicating opportunities for further research in the future. These basic themes reflect central subjects that still need to be explored in greater depth. Figure 10 explains the current research theme map on the topic of disclosure of social accounting reporting; suggestions for future research can be seen in the basic themes. The research themes suggested by the author are sustainable development.

**Figure 10. Thematic Map**



## CONCLUSIONS, SUGGESTIONS, AND LIMITATIONS

This study analyzed 188 indexed articles from Scopus related to the research theme of social accounting disclosure. Accounting, Auditing, and Accountability Journal and International Journal of Professional Business Review are effective journals based on their citations related to social accounting. Then, the Accounting, Auditing, and Accountability Journal and Corporate Social Responsibility and Environmental Management are the most important academic journals in the domain, based on the highest H-index. Khaled Hussainey and Mathias Laine are the most active authors, and Khaled Hussainey is the most impactful author based on H-Index. The University of Naples Parthenope, Macquarie University, and the University of Portsmouth are the three most relevant affiliations for publications in this field. The most used keywords were corporate social responsibility, sustainability, and sustainable development. The most productive and cited country was the UK. On thematic maps, the findings indicate social accounting research opportunities related to sustainable development.

Suggestions and limitations that the study only used the Scopus database, considering that there are many other various database platforms for data extraction for future research. The keywords we used in this study were selected based on the definition of social accounting disclosure and related literature, and they can be modified to include more articles and publications related to this field. The bibliometric tools used in this study include some methodological biases, so we should set certain parameters and standards so researchers can use other systematic review techniques in the future. Future researchers can combine bibliometrics with content analysis to get a more comprehensive and detailed picture of research trends. Another area for improvement is that this study only includes articles published in academic and international journals and does not include other types of documents such as book chapters, proceedings, and others.

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# Board of Commissioners Effectiveness, Transparency, Shari'ah Supervisory Board, and Financial Performance of Indonesian Shari'ah Banks

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**ABSTRACT**
*This study aims to provide empirical evidence of the Effect of Board of Commissioners' Effectiveness and Risk Transparency on Performance with the Sharia Supervisory Board as Moderating Variable. Performance is measured using the Return On Assets (ROA) ratio. The effectiveness of the Board of Commissioners and the Sharia Supervisory Board in this study was measured by the Score Index Item. Risk transparency is measured using a dummy variable. The sample used in this study was a Sharia Commercial Bank company registered with the Financial Services Authority in 2015-2019 with a total sample of 70 observations.*
*The results of the study indicate that the effectiveness of the board of commissioners has no effect on performance. Risk transparency has a positive effect on performance. The sharia supervisory board is not able to moderate the effect of the effectiveness of the board of commissioners and risk transparency on bank performance*

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## INTRODUCTION

Banks are financial institutions that have a very broad public responsibility, so they will receive the spotlight in various aspects including financial performance. Financial performance describes the financial condition of the bank in a certain period (Faisal *et al.*, 2018). The better the financial performance, the better or healthier the health level of the bank (Maheswari & Suryanawa, 2016). The performance of Islamic banking fluctuates greatly between banks and tends to show a slowdown in profit growth. This is influenced by various factors, especially bank management factors*(Corporate Governance)* and transparency towards risk in banks. Forum for Corporate Governance in Indonesia (FCGI), (2002) reveals that *corporate governance* is a set of rules governing the relationship between shareholders, company management, creditors, government, employees and internal and external stakeholders relating to their rights and obligations. The implementation of *corporate governance* can be carried out through monitoring mechanisms to reduce or harmonize various conflicts of interest. This mechanism can be in the form of the effectiveness of the board of commissioners. The effectiveness of the board of commissioners is considered to reduce agency problems that occur between the management of the board of directors and shareholders so that all actions taken by management are not only solely concerned with one party

The effectiveness of the Board of Commissioners (EDK) is said to be able to supervise company management so as to improve the company's financial performance. According to Kartin and Dewi, (2019) the board of commissioners has a role in supervising the policies of the directors in running the company and advising the board of directors so that the board of commissioners is the center of the company's resilience and success. The effectiveness of the board of commissioners in carrying out its role can be seen from several indicators such as the size of the board of commissioners, board independence and board of commissioners meetings (Neifar and Jourbui, 2020). Board size is considered one of the main important mechanisms of *Corporate Governance*. In the context of Islamic banking, the minimum members of the board of commissioners cannot be less than 3 and cannot be more than 15 (Bukhair & Rahman, 2015). Mollah & Zaman, (2015), Adebayo, (2013) found that board size has no impact at all on performance. While Al Saidi and Al-Shammari, (2013), Rachdi & Ben Ameur, (2011) found that board size can improve performance.

The effectiveness of the board of commissioners also requires board independence. Board independence is considered as one of the important *corporate governance* mechanisms that serves to enhance the supervisory and monitoring functions of the board and consequently can improve firm performance (Haniffa & Cooke, 2002). Board independence is considered important also because outside directors are considered as erroneous monitors and can discipline management and improve firm performance (Duchin *et al*., 2010). Bukhair and Rahman, (2015), Al Manaseer and Al-Hindawi, (2012) found that board independence has a positive effect on firm performance. Meanwhile, Mollah & Zaman, (2015) found that board independence has a negative effect on performance. Apart from board independence, the effectiveness of the board of commissioners is also supported by the existence of board meetings. Boards that meet frequently or hold meetings will carry out their obligations diligently which can be beneficial to stakeholders (Yatim *et al*., 2006). Therefore, it can be said that the more often the frequency of meetings is held, the more and faster the board of commissioners will get information on company developments. Through these meetings the board deliberates and makes decisions based on the information obtained so that the supervisory function of the board of commissioners on management will be effective (Restria, 2014). Liang *et al*., (2013) and Ntim and Osei, (2011) in research show that the number of board meetings has a positive effect on the number of board meetings.

Risk disclosure is considered to be one way that companies can issue accountability and can maintain shareholder trust. By disclosing risk, the company can communicate how it is responsible for the risk profile to stakeholders (Nahar, 2016). Broader risk disclosure can reduce information asymmetry and ensure shareholders can fully assess company performance. Risk disclosure serves to monitor, discipline, and remove ineffective management systems, which can improve company performance (Riskanah & Juliarto, 2018). Risk aspects disclosed in banks include aspects of credit risk, market risk, liquidity risk, operational risk, compliance risk, strategic risk, legal risk, and reputation risk. Indicators disclosed in credit risk such as the composition of the asset portfolio and the level of concentration, the quality of the provision of funds and the adequacy of reserves, the strategy of providing funds and the source of origin of the provision of funds, external factors

In market risk the indicators disclosed include volume and composition of the portfolio,*potential loss*, interest rate risk in the *Banking Book* and business strategy and policy. Furthermore, in liquidity risk, the indicators disclosed include the composition of assets, liabilities, and Administrative Account Transactions (TRA), concentration of assets and liabilities, vulnerability to funding needs, access to funding sources. In operational risk, the indicators disclosed include business characteristics and complexity,*people*, information technology and supporting infrastructure (*system*), frequency of internal *fraud* and external *fraud*, frequency of external events. In compliance risk, the indicators disclosed include the type and significance of violations or non-compliance committed by the bank, the bank's compliance *track record* (the same type and frequency of violations within 3 years), violation of provisions on certain transactions.

Strategic risk disclosed indicators such as the suitability of the strategy with the conditions of the business environment, the bank's strategy, the bank's business position, the achievement of the bank's business plan. Legal risk disclosed indicators such as litigation factors, weakness of engagement factors, absence/change of legislation factors. Reputation risk disclosed indicators such as the influence of the reputation of bank owners and related companies, violations of business ethics, the complexity of the bank's products and business cooperation, the frequency, materiality and exposure of negative bank news, the frequency and materiality of customer complaints. Nahar, (2016) In his research, he revealed that risk disclosure has a negative effect on bank performance. Meanwhile, Prameswari and Meiranto, (2019), Kusumastuti and Ghozali, (2020) found that risk disclosure has a positive effect on banking performance.

Govindarajan (1986) suggests that reconciling the differences in the results of previous studies can be resolved through a*contingency approach*. Contingency theory explains the existence of situational factors that can affect one variable with another. Contingency theory can be used to analyze the design and management accounting system to provide information that companies can use for various purposes. Where there is some involvement of existing variables, one of which is the moderating variable. In this study using the Sharia Supervisory Board (DPS) as a moderating variable. The existence of a Sharia Supervisory Board (DPS) can reduce *agency* problems that arise between principals and agents. DPS plays a role in assisting the board of commissioners as the principal to supervise the financial reporting prepared, so that DPS is very important in controlling an entity. With the existence of DPS, it is hoped that it can supervise management if they commit various acts of fraud, including in terms of risk disclosure that is not transparent to the public so that this can have an impact on bank performance. Bank performance can be said to be effective if the performance has achieved the goals and standards set by the company.

The quality of DPS in carrying out its role can be seen from several indicators such as the existence of DPS, the number of DPS members, the expertise of DPS members, the qualifications of the Doctoral degree of DPS members (Neifar *et al*, 2020). With good DPS supervision, the board can perform effectively so that it has an impact on performance. And when it is also good at supervision, risk-related disclosures at the bank will also be more transparent. Where if the high level of risk disclosure carried out by the company, the bank's performance will also increase. Conversely, when the level of corporate risk disclosure is low, the company's performance will decrease. In research (Neifar *et al*., 2020) shows that DPS moderates the influence of the effectiveness of the board of commissioners and risk transparency on performance. Furthermore, Grassa & Matoussi (2014), Nomran (2018) and (Mollah & Zaman, 2015) show that the sharia supervisory board has a positive impact on performance. Meanwhile, in Azizah & Erinosi's research, (2020) found that the sharia supervisory board had a negative effect on performance.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Agency theory (Jensen & Meckling, 1976) explains that opportunistic management behavior can be avoided through effective supervision. One effective supervisory mechanism is carried out by the board of commissioners. The board of commissioners is tasked with determining various general policies, carrying out supervision, control and guidance of the bank. In addition, the board of commissioners has the role of supervising the board of directors' policies in running the company and providing advice to the board of directors. The effectiveness of the Board of Commissioners is highly dependent on the size or number, independence of the board and board meetings.The size of the board of commissioners is very influential on decision making and carried out by the board of commissioners. With the board of commissioners, it is hoped that it can improve banking performance with its strict supervision. Board independence as one of the *Corporate Governance* mechanisms which also serves to improve board supervision and monitoring and consequently improve bank performance. Meetings of the board of commissioners, where the board that often meets or holds meetings will carry out its obligations diligently which can be beneficial to stakeholders (Yatim *et al*., 2006), the more often the frequency of meetings is carried out, the more and faster the board of commissioners gets information about company developments which of course can improve performance.

Neifar, (2020) found that the effectiveness of the board of commissioners affects the performance of Al- Saidi and Al-Shammari, (2013), Rachdi and Ben Ameur, (2011) found that board size can improve performance. Bukhair and Rahman, (2015), Al Manaseer et al, (2012) found that board independence has a positive effect on company performance. Liang *et al*., (2013) and Ntim and Osei, (2011) found that the number of board meetings has a positive and significant effect on bank performance. Based on the description above, the first hypothesis in this study is:

***H1. The effectiveness of the Board of Commissioners has a positive effect on Bank performance***

Agency theory also states that agency problems will decrease as the level of information asymmetry decreases. Risk disclosure is considered to be one way for companies to issue accountability and can maintain shareholder trust. Broader risk disclosure can reduce information asymmetry and ensure shareholders can fully assess company performance Oliveira *et al*. (2011). Risk disclosure as a monitor, discipline, and remove ineffective management systems, this can certainly improve company performance (Riskanah & Juliarto, 2018). prameswari and Meiranto, (2019), Kusumastuti and Ghozali, (2020), Heryantama and Syafruddin, (2019) found risk disclosure has a positive effect on performance. Based on the description above, the second hypothesis in this study is

***H2. Risk Disclosure has a positive effect on Bank performance.***

Fiedler, (1967) suggests leadership depends on the situation. The effectiveness of the board of commissioners in supervising and providing advice to directors that can affect the performance of sharia banks is situational. The same also applies to the ability of risk disclosure that can help *stakeholders* to understand the risk profile. The conditional that has an impact on the effectiveness of the board of commissioners and risk transparency is the sharia supervisory board (DPS).

Neifar, (2020) showed that DPS moderates the positive effect of the effectiveness of the board of commissioners on bank performance. Furthermore, Grassa & Matoussi (2014), Nomran (2018) and (Mollah & Zaman, 2015) showed that the Islamic supervisory board also moderates the positive effect of risk information on performance. Thus, the following hypothesis is proposed:

***H3. DPS moderates the relationship between board effectiveness and bank performance.***
***H4. DPS moderates the relationship between risk transparency and bank performance.***

## RESEARCH METHOD

The sample of this research is 14 sharia banks in Indonesia with observations for 5 years (70 observations). The variables used in this study are bank financial performance, board effectiveness, risk transparency, and the quality of the sharia supervisory board. Bank performance is measured by the profitability ratio using *Return On Asset* (ROA). The effectiveness of the board of commissioners is measured using related indicators, namely activity, size, and independence. Activity is measured using the number of meetings and the attendance rate of the board of commissioners. Score 1 is given to banks that have less than 4

board meetings a year and less than 70% board attendance or no information, score 2 is given to banks that have between 4 to 6 board meetings a year and 70% to 80% board attendance and score 3 to banks that have more than 6 board meetings a year and more than 80% board attendance. Furthermore, banks will score 1 if the board consists of less than 5 members or more than 16 members or there is no information, score 2 if the board consists of 11 to 15 members, 3 if the board consists of 5 to 10 members.
Finally, the bank will score 1 if the number of independent commissioners is less than 30% or there is no information, score 2 if the number of independent commissioners is between 30% and 50% and 3 if the number of independent commissioners is more than 50%. Risk transparency is measured by comparing the amount of risk information disclosed and risk information that should be disclosed for aspects of credit risk, market risk, liquidity risk, operational risk, compliance risk, strategic risk, legal risk, and reputation risk. DPS quality by using an index that includes aspects of existence, number of members, financial expertise and DPS qualifications.
This study uses hierarchical multiple linear regression analysis to test the direct relationship of board effectiveness and risk transparency to bank performance and the moderating impact of the Sharia Supervisory Board (DPS) on the direct relationship. The regression model used in this study is:

$$\mathrm{KB} = \alpha + \beta_1 \,\mathrm{EDK\ SCORE} + \beta_2 \,\mathrm{TR\ SCORE} + \mathcal{E} \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \ (1)$$

$$KB = \alpha + \beta_1 \,\mathrm{EDK\ SCORE} + \beta_2 \,\mathrm{TR\ SCORE} + \beta_3 \,\mathrm{DPS\ SCORE} + \beta_4 \,\mathrm{DPS\ SCORE} * \mathrm{EDK\ SCORE} + \beta_5 \,\mathrm{DPS\ SCORE} * \mathrm{TR\ SCORE} + \mathcal{E} \ \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \ (2)$$

Explain :

KB: Bank Performance
α : Constant
ß : Regression Coefficient
EDK SCORE : Total Board of Commissioners Effectiveness Score
DPS SCORE : Total Score of Sharia Supervisory Board
TR SCORE : Total Risk Transparency Score
ß1- ß5 : Coefficient of explanatory variables
Ɛ : Residual variable or prediction error

## RESEARCH RESULTS AND DISCUSSION

### Descriptive Statistics

Descriptive statistics in this study describe *Return On Equity* (ROA), namely net income divided by total bank assets, the effectiveness of the board of commissioners measured using a score index, risk transparency measured by risk disclosure of 8 items, where each disclosed item is given a score of 1 and not disclosed 0, and the Sharia Supervisory Board (DPS) measured using a score index. Descriptive statistics on the research are presented in Table 1.

**Table 1. Descriptive Statistics**

| Variabel | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| ROA | -0.1689 | 0.1080 | 0.0027 | 0.0406 |
| EDK_SCORE | 6.0000 | 9.0000 | 6.8857 | 0.8434 |
| TR_SCORE | 5.0000 | 8.0000 | 7.7857 | 0.7782 |
| DPS_SCORE | 0.0200 | 0.0400 | 0.0309 | 0.0063 |

Table 1 shows that the average return on assets of Indonesian Islamic banks is 0.27% with the lowest value being minus 16.88% and the highest being 10.8%. This indicates that the performance of Islamic banks is quite varied with a relatively low average level. The effectiveness of the Board of Commissioners (EDK) of Indonesian Islamic banks on average shows quite effective as indicated by a score of 6.89 out of a maximum score of 9. Risk Transparency (TR) of Indonesian Islamic banks on average is also quite high as indicated by 7.79 out of a maximum of 8. Meanwhile, the quality of the Sharia Supervisory Board (DPS) on average is relatively very low with 3.08%.

**Hypothesis Testing Results**

The results of hypothesis testing are presented in table 2 which includes the test of model fit, determination, and the relationship between variables. The results of testing the suitability of the model show that the F value for model 1 and model 2 is 114.558 and 74.319 respectively with a significance level below 1%. Meanwhile, the R square for both models shows that the ability of the independent variables to explain the dependent variable in this study exceeds 80%. This indicates that the model used in the study has met the requirements of a good model.

**Table 2. Hypothesis Testing Results**

| Variabel | Koef. β | t | Sig. | Koef. β | t | Sig. |
|---|---|---|---|---|---|---|
| Konstanta | -0.148 | -12.824 | 0.000 | 0.019 | 0.212 | 0.833 |
| EDK_Skor | -0.001 | -0.974 | 0.335 | -0.004 | -0.12 | 0.905 |
| TR_Skor | 0.039 | 15.105 | 0.000 | 0.03 | 5.726 | 0.000 |
| DPS_Skor | -0.148 | -12.824 | 0.000 | 0.008 | 0.107 | 0.915 |
| EDK_Skor X DPS_Skor | | | | -0.006 | -0.168 | 0.867 |
| TR_Skor X DPS_Skor | | | | 0.019 | 0.212 | 0.833 |
| R Square | 0.806 | | | 0.830 | | |
| Adj R. Square | 0.799 | | | 0.819 | | |
| F | 114.558 | | | 74.319 | | |
| Sig | 0.000 | | | 0.000 | | |

The results of testing the effect of the effectiveness of the board of commissioners on financial performance show that the regression coefficient*(β1)* on the EDK score of -0.001 shows a negative direction with a significance value greater than 0.05 the variable effectiveness of the board of commissioners on the performance of Islamic banking**.** The results of the study are not in line with research conducted by Neifar, (2020) which found evidence that the effectiveness of the board of commissioners has a positive effect on performance. However, in line with research by Mollah & Zaman, (2015), found that indicators of the effectiveness of the board of commissioners, namely board size, board independence, have no impact at all on performance. And the number of board meetings has a negative effect on performance (Kusumastuti and Ghozali, 2020). The results of this study are not in line with agency theory where according to Jensen and meckling (1976), it states that the existence of a board of commissioners as one of the company's *corporate governance* mechanisms is expected to overcome agency problems by managers so as to improve the performance of Islamic banking. Because of the existence of an effective board of commissioners, namely making manager actions *align* with the interests of company owners. The size, independence, and effectiveness of the board of commissioners that have not been able to resolve agency problems that occur between the *principal* (owner) and the *agent* (manager) which should reduce the behavior of managers who want to benefit themselves.

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The results of testing the effect of risk transparency on financial performance show that the regression coefficient*(β2)* on the TR Score of 0.039 shows a positive direction with a significance value of less than 0.05, which means that there is an influence of the risk transparency variable on the performance of Islamic banks because the significance value is less than 0.05. The results of this study are in line with the results of research conducted by Prameswari and Meiranto, (2019), Kusumastuti and Ghozali, (2020) which proved to find that risk disclosure has a positive effect on banking performance. Based on agency theory, disclosure is considered a monitoring mechanism and is one way to mitigate agency problems, where managers disclose relevant information to help investors monitor managers' actions in carrying out their duties and assess managers' ability to manage company resources in their interests. So this research is in line with *agency* theory which reveals the relationship between owners and management in which information asymmetry arises because the management*(agent*) has more information and understands information about the actual condition of the company compared to the principal (shareholder), allowing management to act in their interests. Therefore, disclosure is an important factor that can reduce conflicts between agents and principals.

The moderation test results show that the interaction variable between DPS Score and EDK Score has a positive regression coefficient of 0.008 and a significance value greater than 0.05, which means that the Islamic supervisory board does not moderate the relationship between the effectiveness of the board of commissioners on bank performance. The second moderation test results show that the DPS Score_TR Score variable has a regression coefficient of -0.006 and a significance value greater than 0.05, which means that the Islamic supervisory board does not moderate the relationship between risk transparency and performance.

The results of this study are not in line with*agency* theory and*contingency* theory. Agency theory put forward by Jensen and Meckeling which states that the existence of a sharia supervisory board as one of the company's *corporate governance* mechanisms is expected to overcome agency problems and can minimize fraudulent actions by managers. With the existence of a sharia supervisory board in overseeing bank activities, managers should try harder to improve the performance of Islamic banking in accordance with sharia principles. Based on the results of testing the first hypothesis which shows that the effectiveness of the board of commissioners has not shown any agency conflicts that cause information asymmetry. Thus, the effectiveness of the board of commissioners has not been able to become a monitoring mechanism that can improve the performance of Islamic banking. This makes the moderating variable of the sharia supervisory board in this study unable to strengthen or weaken the effect of the effectiveness of the board of commissioners on the performance of Islamic banking. Furthermore, in contingency theory, it is explained that the inconsistency in research results is due to the assumption that there are other situational factors that may interact with each other in influencing the independent variable on the dependent variable.

However, the results of this study indicate that the sharia supervisory board is not an influencing variable, there may be other variables outside of the research variables. The results of this study do not support research (Neifar *et al*., 2020) which shows that DPS is able to moderate the relationship between the effectiveness of the board of commissioners on performance. However, the results of this study are in line with the research of Azizah & Erinosi, (2020) which found that the sharia supervisory board has a negative effect on performance.

The results of this study are not in line with agency theory and contingency theory. Agency theory in Jensen and Meckling explains that agency conflicts arise when managers do not provide all the information needed by the owner. To ensure that managers report information that should be required the role of *corporate governance* that can protect the rights of owners to information that should be obtained, one of which is the supervisory mechanism of the sharia supervisory board. However, in this study, the sharia supervisory board has not been able to resolve agency problems that occur between the principal (owner) and agent (manager) which should reduce the behavior of managers who want to benefit themselves. Thus, the sharia supervisory board has not been able to become a monitoring mechanism related to the disclosure of risk information on companies that can have an impact on the performance of Islamic banking. This can be due to the activities of the sharia supervisory board which include approving new products, supervising operational activities to comply with sharia principles and advising the board of directors in order to carry out the company's operational activities in accordance with sharia principles. It can be said that the sharia supervisory board does not have a direct relationship with risk disclosure in the company so that the sharia supervisory board is unable to strengthen or weaken the relationship of risk disclosure to the performance of Islamic banks. Furthermore, contingency theory says that the inconsistency of research results is due to the assumption that there are other situational factors that may interact with each other in influencing the independent variable on the dependent variable. However, in this study DPS was not able to show as a moderating variable for the relationship between risk disclosure and bank performance, there may be other variables outside the research variables. The results of this study do not support research (Neifar et al., 2020) which shows DPS moderates the relationship between operational risk transparency and performance. However, the results of this study are in line with the research of Azizah & Erinosi (2020) which shows that the sharia supervisory board has a negative effect on performance.

## CONCLUSION

This study aims to examine: (1) the effect of the effectiveness of the board of commissioners and risk transparency on bank performance and (2) examine the moderating role of the sharia supervisory board on the effect of the effectiveness of the board of commissioners and risk transparency on bank performance. The results of the study concluded that: (1) the effectiveness of the board of commissioners does not affect performance, (2) risk transparency has a positive effect on performance, (3) the sharia supervisory board does not moderate the relationship between the effectiveness of the board of commissioners on performance, (4) the sharia supervisory board moderates the relationship between risk transparency on performance.

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