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DETERMINANTS OF CAPITAL STRUCTURE IN INDONESIAN COMPANIES FROM 2011 – 2022

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ABSTRACT

The purpose of this study is to examine the variables influencing capital structure in Indonesian businesses. The dependent factors in this case are the debt to asset ratio (DAR) and the debt-to-equity ratio (DER), while the independent variables are profitability, growth potential, size, dividend policy, liquidity, and business risk. All industries in Indonesia are represented in the research sample, except for the banking industry. The panel regression analytical method is used. Furthermore, Random Forest's variable importance analysis is used in this work. The outcome demonstrated that dividends, tangibility, profitability, and liquidity are important components of both DAR and DER models. Strong tangible assets raise both DAR and DER, but favorable profitability and liquidity typically lower them. Additionally, businesses that pay out larger dividends typically have smaller debt loads. Therefore, businesses should concentrate on sustaining strong profitability as it is closely related to sales. To guarantee continuous liquidity, which enables businesses to fulfill both short- and long-term obligations, care must be taken while paying out dividends.

Keywords: Capital Structure; Profitability; Growth Opportunities; Tangibility; Size; Dividend Policy And Liquidity

INTRODUCTION

According to records from PT Kustodian Sentral Efek Indonesia (KSEI), there are more than 10 million investors in the Indonesian capital market. This figure reflects a 33.53% increase from 7,489,337 at the end of 2021 to 10,000,628 as of November 3, 2022. The trend of this increasing number of investors has been evident since 2019 when the investor count stood at approximately 2,484,354 (KSEI, 2022). This indicates the high level of interest among both domestic and international communities in investing in Indonesian companies. However, this heightened interest in investing needs to be supported by an improvement in the performance of these companies. Investors are attracted to companies that exhibit strong performance. Those looking to invest should conduct thorough analysis and assessments before making investment decisions.

The advancements in technology and globalization in the present era undoubtedly require the ability to compete in a highly competitive business environment. This necessitates companies to make efforts to sustain the survival of their businesses. Companies are required not only to produce products and satisfy consumers but also to effectively manage their finances. Investors are inclined towards firms that not only produce goods or services and cater to consumer needs but also demonstrate a keen understanding of financial management Furthermore, in this volatile environment, attaining the ideal capital structure is crucial. The capacity of a firm to thrive in a market that is changing quickly can be dramatically impacted by finding the correct mix between debt and equity funding. A well-planned capital structure can also improve financial stability, which are highly attractive traits for investors and give businesses the resources they need to take advantage of growth prospects.

One of the crucial decisions in managing the financial function is determining the extent to which a company can meet its funding requirements for its operations or business expansion.

To fulfill these funding needs, a company can obtain funds from either internal financing or external financing. Meeting a company's funding needs from internal sources involves utilizing its equity capital, retained earnings, and reserves.

If the internal funding of a company is not enough for its capital structure, the company needs to get external fundings, such as from debts. While choosing the funding alternative, a company needs to consider a favorable combination between internal financing and external financing.

In other words, the company can create the optimal capital structure.
Brigham & Houston (2019) define capital structure as the financing composition that refers to the ratio of equity, preferred stock, and long-term liabilities (Brigham & Houston, 2019). A company's capital structure is the composition of liability and equity (Ross, 2015). A company will choose the most optimal combination of internal and external financing in achieving the desired profitability. Shil et al. (2019) reveals that internal and external factors affect a company's capital structure (Shil et al., 2019). Internal factors include profitability, liquidity, age, size, tangibility, and others. Meanwhile, external factors affecting the capital structure include inflation, interest rates, and monetary policy (Shil et al., 2019).

Several research works have looked into what influences a company's capital structure decisions. Zafar et al. (2019) conducted a study to investigate the effects of three major theories of capital structure in sixteen Asian countries between 2008 and 2014. Chaklader and Chawla (2016) looked into the variables influencing India's capital structure between 2008 and 2015. They found that, for five of the six factors—profitability, size, tangibility, sales growth, and the non-debt tax shield—the trade-off theory holds true, but the pecking order theory only holds true for liquidity (Chaklader & Chawla, 2016). Another study by Saarani and Shahadan looked at the capital structure of Malaysian SMEs, specifically the Enterprise 50 (E50) SMEs, using accounting data covering the five years from 2005 to 2009. The results of the study (Saarani & Shahadan, 2013) indicate that size is important to consider when examining the long- and short-term components of debt structure. However, for SMEs, tangibility, liquidity, and profitability are important factors in determining capital structure. When it comes to long-term considerations, growth and age are very crucial, and taxes are not a major factor when deciding on capital structure.

Suhardjo et al. (2022) investigates the impact of profitability, company size, and liquidity on the capital structure of manufacturing firms listed on the Indonesian Stock Exchange between 2018 and 2020 in Indonesia. The findings demonstrate that the capital structure of mining sector businesses is unaffected by size or profitability. According to Chandra's (2014) research, profitability has a negative impact on the capital structure, whereas size and business risk have a positive impact (Chandra, 2014). These findings are in opposition to Chandra's findings.

Additionally, statistical analysis and data mining are combined in this study. To support the interpretation of the regression results, data mining is used to identify the significance of variables. Data mining algorithms use historical data to construct patterns, whereas traditional statistical methods use historical data to obtain model coefficients and forecast (Nisbet et al., 2018). It is anticipated that the results will be better explained and comprehended by combining these two approaches.

The contradictory findings of earlier research piqued the researcher's interest in looking into the capital structure further. Therefore, the main goal of the study is to look into how business risk, capital structure, profitability, growth prospects, tangibility, size, dividend policy, and liquidity are related to each other. The suggested title for this research is Determinants of Capital Structure in Indonesian Companies from 2011 to 2022.

LITERATURE REVIEW

Capital Structure

A company's capital structure, according to Baker & Martin (2011), is the mix of debt and equity used to finance its operations, productive assets, and future growth. A company's capital structure, according to Ross (2015), is the particular mix of long-term debt and equity that is utilized to finance operations.

The introduction of capital structure theory marked a turning point in its evolution. They contend that the debt and equity composition of a business has no bearing on its value. Their stance is that in the absence of bankruptcy-related taxation and expenses, a business should strive to achieve a harmonious equilibrium between the merits and demerits of debt (CFA Institute, 2023; Modigliani & Miller, 1963).

The maximization of debt utilization, as proposed by Modigliani and Miller (1963) is subject to criticism from Scott (1977). In accordance with the trade-off theory, which he explains, the optimal method of financing is through a combination of equity and debt. As per Scott (1977), the trade-off theory considers various factors including interest expense deductions, corporate income tax, and the costs associated with financial distress, specifically bankruptcy costs. Businesses must make a trade-off between utilizing debt for investment and operational financing and the associated risks and benefits. To attain financial efficiency and mitigate undesirable risks, organizations must therefore find a harmonious equilibrium in their utilization of debt as a funding source (Scott, 1977).

Then, in support of the trade-off theory, Myers (1984) asserts that an organization determines the optimal objective leverage ratio. The determination of the intended leverage ratio involves a comparison between the tax benefits of interest earnings and the costs of bankruptcy, as stated by Myers (1984).

The Pecking Order Theory, initially introduced by Donaldson (1961), was later renamed the "pecking order theory" by Myers (1984). The term "pecking order" originates from the hypothesis' explanation of why organizations prefer particular funding sources to others. As their primary source of operational funding, businesses prefer retained earnings or internal financing, which consists of funds generated by the company's operations, according to the theory. As per the findings of Myers and Majluf (1984), if a business requires external funding, it will issue the most secure securities initially, such as bonds, followed by additional securities (e.g., convertible bonds), and ultimately, as an absolute last resort, new equity.

Jensen and Meckling (1979) propose the concept of agency relationship arises when a principal (owner) engages the service of an agent (manager), to conduct the company's activities. In agency theory, the principal refers to shareholders, while the agent represents the management responsible for running the company, entrusted by the shareholders to maximize shareholder wealth (Jensen & Meckling, 1979). The basic premise of agency theory is that managers tend to act in self-serving ways and may have goals that differ from those of the owners, which, if not adequately monitored, can lead them to take actions that are detrimental to the maximization of owner wealth (Jensen & Meckling, 1979). To guarantee that managers are genuinely followed to the interests of shareholders, shareholders must incur costs known as agency costs. Reducing the conflict between agents and principals can be achieved by aligning their interests, thus reducing agency costs. Capital structure can serve as a supervisory tool to discourage opportunistic behavior by managers and encourage them to work in line with corporate goals, ultimately leading to improved company performance, particularly in firms with weaker corporate governance practices.

Signaling theory is a concept in economics and finance that suggests individuals or organizations with access to more information can use their actions to signal their quality to others (Ross, 1977). This theory is particularly relevant in the context of corporate finance, where a company's capital structure and dividend policy can serve as a signal of its quality to outside parties. The theory posits that companies with higher-quality assets or prospects may choose to take on more debt or increase their dividend payouts to signal their confidence in their ability to meet their financial obligations and future prospects. Conversely, companies with lower-quality assets or prospects may choose to take on less debt or decrease their dividend payouts to avoid signaling their weakness.

Two variables are utilized to assess the capital structure in this study. By dividing total liabilities by total assets, one can obtain the debt to assets ratio, or DAR (Chandra, 2014). The metric employed to estimate capital design is the Debt to Asset Ratio (DAR), as it offers valuable insight into the organization's capacity to effectively manage the debt that sustains its resources. Zafar et al. (2019) state that the calculation of the Debt-to-Equity Ratio (DER) entails dividing the aggregate value of debts by the aggregate value of equity (Zafar et al., 2019).

Determinants of Capital Structure

Profitability

Profitability is a metric that measures a company's capacity to make profit within a defined timeframe (Darmawan & Sukartha, 2014). Profitability, as defined by Utami (2017), refers to the capacity of a company to make profit using its working capital (Utami, 2017). Profitability refers to the relationship between the revenue earned and the costs incurred by a firm when using its current assets and resources (Gitman and Zutter, 2015).

This study defines profitability as the return on assets (ROA) according to the research conducted by Chandra (2014), Shil et al. (2019), and Saarani and Shahadan (2013). This ratio is utilized to gauge the profitability of the company's investments by considering all of its assets. The calculation involves dividing the net profit by the total assets. Greater profitability is desirable as it signifies the company's capacity to create profit from its assets.

Zhang (2010) research investigates the determinants of the capital structure of 220 small and medium-sized enterprises (SMEs) in the British manufacturing industry. Zhang (2010) found that profitability has a favorable impact on capital structure. During the period of 2005 to 2009, Lim (2012) conducted a study on the factors that influence the capital structure of thirty-one Chinese financial service companies listed on the A-share market. In this study, Lim discovered a negative link between leverage and profitability. Gharaibeh and Al-Tahat (2020) conducted a study on the factors that influence the capital structure of 45 service organizations in Jordan. The study conducted by Gharaibeh and AL-Tahat (2020) found that profitability has a substantial negative effect on leverage. In a study conducted by Albayrak (2019), structural equation modeling (SEM) was employed to analyze a sample of 203 companies listed on the Istanbul Stock Exchange (ISE). Albayrak (2019) found that profitability had a detrimental effect on leverage.

According to the pecking order theory proposed by Myers and Majluf (1984), there is a negative relationship between profitability and debt. Consequently, organizations that achieve a good return on their investments typically have a lower reliance on debt. A high rate of return allows a corporation to internally finance a majority of its financial requirements. Greater profitability signifies that the organization is also generating larger earnings. Put simply, the company may utilize its own income to fund the majority of its requirements without depending on external loans. As the level of equity rises, the debt ratio typically declines, providing that the quantity of debt remains relatively stable. This study uses the profitability ratio known as ROA (return on assets) to assess the company's capacity to make profits with its total assets. Profitability is assessed using the criteria established (Chandra, 2014). Thus, the proposed hypotheses are:

H_{1a}: Profitability has a negative and significant effect on DAR.
H_{1b}: Profitability has a negative and significant effect on DER.

Growth Opportunity

The term "growth opportunity" refers to the possibility for a company's investment to expand or increase in value (Filsaraei et al., 2016). Business growth opportunities pertain to the prospects for a corporation to substantially augment its net income, assets, and sales (Funk, 2022).

According to the pecking order theory proposed by Myers (1984), companies prefer utilizing their own profits (internal funds) rather than taking on debt. Debt is only considered when internal funds are inadequate. Nevertheless, organizations that have significant potential for growth may want supplementary capital to fuel their expansion initiatives. Consequently, a firm with greater growth prospects will be more inclined to increase its borrowing.

Zafar et al. (2019) conducted research which discovered that Growth Opportunity has a favorable and substantial influence on capital structure. This conclusion is further corroborated by Chandra's research in 2014. Nevertheless, the findings of this study contradict the capital structure of Small Medium Enterprises (SMEs) in Malaysia, namely the Enterprise 50 (E50) SMEs. The research conducted by Saarani and Shahadan (2013) discovered that growth opportunity had a detrimental effect on the capital structure. In a study conducted by Saif-Alyousfi et al. (2020), which examined 827 non-financial enterprises listed in the Malaysian stock market between 2008 and 2017, it was discovered that growth potential had a detrimental effect on the capital structure. Growth prospects are quantified by calculating the percentage change in Total Sales (Chandra, 2014). Growth opportunities are quantified by the market-to-book ratio, as indicated by the studies conducted by Gharaibeh & Al-Tahat (2020) and Zafar et al. (2019). Therefore, in model 2, the market-to-book ratio is employed (Gharaibeh & AL-Tahat, 2020; Zafar et al., 2019). Thus, the proposed hypotheses are:

H_{2a}: Growth opportunities have a positive and significant effect on DAR.
H_{2b}: Growth opportunities have a positive and significant effect on DER.

Tangibility

Tangibility, as defined by Alexiev (2018), refers to the extent to which physical components, such as the connection between services and tangible objects, have a dominant influence on the offering (Alexiev et al., 2018). According to Palliam et al. (2013), the level of tangibility of a company's assets is an important factor in defining its capital structure (Palliam et al., 2013).

Scott (1977) says in the trade-off theory, the capital structure decision of a corporation should take into account the risk of bankruptcy (Scott, 1977). In order to secure loans, a corporation must provide sufficient collateral, thus mitigating the possibility of bankruptcy (Gharaibeh & AL-Tahat, 2020). This implies that as tangibility increases, so does the level of debt. Put simply, tangibility has a favorable impact on the capital structure. Shah & Khan (2017) studies on non-financial enterprises listed on PSE Pakistan from 2005 to 2014. The research reveals that tangibility has a favorable impact on the capital structure of Pakistani non-financial firms (Shah & Khan, 2017). Shil et al. (2019) also discovered a positive impact through tangibility. The researchers analyzed the financial statements of companies in the pharmaceutical, textile, and banking industries listed on the Dhaka Stock Exchange (DSE) over the period of 2012 to 2016 (Shil et al., 2019).

According to the agency cost theory, asset tangibility has a detrimental impact on capital structure. This is because when a company has a high proportion of fixed assets used as collateral, there is less conflict between managers and shareholders. This is because managers do not have sufficient free cash to engage in business development. Asset tangibility in a corporation reduces the risk of insiders taking resources for themselves, and it is connected to the expenses of debt and financial funds (Prieto & Lee, 2019). Grossman and Hart (1982) suggest that corporations should raise their debt levels when they have limited collateral. This is beneficial for overseeing managerial operations. Consequently, the presence of tangibility has an adverse effect on the composition of capital. Zafar et al. (2019) discovered a similar detrimental impact in their study on the Asian emergent market (Zafar et al., 2019). The measurement of tangibility in this study is based on the ratio of total fixed assets to total assets, as defined by Chandra (2014). Thus, the proposed hypotheses are:

H_{3a}: Tangibility has a negative signicant effect on the DAR.
H_{3b}: Tangibility has a negative signicant effect on the DER.

Company Size

Corporation size refers to the magnitude of a corporation, which is determined by factors such as total assets, total sales, total earnings, tax expense, and other relevant indicators (Brigham & Houston, 2019). According to the trade-off theory, larger companies may prefer to use debt financing instead of equity financing in order to keep control. This preference is based on the benefits of diversification, reduced risk, and lesser vulnerability to bankruptcy that larger firms typically enjoy. Rajan and Zingales (1995) conducts research that reveals larger organizations possess a higher capacity to diversify their investments (Rajan & Zingales, 1995). This ability reduces their susceptibility to financial issues. Put simply, a company's financial fundamentals become more robust as its size increases.

As a corporation grows, its financial fundamentals improve. The robustness of these financial foundations leads to reduced financing expenses for the company. Reduced interest rates incentivize enterprises to increase their borrowing (Chandra, 2014). Therefore, the size of a corporation has a beneficial impact on its capital structure. This is consistent with the findings of Albayrak (2019), Shah and Khan (2017) as demonstrated in their respective research studies. The size of a company is determined by the natural logarithm (Ln) of its revenue (Chandra, 2014). Thus, the proposed hypotheses are:

H_{4a}: Company size has a positive and significant effect on the DAR.
H_{4b}: Company size has a positive and significant effect on the DER.

Dividend

The amount of a company's profits given to a shareholder is known as a dividend. Though some businesses also offer stock dividends, cash payouts are the most typical kind of dividend. Though they can also be paid out monthly or annually, dividends are normally paid out every quarter. The board of directors of the corporation decides on distributions and announces them in advance. For a number of reasons, including demonstrating their financial health and luring in new or existing investors, companies pay dividends (Amond, 2024).

Myers (1984) proposed the pecking order theory, which states that dividend policies are based on the expected cash flow and return on investment. (Chandra, 2014). It is advisable to keep the dividend payout at a minimal level. A too large dividend distribution diminishes the internal source of cash. This necessitates the corporation to increasingly depend on external sources of money, such as debt. Put simply, when the amount of dividends distributed by a corporation increases, the company's requirement for debt also increases (Chandra, 2014). Dividends have a favorable impact on the capital structure. Jiang and Jiranyakul (2013) corroborate the results of this investigation (Jiang & Jiranyakul, 2013). This study quantifies dividends by calculating the ratio of dividend per share to earnings per share. Dividends are quantified by dividing the dividend per share by the earnings per share (Chandra, 2014). Thus, the proposed hypotheses are:

H_{5a}: Dividend has a positive significant effect on the DAR.
H_{5b}: Dividend has a positive significant effect on the DER.

Liquidity

Liquidity pertains to the velocity and simplicity with which an asset can be transformed into cash (Ross, 2015). This study will assess liquidity by calculating the ratio of current assets to current liabilities, as discussed in the research conducted by Zafar et al. (2019), Saarani & Shahadan (2013) and Zafar at al. (2019). Kasmir (2014) defines the current ratio as a measure of a company's ability to swiftly and fully fulfill its short-term financial commitments when they are due for payment (Kasmir, 2014). Companies with a high current ratio demonstrate a substantial proportion of current assets in relation to current liabilities.

Scott (1977) proposed the trade-off theory, which states that liquidity has a favorable impact on the capital structure. According to Scott (1977), a company's strong liquidity indicates a higher capacity to acquire debt. The outcome aligns with research conducted by Pahuja and Sahi (2012). A study conducted in India analyzed the companies listed on the Bombay Stock Exchange from 2008 to 2010 and discovered that liquidity has a strong and favorable impact on the capital structure.

In contrast, according to Myers (1984), the pecking order theory asserts that enterprises with ample cash are inclined to decrease their reliance on debt. Companies that possess a substantial quantity of current assets typically have ample internal resources available for financing purposes. Thus, firms with ample liquidity are inclined to minimize their reliance on debt, indicating a negative correlation between liquidity and capital structure (Myers, 1984). Zafar et al. concurs with this assertion. The research conducted in Asian Emerging Market found that liquidity has a large and negative impact on capital structure (Zafar et al., 2019). The study done by Chaklader and Chawla (2016) analyzed data from firms listed in NSE CNX 500 for the period 2008-2015. The research also discovered a negative correlation between liquidity and capital structure (Chaklader & Chawla, 2016). Prieto and Lee (2019) examine the factors that influence the financial structure of major Korean corporations between 2010 and 2017. Based on their research, a negative association exists between leverage and liquidity. Prieto & Lee (2019) assert that leverage is a representation of capital structure. Liquidity will be assessed by calculating the ratio of current assets to current liabilities, as stated in (Chandra, 2014). Thus, the proposed hypotheses are:

H_{6a}: Liquidity has a negative significant effect on the DAR.
H_{6b}: Liquidity has a negative significant effect on the DER.

Business Risk

Business risk refers to the potential for financial loss or negative impact on the value of a company's equity that arises from its operational activities. In the business environment, risk pertains to the implementation of risk management, which entails evaluating all stages and activities within a corporation (Crovini et al., 2020). The capital structure of a firm has a substantial correlation with the business risk in the financial industry (Elkhal, 2019).

Based on the trade-off principle, organizations that employ higher levels of leverage are more prone to encountering financial issues (Tudose, 2012). Elevated levels of volatility amplify the business risk of the corporation. The escalation in company risk leads to an elevated cost of funds (Chandra, 2014). Companies are compelled to decrease their reliance on debt due to the increase in the cost of funds. Consequently, organizations with elevated business risk will reduce their reliance on loans. This suggests that business risk has a detrimental impact on the capital structure.

Zafar et al. (2019) provided support for this research by conducting a comparable analysis on the Asian Emerging Market. They found that there is a notable inverse correlation between business risk and capital structure. Gharaibeh and Al-Tahat (2020) conducted a study on 45 enterprises in Jordan from 2014 to 2018 and arrived at the same conclusion in their research. The study conducted by Gharaibeh and AL-Tahat (2020) revealed a noteworthy inverse correlation between business risk and capital structure. Business risk is quantified by calculating the ratio of NOPAT (Net Operating Profit After Tax) to capital, as stated by Chandra in 2014. Business risk is quantified by calculating the standard deviation of profitability, namely the return on assets (ROA), as indicated by the studies conducted by Alipour et al. (2015) and Zafar et al. (2019). Therefore, in model 2, the standard deviation of profitability (ROA) is utilized, as stated by Alipour et al. (2015) and Zafar et al. (2019). Thus, the proposed hypotheses are:

H_{7a}: Business risk has a negative significant effect on the DAR.
H_{7b}: Business risk has a negative significant effect on the DER.

RESEARCH METHOD

Data

The population for this study comprises all the companies that have been listed on the Indonesia Stock Exchange (IDX) from 2011 to 2022. The data spans quarterly periods from 2011 to 2022. Given that enterprises in the financial sector typically have large leverage, they are excluded. According to Fama & French (1992), high leverage in non-financial enterprises may be a sign of financial distress. The data is sourced from Capital IQ and Capital IQ Pro. Winsorization is applied to the data at a 1% level to mitigate bias (Glen, 2023).

Empirical Model

This study uses the empirical model from Chandra's (2014) study (Chandra, 2014), which is:

$$Yit = \beta_0 + \beta_1 PROF + \beta_2 GO + \beta_3 TANG + \beta_4 SIZE + \beta_5 DIV + \beta_6 LIQ + \beta_7 BR + \varepsilon$$

Where:

Y_{it} : Capital Structure, measure by two proxies. Debt to asset ratio (total debts/total assets), Debt to equity ratio (total debt/total equity).
PROF : Profitability, measure by EBIT/Total asset.
GO1 : Growth Opportunity, measure by percentage of change in total sales
TANG : Tangibility, fixed assets/total assets.
SIZE : Company Size, Ln(sales).
DIV : Dividend, dividend per share/earnings per share.
LIQ : Liquidity, current assets/current liabilities.
BR1 : Business Risk, NOPAT/Capital.

This study also tries to measure Growth Opportunity and Business Risk using other proxies.

GO2 : Growth Opportunity, measured by market to book ratio (market cap/book value equity) (Gharaibeh & AL-Tahat, 2020; Zafar et al., 2019).
BR2 : Business Risk, measure by standard deviation of return on assets (Alipour et al., 2015; Zafar et al., 2019).

RESULTS AND DISCUSSIONS

Descriptive Statistics

Descriptive statistics are used to summarize the variables. Descriptive statistics primarily include the maximum, minimum, mean, and standard deviation values. The table below displays the statistical descriptive data for each variable in this study:

Table 1. Descriptive Statistic

Variable	OBS	Mean	Std. dev.	Median	Min	Max
DAR	12,843	0.268	0.264	0.233	0	1.991
DER	12,843	1.291	2.157	0.866	-7.173	14.812
PROF	12,843	0.011	0.026	0.008	-0.109	0.115
GO1	12,843	0.023	0.088	0.012	-0.236	0.475
GO2	12,843	0.004	0.010	0.001	-0.006	0.070
TANG	12,843	0.538	0.232	0.551	0.047	0.963
SIZE	12,843	11.079	2.151	11.124	5.316	15.585
DIV	12,843	0.329	0.117	0	0	0.687
LIQ	12,843	2.357	2.869	1.505	0.094	22.561
BR1	12,843	0.027	0.041	0.019	-0.070	0.251
BR2	12,843	2.492	3.538	1.359	0.016	24.570

Based on the table 4.1 variable DAR has an average above the median, which is 0.2689744, meaning that many companies have debt to asset ratio values above the median. The standard deviation, which is 0.264435, indicates that the debt-to-equity ratio of each company does not vary too widely, although there is a reasonable degree of variation.

Variable DER has an average above the median, which is 1.291138, indicating that many companies have DER values above the median. This suggests that many companies have a higher debt to equity ratio compared to the median. The high standard deviation, which is 2.15741, implies that companies in this study have a significant variation in their debt-to-equity ratios, ranging from small to large, as evident from the difference between the minimum and maximum values.

Variable PROF has an average above the median, which is 0.0116691, indicating that many companies have profitability values above the median. This shows that, on average, companies have higher profitability compared to the median. The standard deviation, which is 0.0269685, suggests that profitability values for each company do not vary significantly.

Variable GO1 has an average above the median, which is 0.0231597, meaning that, on average, companies have Growth Opportunity values above the median. The standard deviation, which is 0.0886189, suggests that Growth Opportunity values for each company do not vary significantly. Variable GO 2 has an average above the median, which is 0.0048662, meaning that, on average, companies have Growth Opportunity values above the median. The standard deviation, which is 0.0103186, suggests that Growth Opportunity values for each company do not vary significantly.

Variable TANG has an average below the median, which is 0.5381011, indicating that most companies in the sample have a lower proportion of physical assets compared to non-physical or intangible assets. The standard deviation, with a value of 0.2321684, shows that the tangibility values for each company do not vary significantly, although there is some degree of variation.

Variable SIZE has an average below the median, which is 11.07952, meaning that most companies in the sample are smaller in size compared to the median. The standard deviation, which is relatively high at 2.151762, suggests that companies in Indonesia have varying sizes, ranging from small to large, as evident from the difference between the minimum and maximum values.

Variable DIV has an average above the median, which is 0.329683, indicating that, on average, companies distribute dividends above the median. The standard deviation, with a value of 0.1176043, shows that dividend distributions for each company do not vary significantly, although there is some degree of variation.

Variable LIQ has an average below the median, which is 2.357387, indicating that most companies in the sample have lower liquidity levels compared to the median. The standard deviation is 2.869918, indicating a significant variation in liquidity values among the companies in the sample.

Variable BR1 has an average above the median, which is 0.0270434 implies that most companies have business risk above the median. The standard deviation, with a value of 0.0419864, shows that business risk for each company does not vary significantly, although there is some degree of variation. Variable BR 2 has an average above the median, which is 2.49283 implies that most companies have business risk above the median. The relatively high standard deviation of 3.538471 indicates significant variation in business risk levels among the companies in the sample.

Random Forest

The initial stages of conducting a random forest regression involve selecting mtry and ntree. Mtry is determined using the formula from Breiman (2001) which is the square root of the number of independent variables (Breiman, 2001).

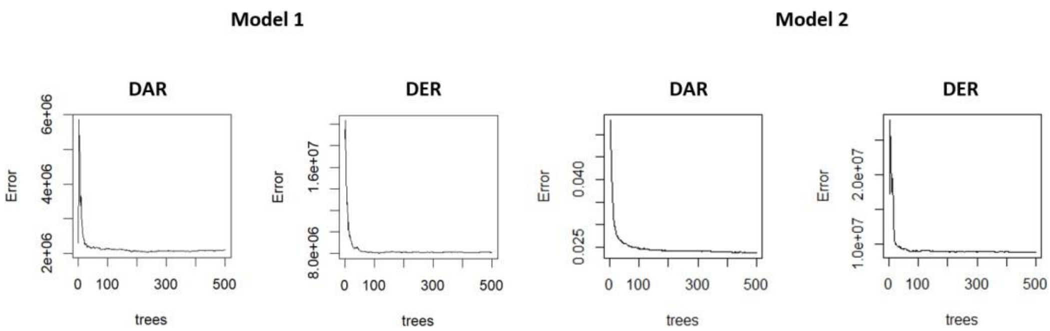

Figure 1. Out of Bag Error

The figure above shows that the larger the ntree, the smaller the change in out of bag error. The ntree used in this study is 500, as seen from the graph above indicating that the error is stabilized at 500.

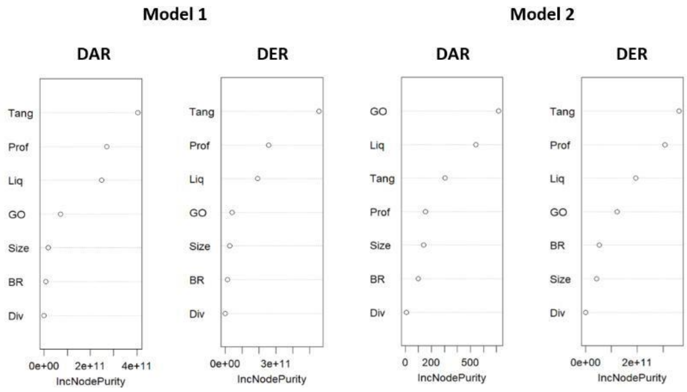

Figure 2. Variable Importance

The variable importance is one of the outputs of the random forest. This variable importance shows which variables are influential in capital structure. IncNodePurity measures the increase in model error when a specific variable undergoes random permutation or shuffling (Breiman, 2001).

Based on figure 2, the variable importance plot of DAR and DER for model 1 has the same result. Figure above showed the order of the most important variable is tangibility, followed by profitability, liquidity, growth opportunity, size, business risk and dividend. For model 2, there is a difference in the order of variable importance between DAR and DER. In DAR, the most important variable order is growth opportunity, followed by liquidity, tangibility, profitability, size, business risk and dividend. While in DER the most important variable order is tangibility, followed by profitability, liquidity, growth opportunity, size, business risk and dividend.

Results and Empirical Interpretation

The chosen panel model regression is Fixed Effect. Before conducting panel regression, all problems with diagnostic test requirements, such as heteroscedasticity, autocorrelation, or cross-sectional dependence test, has been addressed by using Driscoll-Kraay Standard Errors regression.

Table 2. Panel Data Regression

Independent Variables	Model 1				Model 2			
	DAR		DER		DAR		DER	
	Coef,	P	Coef,	P	Coef,	P	Coef,	P
PROF	-0.934	0.000	-3.822	0.016	-0.838	0.000	-7.771	0.000
GO1	0.006	0.704	0.737	0.000				
GO2					-1.533	0.001	107.8 276	0.000
TANG	0.088	0.000	-0.148	0.389	0.080	0.000	0.444	0.004
SIZE	0.004	0.124	0.137	0.000	0.004	0.178	0.129	0.000
DIV	-0.033	0.005	-0.168	0.085	-0.034	0.005	-0.154	0.033
LIQ	-0.009	0.000	-0.062	0.000	-0.008	0.000	-0.041	0.000
BR1	0.051	0.620	-3.225	0.001				
BR2					0.004	0.000	-0.019	0.039
Constant	0.209	0.000	0.105	0.732	0.214	0.000	0.664	0.046

R-Squared	0.0638	0.0169	0.0604	0.1619
Prob>F	0.000	0.000	0.000	0.000

The panel data regression results used DAR as dependent variable and DER to compare the result from both models. Both DAR and DER are used to measure the capital structure of the company. There are differences in the regression results between Model 1 and Model 2. This discrepancy arises because the variables growth opportunities and business risk are measured differently in each model. Model 2 employs measures based on the most recent research compared to Model 1. Furthermore, Model 2 exhibits a higher coefficient of determination than Model 1. Model 2 also has more significant variables compared to model 1. Growth opportunities and business risk, which are initially insignificant on DAR in model 1, become significant in model 2. Likewise, tangibility and dividends, which are insignificant on DER in model 1, become significant in model 2. Therefore model 2 is used in the empirical interpretation.

There are discrepancies in the regression results, particularly in relation to the significance level of the effect, as indicated by varying p values. The coefficient of determination demonstrates the extent to which independent variables affect the capital structure of the company, indicating the explanatory strength of the model. The coefficient of determination for the DER model is 0.1619. The coefficient of determination for the DAR model is 0.0604, which is rather low. The disparity in influence can be attributed to the greater number of significant independent variables in the DER model compared to the DAR model. It has been established that size has an impact on DER, but it does not affect Dar. The probability of the F value is 0.000 for each model, indicating that in both models, at least one variable is significant. The Prob F value can also serve as a modeling test, indicating statistical significance when it is below 0.05. The research model that establishes the relationship between the independent variable and the dependent variable is deemed satisfactory. However, it is essential to examine the impact of each variable on profitability to gain a comprehensive understanding of how each independent variable can influence the company's capital structure.

The profitability variable has a strong negative impact on both the DAR and the DER in the two models, suggesting that profitability plays a crucial role in determining the company's capital structure. These coefficient values indicate that Profitability has a greater impact on the Debt-to-Equity Ratio than on the Debt to Asset Ratio. Thus, there is support for both H1a and H1b. This finding is also consistent with research carried out by Gharaibeh & AL-Tahat (2020), Saarani & Shahadan (2013), Shah & Khan (2017), and Zafar et al. (2019) (Gharaibeh & AL-Tahat, 2020; Saarani & Shahadan, 2013; Shah & Khan, 2017; Zafar, at al., 2019). Based on the variable importance analysis in Random Forest, profitability is ranked fourth in DAR and second in DER, highlighting its substantial impact on capital structure.

Indonesian companies that are listed on the IDX and are more financially lucrative generally have reduced levels of debt in their capital structures. According to the Pecking Order Theory, corporations prioritize the utilization of internal money as their primary source of financing for investment projects. When there is not enough money available from within the company, they rely on borrowing money, and issuing shares of stock is seen as the final option (Myers, 1984). The negative link between profitability and capital structure provides evidence for this argument. Profitable organizations create higher levels of internal money, hence decreasing their dependence on external finance, particularly debt. Put simply, when organizations become more profitable, they are less inclined to rely on borrowing money to finance their operations. This aligns with the Pecking Order Theory's principle of prioritizing different sources of funding. Gharaibeh and AL-Tahat (2020) found that the profitability coefficients for Jordanian service sector enterprises were statistically significant and negative, which provides support for the pecking order theory (Gharaibeh & AL-Tahat, 2020). Zafar et al. (2019) found that companies in 16 Asian countries also endorse the pecking order theory, which suggests a negative correlation between profitability and leverage. Nevertheless, the findings of Chandra's (2014) study on property and real estate sector companies listed on the IDX between 2010 and 2013 contradict this outcome (Chandra, 2014).

Managers might prioritize the optimal utilization of created income for company expansion instead of pursuing external finance alternatives. This is consistent with the theory's assertion that organizations prioritize internal funds as their main source of funding if those funds are accessible. This follows a hierarchy where internal funds are preferred over debt or equity financing. Hence, managers should contemplate utilizing current profits strategically to finance growth endeavors instead of predominantly depending on external borrowing.

The impact of Growth Opportunity (GO) on Debt Asset Ratio (DAR) is negative and statistically significant, whereas it is positive and statistically significant on Debt Equity Ratio (DER). Emphasizing the significance of Growth Opportunity on the company's financial structure. The coefficient value indicates that Growth Opportunity has a distinct impact on DAR and DER. Thus, H2b is corroborated whereas H2a is refuted. This finding contradicts the findings of Chandra's (2014) study on property and real estate businesses listed on the IDX between 2010 and 2013. This discrepancy arises due to the fact that past research has been focused on one specific industry and has been conducted at distinct time periods. Based on the variable importance analysis in Random Forest, growth prospects are ranked first in DAR and fourth in DER, demonstrating their strong relevance to the capital structure.

According to the DER (Debt-Equity Ratio), there is a clear and meaningful correlation between business growth and capital structure. High-growth enterprises tend to rely more on external borrowing. This observation is consistent with the concepts of the Pecking order theory (Myers & Majluf, 1984). During a period of accelerated company growth, there is an increased demand for money to facilitate expansion. Major corporations have greater prospects for expansion, so fostering investment in ventures with higher levels of risk, but eventually heightening the risk of insolvency (Albayrak, 2019). Consistent with Signaling theory, organizations that possess superior assets or prospects may opt to increase their debt levels as a means of demonstrating their belief in their capacity to fulfill their financial commitments (Spence, 1973).

According to the Trade-off Theory, companies that experience stronger growth may choose to increase their leverage or debt to fund their expansion strategies. As a firm expands, it may necessitate greater capital to allocate towards new initiatives, acquisitions, or expansions (Scott, 1977). Hence, companies undergoing rapid growth may opt to employ more external funding, typically in the form of debt, to bolster their expansion efforts. This supports the findings of Budhidharma et al. (2023) who conducted research on the financial difficulties faced by Indonesian enterprises from 2005 to 2020. Companies use debt to facilitate their expansion, but they must exercise caution to prevent overreliance on borrowing (Budhidharma et al., 2023). Regarding DAR, it is seen that when the firm grows, there is a notable adverse effect on the capital structure. This suggests that the company prefers to use its own cash rather than depending on external sources. This is consistent with the study conducted by Alipour et al. (2015) on non-financial companies listed on the Tehran Stock Exchange in Iran. A corporation that is experiencing rapid growth is often assumed to have a potentially enough amount of internal capital available (Alipour et al., 2015).

Companies undergoing rapid growth may opt to utilize additional external sources of capital to accommodate their expansion strategies. Fast-growing companies frequently have more capital requirements to sustain their growth, and utilizing external funding, such as borrowing, might be a feasible approach. Managers must exercise caution and employ a strategic approach while using debt financing, considering the accompanying risks. It is advisable for them to evaluate the most advantageous combination of internal funds and external borrowing, ensuring that it is in line with their growth and financial well-being.

The presence of tangibility has a strong positive impact on both DAR (Debt Asset Ratio) and DER (Debt Equity Ratio), suggesting that the influence of tangibility on the capital structure of the company is significant. These coefficient values indicate that tangibility has a greater impact on the Debt-to-Equity Ratio than on the Debt to Asset Ratio. Based on these findings, there is no evidence to establish H3a and H3b. Nevertheless, these discoveries are consistent with the trade-off paradigm. These findings are consistent with the investigations undertaken by Agyei et al. (2020), Gharaibeh (2015), M'ng et al. (2017), and Nasimi (2016). Based on the variable importance analysis in Random Forest, tangibility is ranked third in DAR and first in DER, suggesting that it has a strong influence on capital structure.

The correlation between the degree of tangibility and both DAR and DER suggest that Indonesian enterprises with greater tangibility tend to incorporate debt as a substantial element in their capital structure. They might utilize their tangible assets as collateral to obtain loans at reduced interest rates. This is consistent with the Trade-Off Theory, which posits that corporations strive to strike an equilibrium between the advantages of debt, such as tax deductibility, and the drawbacks and uncertainties associated with debt (Scott., 1977). Tangibility refers to the degree to which a corporation holds tangible assets that may be utilized as collateral to secure loans. Within the framework of the Trade-Off Theory, having greater physical assets can be used as collateral to secure loans (Agyei et al., 2020). This allows the organization to have more flexibility in using debt as an extra means of financing. The study conducted by M'ng et al. (2017) discovered a substantial negative correlation between tangibility and leverage in both Malaysian and Singaporean listed companies.

Nevertheless, Chandra's (2014) research on property and real estate sector companies on the IDX over the period of 2010-2013 diverges from this. The reason for this is that the previous research was exclusively carried out inside the property and real estate industry, which frequently received money prior to the completion of their projects. This method diminishes their debt and hence exerts a detrimental influence.

Managers should strategically use tangible assets to obtain advantageous terms for debt borrowing. It is recommended that companies effectively utilize their physical assets, which may allow them to borrow money at reduced rates. Managers should be cautious to find a balance, taking into account the possible hazards that come with large levels of debt. This observation highlights the importance of careful management of assets to maximize financial leverage while limiting the dangers involved.

The variable of business Size is only statistically significant in relation to DER, suggesting that the impact of business size on the capital structure of the company is not as powerful as the other variables. From the above coefficient values, it can be inferred that Company Size has a more pronounced impact on the DER in comparison to the DAR. Thus, H4b is corroborated while H4a is not substantiated. This finding is consistent with the study conducted by Chandra (2014), which confirms that the size of a company has a large and favorable impact on its capital structure (Chandra, 2014). This study provides additional evidence that aligns with the findings of Albayrak (2019), M'ng et al. (2017), and Zafar et al. (2019) (Albayrak, 2019; M'ng et al., 2017; Zafar et al., 2019). According to the variable importance analysis in Random Forest, size is ranked fifth in DAR (Decision Average

Reduction) and sixth in DER (Decision Error Reduction). This indicates that the size of the company is comparatively less important when compared to other characteristics.

This outcome is consistent with the trade-off theory. According to the trade-off principle, larger organizations are expected to have greater diversification, lower risk, and reduced susceptibility to bankruptcy (Scott, 1977). M'ng et al. (2017) propose a substantial and favorable correlation between the size of a company and its level of leverage in Malaysia, Singapore, and Thailand. Furthermore, the size of a corporation is regarded as a proxy for the unequal access to information that exists between investors and management in the capital market. The reason for this is that large firms are perceived to have greater transparency and higher levels of leverage, enabling them to issue more debt at a reduced cost (M'ng et al., 2017). There is a notable positive correlation between the size of companies listed on the Istanbul Stock Exchange and their level of leverage. Companies may choose debt financing instead of equity financing to maintain control. Consequently, it is expected that larger organizations would possess a greater degree of leverage, as stated by Albayrak (2019).

Managers should be aware that larger organizations often depend more on using debt to finance their capital structures (Chandra, 2014). This suggests that larger companies may have an advantage in obtaining loans because of their size, assets, or reputation. As a result, they can maintain a well-balanced combination of debt and equity to maximize their financial leverage. Therefore, managers of larger organizations should evaluate their financial requirements and utilize their size advantage to get suitable levels of debt, considering the related expenses and potential hazards.

The dividend variable has a statistically significant negative impact on both the DAR and DER models, suggesting that dividends play a crucial role in shaping the company's capital structure. As dividends increase, the company's reliance on external sources such as debt and equity for financing its operations or investments decreases. Thus, there is no support for H5a and H5b. According to the variable importance in Random Forest, the dividend is ranked eighth in both DAR and DER. This implies that the dividend holds less significance in this scenario.

Companies that distribute dividends use this action as a means of advertising their financial strength, primarily to demonstrate their success, in line with signaling theory. As a result, they typically favor self-financing to showcase their stability and financial strength (Ross, 1977). These findings align with the research undertaken by Hapsari et al. (2016), which discovered a substantial negative correlation between dividends and DER in manufacturing businesses listed in IDX during the period of 2010-2013 (Hapsari et al., 2016).

The Liquidity variable has a strong negative impact on the DAR (Debt Asset Ratio) and the DER (Debt Equity Ratio), suggesting that profitability plays a crucial role in determining the company's capital structure. From the above coefficient values, it can be inferred that Liquidity has a more pronounced impact on the DER in comparison to the DAR. Thus, there is support for both H6a and H6b. This outcome aligns with the pecking order idea. This study aligns with the research undertaken by Agyei et al. (2020), Prieto and Lee (2019), Zafar et al. (2019), Chaklader and Chawla (2016) (Agyei et al., 2020; Chaklader & Chawla, 2016; Prieto & Lee, 2019; Zafar et al., 2019). According to the variable importance in Random Forest, liquidity is ranked second in DAR (Debt Asset Ratio) and third in DER (Debt Equity Ratio), suggesting that it has a considerable impact on capital structure.

This outcome aligns with the pecking order idea. Companies that have a significant amount of readily available cash or assets that can be easily converted into cash are more likely to decrease their reliance on borrowing money (Myers, 1984). A corporation with robust liquidity would give higher importance to internal funding over external funding sources, aligning with the pecking order theory (Chaklader & Chawla, 2016). Companies with lower levels of liquidity in their equity tend to employ higher levels of debt in their capital structures. The reason for this is because organizations with high liquidity can generate greater amounts of cash inflows for their business operations, which enables them to rely less on debt in their overall capital structure. In contrast, companies with limited liquidity may depend more on external funding and adopt a more assertive capital structure, as they may be required to issue shares in order to finance their investments. The findings of this study align with the research conducted by Prieto & Lee (2019) on Korean enterprises and Zafar et al. (2019) on 16 Asian countries (Prieto & Lee, 2019; Zafar et al., 2019). Nevertheless, this outcome contradicts the findings of Chandra's research completed in 2014 (Chandra, 2014).

Managers might infer from this that organizations with higher liquidity generally have a lower ratio of debt to capital structure. Therefore, managers should contemplate employing cash created from within the organization and ensuring sufficient liquidity to decrease dependence on external funding, particularly debt. They may prioritize the optimization of internal resources to finance investments and operational requirements, which could potentially decrease financial susceptibility and reliance on external financing sources.

The Business Risk variable has a strong positive impact on the DAR and a strong negative impact on the DER. From the above coefficient values, it can be inferred that business risk exerts a more pronounced impact on the DER in comparison to the DAR. Thus, H6a is not substantiated, whereas H6b is substantiated. This finding contradicts the findings of a study undertaken by Chandra (2014) on firms in the property and real estate industry listed on the IDX between 2010 and 2013. According to the variable importance in Random Forest, business risk is ranked sixth in DAR and fifth in DER. This implies that the significance of business risk is significantly lower in comparison to other variables.

The inverse correlation between Business Risk and DER is consistent with the trade-off paradigm. Trade-off theory suggests that organizations with greater business risk typically choose to have lower amounts of debt in their capital structures. An elevated business risk increases the likelihood of failing to repay debt, which in turn increases the expenses related to financial hardship (Zafar et al., 2019). Businesses encountering increased risks may benefit from exercising prudence while acquiring debt, thus assuring a more balanced and less leveraged financial position. This may entail implementing financial strategies that favor equity financing or maintaining conservative debt levels to offset the potential negative consequences of heightened risk.

The summary of this study is derived from the findings of profitability, liquidity, tangibility, and dividends, as these factors demonstrate strong resilience in both the DAR and DER models. The findings indicate that enterprises with strong profitability and liquidity are likely to have a lower debt-to-assets ratio (DAR) and debt-to-equity ratio (DER). Conversely, firms with significant tangible assets tend to have greater DAR and DER. Conversely, the findings also indicate that companies that pay larger dividends generally have lower levels of debt. Hence, it is crucial for organizations to uphold a favorable level of profit as it is intricately linked to sales (Budhidharma et al., 2023). The findings also indicate that companies that distribute dividends tend to possess a lower level of debt in their capital structure. Nevertheless, companies must exercise caution when issuing dividends to ensure the preservation of their liquidity. This entails ensuring that companies can meet their short-term and long-term obligations.

CONCLUSION

This study investigates the factors that influence the capital structure of non-financial public businesses listed on the Indonesia Stock Exchange between 2011 and 2022. This study examines the impact of many characteristics specific to a company, such as profitability, growth potential, tangibility, size, dividend policy, liquidity, and business risk, on the decisions made by public listed firms regarding their capital structure.

Regression analysis is performed within the random forest framework to identify the significant variables in the model. According to the random forest results, there is a discrepancy in the ranking of variable importance between DAR and DER. The variable order in DAR is determined by the importance of each factor. Growth opportunity is the most significant, followed by liquidity, tangibility, profitability, size, business risk, and dividend. In DER analysis, the variable order of importance is as follows: tangibility, profitability, liquidity, growth opportunity, scale, business risk, and dividend.

The research summary is based on the findings related to profitability, liquidity, tangibility, and dividends, which indicate strong performance in both the DAR and DER models. The results suggest that having high profitability and liquidity is linked to a lower debt-to-assets ratio (DAR) and debt-to-equity ratio (DER), whereas having substantial tangible assets relates to higher levels of both ratios. Additionally, the analysis indicates that companies that provide bigger dividends generally have lower levels of debt. Therefore, maintaining a strong level of profitability is essential as it is closely tied to sales. Moreover, corporations that distribute dividends typically exhibit a lower level of debt in their overall financial framework. However, it is important to use prudence while distributing dividends to protect the company's liquidity and ensure that both short-term and long-term obligations can be met. The research findings offer significant guidance for both investors and the public. Their emphasis lies on the significance of directing attention towards financially resilient companies characterized by sustained profitability, strong liquidity, and substantial assets. These traits are found to be associated with reduced levels of debt ratios in companies.

Given the persistently poor coefficient determinations in this investigation, there remain numerous unaccounted-for components. Thus, I present a few recommendations for forthcoming research endeavors. Future research should investigate the company's capital structure policies by including additional variables, such as external influences like macroeconomic conditions. To enhance future research, it is recommended to prolong the study duration to facilitate a more thorough examination. This extension will allow for enough time to collect a large amount of data, do thorough analyses, and test more advanced models. It is advisable to concentrate on a particular industry while analyzing capital structure. By adopting this strategic approach, a more comprehensive examination of the distinct financial attributes within the selected sector will be facilitated, leading to an enhanced comprehension of how industry-specific elements, such as levels of risk, regulatory frameworks, and market dynamics, impact firms' choices about financing.

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DO KEY OPINION LEADERS (KOL) MATTER IN DIGITALLY MARKETED BEAUTY PRODUCTS? THE IMPACT OF KOL ON TIKTOK

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ABSTRACT

In the era of digital marketing, the role of Key Opinion Leaders (KOL) has become critical to attract new customers. However, previous studies reveal inconsistent results. This study aims to investigate the influence of Key Opinion Leaders (KOL) on purchasing interest in cosmetics products. The study employs a descriptive quantitative method, using a survey questionnaire distributed to 200 respondents. The respondents have TikTok accounts and follow Key Opinion Leaders in the beauty sector on TikTok. The research employs a quantitative study with a survey questionnaire. Data was analyzed using SmartPLS 4 software. The study reveals interesting results. First, there is a positive influence of KOL Expertise on followers' buying interest. However, KOL Attractiveness and Trustworthiness do not have a positive influence on followers' buying interest. The research findings provide strategic implications for marketers and business owners who plan to optimize their digital marketing strategies by employing Key Opinion Leaders.

Keywords: Key Opinion Leader; Familiarity; Expertise; Trustworthiness; Buying Interest; TIKTOK

INTRODUCTION

The astonishing speed of development in digital technology has significantly changed many aspects of human life, including the change in consumer shopping behavior from brick-and-mortar shops to online shops in e-commerce platforms (Savila et al., 2019; Pasaribu et al., 2022). At the start of January 2023, there were 160.7 million users of social media in Indonesia with 60.4% being active social media users (Kemp, 2023). Kemp (2023) reported that the social media platform with the highest advertisement reach is YouTube with 65.3% of Indonesian active internet users. The second place goes to Facebook with 56.3% of active internet users in Indonesia. TikTok comes third with 51.6% advertisement reach, followed by Instagram in the fourth place with 41.25 advertisement reach.

To reach consumers who have gone digital, many businesses adopt creative marketing strategies. They embrace social media as their new marketing ground to capture a bigger market share (Kotler & Keller, 2016). To grab a huge number of customers on social media platforms, businesses can collaborate with influencers online, such as celebrities, endorsers, brand ambassadors, and key opinion leaders (AJ Marketing, 2023). Using Key Opinion Leaders is gaining more acceptance by businesses as a new avenue of digital marketing (Zhang et al., 2023).

Previous studies revealed various results on the role of KOL on purchase intention. Sofiyanti and Novita (2020) found that Key Opinion Leaders' attractiveness does not influence purchase intention. However, all attributes of Key Opinion Leaders (attractiveness, trustworthiness, and credibility) positively influence purchase intention (Tartaraj et al., 2024). Osei-Frimpong et al. (2019) also found all characteristics of KOL influence purchase intention.

Existing previous studies have indeed offered valuable contributions to the role of influencers and KOL on consumer behavior. Still, there are a few gaps that require more investigation to get deeper insights into the influence of KOLs on consumer behavior. First, this study addresses the role of KOL on purchase intention on a specific social media platform, that is TikTok. Next, this study aims to address a specific range of products: beauty products. By considering these gaps, this study aims to investigate the characteristics of KOLs (attractiveness, trustworthiness, and expertise) on the purchase intention of beauty products on the TikTok social media platform.

LITERATURE REVIEW

TikTok

TikTok is a social media platform that has recently entered Indonesia's social media industry. It offers a unique video-based format that has successfully attracted a massive number of users (Tartaraj et al., 2024). TikTok has also been recognized by scholars as a powerful digital marketing tool (Zhang et al., 2023; Nurjannah & Surianto, 2022). TikTok was also found to have engaging content provided by TikTok influencers (Indrawati et al., 2023). Despite all the positive marketing features of TikTok, this social media platform still ranks third in advertising effectiveness in Indonesia. Thus, this study will further investigate the impact of KOLs in TikTok on the purchase intention of their followers.

Key Opinion Leader (KOL)

KOL refers to a group of people with a significant influence on their followers in particular field (Godey et al., 2016; Wang et al., 2020). He and Jin (2022) define KOL as a minority of people having a big impact on consumers in the decision-making process, attitude, and behavior. KOL has three significant attributes: attractiveness, trustworthiness, and expertise (Xiong et al., 2021; Xu et al. 2020).

KOL Attractiveness

KOL *Attractiveness* refers to the level of attractiveness of a public figure or endorser. It is reflected in the physical appearance, posture, and voice of the KOL (Xiong et al, 2021; Xu et al., 2020; Ohanian, 1990).

KOL Trustworthiness

The trustworthiness characteristic of KOL is key in effectively promoting a certain product to consumers (Gupta et al., 2015). Xiong et al. (2021) and Xu et al. (2020) describe KOL Trustworthiness as the ability to be trusted and relied on by followers.

KOL Expertise.

KOL expertise refers to the knowledge, experience, and skills of the KOL (Xiong et al., 2021; Xu et al., 2020). The expertise of KOL should well correlate with the product or service endorsed (Putri & Patria, 2018).

Purchase Intention

Purchase intention is considered an effective tool to predict purchase decisions. It is defined as an individual inclination to buy a particular product or service (Liu, 2023; Zhou, 2013).

KOL Attractiveness and Purchase Intention

Attractiveness is an important factor in attracting people’s attention (Sundar et al., 2014). KOLs with attractive appearances are more likely to influence the purchase intention of their followers (Osei-Frimpong et al., 2019; Nan et al., 2022). Therefore, this study posits the following hypothesis:

H1: KOL attractiveness positively influences the purchase intention of their followers.

KOL Trustworthiness and Purchase Intention.

The high credibility of KOL as the source of purchase information positively corresponds with the desire of their followers to purchase a certain product or service (127). Trustworthiness is also found to have a positive link with purchase intention (Liu, 2023). Zhou (2013) demonstrates the significant influence of trust on purchase intention. The results of the previous studies led to the formulation of the following hypothesis.

H2: KOL trustworthiness positively influences the purchase intention of their followers.

KOL Expertise and Purchase Intention

KOL expertise has a big impact on successfully influencing followers’ purchase intention (25). Expertise of KOL influences the level of credibility as well as customers' purchase behavior (Schouten et al., 2020). Consumers have a stronger tendency to purchase a certain product endorsed by KOL with high expertise (Xiong et al., 2021). Accordingly, the following hypothesis for this study is formulated.

H3: KOL expertise positively influences the purchase intention of their followers.

The Research Model

The hypotheses formulated lead to the development of the following research model below (Figure 1), involving three independent variables (KOL attractiveness, KOL trustworthiness, and KOL Expertise, and one dependent variable (Purchase Intention). The model is replicated from the study conducted by Sofiyanti and Novita (2020).

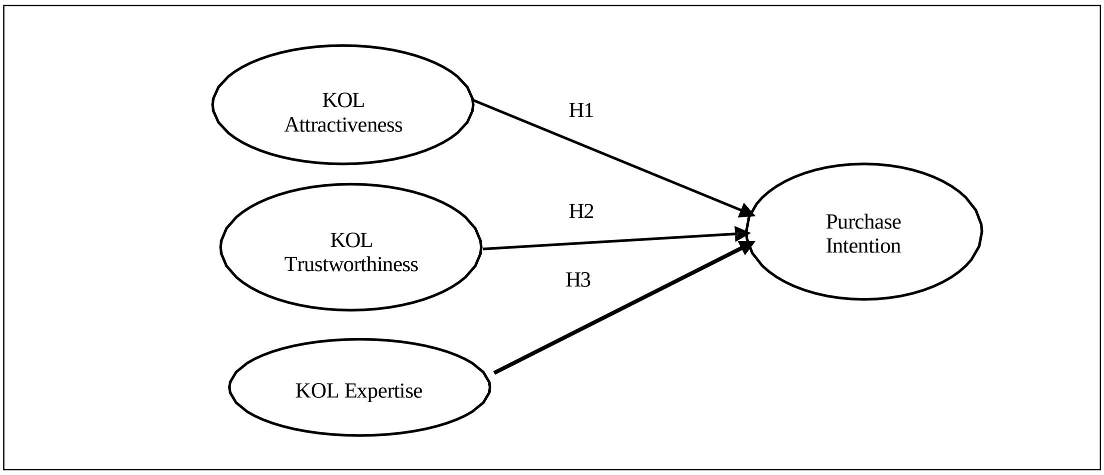

Figure 1. Research model developed for this study.
Adapted from: Sofiyanti & Novita (2020)

RESEARCH METHOD

This study is a descriptive quantitative study with a survey questionnaire as the data collection tool.

Population and Sample

The population of this study consists of all active TikTok users in Indonesia. The sample criteria are active TikTok users in Indonesia, following beauty key opinion leaders. The 200 respondents were recruited using the purposive, non-probability sampling method.

Data Collection and Data Analysis

Data collection was conducted using a survey questionnaire. This study employs Structural Equation Modelling (SEM) with a 5% level of significance, and a Critical Ratio (CR) of 1.96.

RESULTS AND DISCUSSIONS

Profile of Respondents

Female respondents (93% or 186 respondents) far exceed male respondents (7% or 14 respondents). The majority of respondents are between 24 - 30 years old (55% or 109 respondents), followed by those who are between 19-23 years old (24% or 48 respondents. Some respondents are above 30 years old (14% or 28 respondents), and the rest are between 15 to 18 years old (8% or 15 respondents). Most respondents (82% or 164 respondents) reside in Jakarta and its surrounding areas or JABODETABEK (Jakarta, Bogor, Depok Tangerang, and Bekasi). The remaining respondents live in other places outside JABODETABEK. Private and government employees dominate the occupation of the respondents (85% or 169 respondents). The remaining respondents are high school and university students (15% or 29 respondents) and others (1% or 2 respondents). The respondents mostly earn above the regional minimum wage monthly or between Rp. 5 million to Rp. 7 million (61% or 122 respondents). Those earning less than Rp. 5 million are 23% or 46 respondents. Some respondents earn more than Rp. 7 million (17% or 32 respondents).

Research Instrument and Measures

A survey questionnaire was used as the research instrument tool in this study. The scale measures for KOL Attractiveness, Trustworthiness, and Expertise were taken from Ohanian (1990) and Spry et al. (2011), and the measure for Purchase Intention was taken from Schiffman and Kanuk (2006). All indicators were measured using a five-point Likert scale, with 1 describing completely disagree, and 1 to 5 describing completely agree. The five-point Likert scale is used as it is faster to complete, and convenient to fit mobile device screens. It also gives neutral options. The measures of the constructs are presented in Table 1.

Table 1. Measures of constructs

No	Variable	Items	Source
1	KOL Attractive ness	1. I watch attractive content of influencers on TikTok. 2. I like the content created by influencers on TikTok. 3. I like the content created by attractive influencers on TikTok. 4. I like the content created by elegant influencers on TikTok. 5. I like the content created by sexy influencers on TikTok.	Ohanian (1990) and Spry et al. (2011)
2	KOL Trustwo rthiness	1. I trust the reviews presented by beauty influencers. 2. I feel that beauty influencers are honest in delivering their message. 3. I feel that the messages presented by beauty influencers are reliable. 4. I feel that the messages presented by beauty influencers are true. 5. I trust the products used by beauty influencers.	Ohanian (1990) and Spry et al. (2011)

3	KOL Expertise	1. I follow the tutorial presented by beauty influencers. 2. I assess the message presented by beauty influencers based on their experience using the products. 3. I understand the explanation given by beauty influencers. 4. I assess the message of beauty influencers based on their credible background. 5. I select beauty influencers based on their relevant skills.	Ohanian (1990) and Spry et al. (2011)
4	Purchase Intention	1. I am interested in finding more information about beauty products. 2. I am interested in buying beauty products soon. 3. I often watch reviews of beauty products before purchasing the products. 4. I have an interest in buying beauty products that I have never tried before. 5. I have the desire to buy beauty products based on reviews by beauty influencers.	Schiffman and Kanuk (2006)

Measurement Model

The measurement model provides Average Variance Extracted (AVE), Outer Loading, and Discriminant Validity (Hair et al., 2016). The AVE should be > 0.5. The outer loading should be > 0.6. Finally, the Discriminant Validity, which is the root of the correlation value of each variable, should be > the cross-squared correlation of the variable compared with other variables in the study.

Convergent Validity and Discriminant Validity

Table 2 gives the outputs of Convergent Validity and Table 3 shows the outputs of Discriminant Validity of this study.

Table 2. Convergent Validity

Variables	Indicator	Convergent Validity			
		Outer Loading (> 0.7) but (0.5 < x < 0.7) Acceptable	Results	AVE (> 0.5)	Results
KOL Attractiveness (AT)	AT1	0.852	Valid	0.677	Valid
	AT2	0.850	Valid		
	AT3	0.869	Valid		
	AT4	0.834	Valid		
	AT5	0.698	Valid		
KOL Trustworthiness (TW)	TW1	0.849	Valid	0.642	Valid
	TW2	0.847	Valid		
	TW3	0.767	Valid		
	TW4	0.814	Valid		

	TW5	0.725	Valid		
KOL Expertise (EX)	EX1	0.765	Valid	0.617	Valid
	EX2	0.835	Valid		
	EX3	0.877	Valid		
	EX4	0.713	Valid		
	EX5	0.809	Valid		
Purchase Intention (PI)	PI1	0.849	Valid	0.643	Valid
	PI2	0.847	Valid		
	PI3	0.767	Valid		
	PI4	0.814	Valid		
	PI5	0.725	Valid		

Source: Processed Data of 200 respondents for this study (2023)

The results in Table 2 show that all indicators of all the variables in this study are valid. The next table (Table 3) shows the results of the Discriminant Validity test with cross loading values.

Table 3. Discriminant Validity with HTMT Values

	AT	**EX**	**MB**	**TW**
AT				
EXP	0.745			
MB	0.660	0.915		
TW	0.707	0.884	0.720	

Source: Processed Data of 200 respondents for this study (2023)

HTMT values should be > 0.9. Table 3 shows that most values are below 0.9, and there is one value that is slightly above 0.9 (still within the acceptable range). Thus, we can say that all indicators are reliable.

Composite Reliability

Table 4 shows the composite reliability test results, which are all above 0.70.

Tabel 4. Composite Reliability Actual Results

Variable	**Cronbach's Alpha (>0.70)**	**Composite Reliability (>0.70**	**Result**
AT	0.875	0.895	Reliable

TW	0.879	0.865	Reliable
EX	0.839	0.862	Reliable
PI	0.899	0.847	Reliable
Customer Loyalty	0.810	0.913	Reliable

Source: Processed Data of 200 respondents for this study (2023)

All variables in Table 4 are confirmed to be reliable as the Cronbach Alpha and Composite Reliability values are > 0.7 (Hair et al., 2016). Therefore, the model is considered valid and reliable. The next structural model test can be conducted.

Structural Model of Inner Model

First, the Multicollinearity test is measured using the Variance Inflation Factor or VIF coefficients. The threshold value of the structural VIF coefficients should not be higher than 4.0 (Garson, 2016). Table 5 below shows that the VIF values are all less than 4. Thus, we can conclude there is no multicollinearity issue, or the model is free from common bias.

Table 5. Multicollinearity test

Variables	Variance InflationFactor
Attractiveness ➔ Purchase Intention	2.108
Trustworthiness ➔ Purchase Intention	2.601
Expertise ➔ Purchase Intention	2.895

Source: Processed Data of 200 respondents for this study (2023)

The multicollinearity test outputs of this study as provided in Table 5 show no collinearity issues.

Coefficient of Determination (R2)

The Coefficient of determination or R-square statistically shows the power of the independent variables to explain the changes in the dependent variable.

Table 6. Coefficient of Determination (R2)

Variable	R square	Results
Purchase Intention	0.619	Moderate to Strong

Source: Processed Data of 200 respondents for this study (2023)

The value of R2 for purchase intention falls within the range of moderate to strong (0.619). This means that Purchase Intention can be explained by its independent variables (Attractiveness, Trustworthiness, and Expertise) by 61.9%. The rest is explained by other variables outside this existing study.

Q-Square (Q^2)

Table 7 below provides the Q^2 value of this research. Q^2 shows predictive relevance value.

Table 7. Hasil Pengujian Q-square (Q^2)

Variable	*Q-square* (Q^2)	Remarks
Minat Beli	0,373	has *predictive relevance*

Source: Processed Data of 200 respondents for this study (2023)

The model of this study has predictive relevance > 0, which means the model can be recommended to be replicated.

Hypothesis Test

The hypothesis test uses a p-value, t-test, and original sample. The p-value should be < 0,05 to be considered significant, and the t-test should be > 1.645 to be considered supported (Hair et al., 2016). The test is a one-tailed test, which indicates the direction of the influence. The test also employs a 0.05 significance level, with 500 bootstrap samples testing, processed using Smart PLS 4.

Table 8. Hypothesis Test

Hypothesis	Original Sample	T-Statistics (>1.645)	P-Value (<0.05)	Hypothesis Analysis
H1: KOL Attractiveness positively influences the purchase intention of beauty products on TikTok	0,101	1.242	0.215	Not Supported
H2: KOL Trustworthiness positively influences the purchase intention of beauty products on TikTok	0,022	8.722	0,00	Supported
H3: KOL Expertise positively influences the purchase intention of beauty products on TikTok	0,695	0.247	0.805	Not Supported

Source: Processed Data of 200 respondents for this study (2023)

Table 8 displays the hypothesis test results of this study. The results show that KOL trustworthiness positively influences the followers' purchase intention of beauty products (H2 is supported). The t-statistics, -value, and original sample of H2 meet the criteria of being significant and supported. However, KOL attractiveness and Expertise do not positively influence the purchase intention of beauty products on TikTok (H1 and H3 are not supported.

The respondents of this study are dominated by female respondents (93% or 186 respondents). The majority of them are from the younger generations between 24-30 years old (55% or 109 respondents). They mostly reside in Jakarta and surrounding cities (82% or 164 respondents). The respondents are dominated by working people (85% or 169 respondents). Their monthly income is mostly above the minimum wage of between Rp. 5 million to Rp. 7 million (61% or 122 respondents).

The study shows that all the independent variables (Attractiveness, Trustworthiness, and Expertise of KOL) have moderate to strong positive influence on the followers' purchase intention of beauty products on TikTok, with an R-square of 0.619. This means that when the independent variables change by 1 point, they will change the purchase intention by 61.9%. Other variables not included in this study also influence purchase intention. The study also revealed the existence of predictive relevance of the model used in this study, with the Q-square value of 0.373 (above 0). This means that the model is quite robust to be replicated in future studies.

Next, the result of the hypothesis test points out that the Trustworthiness of KOL positively influences the purchase intention of beauty products in TikTok. A study by Sofiyanti and Novita (2020) also reveals trustworthiness as a critical factor that can trigger the purchase intention of followers. Another study also unveils the importance of KOL trustworthiness in the Instagram platform (Ridha et al., 2018). When followers trust the message delivered by a KOL, they tend to purchase the product endorsed by the KOL. A similar finding also confirms the key role of KOL trustworthiness in endorsing a product that can motivate followers to purchase it (Gupta et al., 2015).

In this study, the hypothesis test shows that KOL attractiveness does not positively influence the purchase intention of followers to buy beauty products on TikTok. This is because most respondents in this study are working people with monthly earnings above the minimum wage level. They evaluate what they plan to buy by getting information more than just physical attraction. The same results are revealed in the other previous studies conducted by Sofiyanti & Novita (2020). They also found that when followers trust the KOL, they are most likely to purchase the items endorsed by the KOL. However, a different result was confirmed by Ridha et al. (2018) that revealed followers tend to agree with the message delivered by physically attractive KOLs.

This study also finds that the expertise of KOL does not positively influence the purchase intention of followers to buy endorsed beauty products. Followers in this study tend to base their evaluation on the level of trust they put on the KOL, rather than on their expertise. This is probably due to the short video content on TikTok. Followers have limited time to watch the message presented for them to understand it well. Therefore, they rely on the credibility of the KOL. An opposing result is presented by other previous studies (Sofiyanti & Novita, 2020; Ridha et al., 2018; Ul Hassan and Jami, 2014; and Ohanian, 1990). This is probably because these previous studies used other social media platforms (Instagram and Facebook) which allow longer video content.

CONCLUSION

This study's goal is to analyze the influence of KOL attractiveness, trustworthiness, and expertise on the followers' purchase intention of beauty products on TikTok. The study, involving 200 respondents, supports one hypothesis (H2): Trustworthiness positively influences the purchase intention of beauty products on TikTok. Thus, this study underscores the critical role of the trustworthiness of KOL in beauty products to influence their followers to purchase the endorsed beauty products on TikTok. Thus, KOLs of beauty products are recommended to develop trustworthiness characteristics. They can do this by providing transparency in their content. They should openly share their genuine intention behind creating the content. They should also be open about their affiliation to a certain product, brand, or institution. They need to tell their followers their honest opinion (the pluses and minuses) of the endorsed products or brands. Another recommendation for KOL is to actively engage their audience in all content creations. They need to positively respond to comments, questions, and feedback for improvement. Finally, KOLs are recommended to be consistent in their attitude towards a certain issue to gain the trust of their followers. For businesses, it is recommended to find relevant KOLs to endorse or review their products with trustworthiness criteria. If the business involves selling eco-friendly beauty products, business owners and top management need to find KOL that consistently supports eco-friendly programs.

This study is only limited to examining three independent variables (Attractiveness, Trustworthiness, and Expertise of KOL) and one dependent variable (Purchase Intention). The R-square results confirmed that there are other variables not included in this study that may influence purchase intention. Therefore, future researchers are recommended to include digital marketing-related variables other than KOL that may influence the purchase intention of a bigger number of customers, such as AI-generated content, User-generated content, or AI-enhanced KOL.

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INDIVIDUAL WORK PERFORMANCE OF MILLENNIAL EMPLOYEES IN TERMS OF SERVANT LEADERSHIP PERCEPTION

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ABSTRACT

This research investigates how servant leadership impacts the job performance of millennial staff members at UKRIDA Hospital directly. Additionally, it delves into the traits of servant leadership exhibited by leaders and evaluates the job performance of millennial employees at UKRIDA Hospital. A sample using purposive sampling technic from 174 millennial employees at UKRIDA Hospital was collected. Established measurement tools, including the Servant Leadership Questionnaire (SLQ) and Individual Work Performance Questionnaire (IWPQ), were employed. The characteristics of the participants were analyzed using Statistical Package for Social Science (SPSS). Hypotheses were tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). Servant leadership significantly and positively impacts the individual work performance of millennial employees in the hospital setting. Hospitals should cultivate an environment that embraces all facets of servant leadership to enhance the job performance of millennial employees.

Keywords: Health Care Sector; Hospital Management; Millennial; Individual Work Performance; Servant Leadership

INTRODUCTION

In recent times, there has been a noticeable shift in the demographic makeup of the healthcare workforce, with an increasing number of millennials choosing careers in hospitals and medical settings. Predictions suggest that within the next five years, millennials will make up more than 60% of the entire healthcare workforce (Zawawi & Nasrudin, 2017). Born between 1982 and 2004, this generation comes with unique expectations, values, and preferences regarding work environments and leadership styles (Karashchuk et al., 2020). This changing landscape presents several challenges for organizations, including the need to effectively attract and retain millennial employees, navigate the complexities of a workforce comprising multiple generations, and skillfully manage evolving dynamics among employees. Since healthcare provision heavily relies on human interactions, the behaviors and actions of employees play a significant role in organizational performance (Gordon et al., 2018; Ying & Cohen, 2018; Zawawi & Nasrudin, 2017).

Understanding how to maximize the work performance of millennial employees is crucial for improving the quality of healthcare services within hospital settings. Servant leadership emerges as a relevant leadership philosophy that prioritizes the well-being and growth of employees as a core principle. This approach emphasizes qualities like humility, empathy, active listening, and a dedication to serving others, which align closely with the values of the millennial generation (Eva et al., 2019). Studies suggest that embracing servant leadership positively influences hospital performance by boosting job satisfaction and decreasing turnover rates (Lu et al., 2019). Furthermore, servant leadership has been linked to alleviating job burnout (Ma et al., 2021) and reducing turnover intentions (Omanwar & Agrawal, 2022), while also promoting innovative work behaviors and improving overall job performance (Kül & Sönmez, 2021).

This inquiry carries substantial significance for multiple reasons. Firstly, hospitals depend on a broad spectrum of professionals, including nurses, administrative staff, and technologists, a considerable portion of whom are millennials. Their efforts directly impact patient care and the overall effectiveness of the hospital. Therefore, delving into how servant leadership principles affect their job performance, motivation, and engagement is crucial.

Additionally, the healthcare sector undergoes constant evolution due to advancements in medical technology, changing patient expectations, and the demand for a patient-centered approach. Servant leadership has the potential to cultivate the adaptability, collaboration, and patient-centric mindset necessary in this dynamic landscape. As a result, it can significantly impact the performance of millennial employees in providing healthcare services.

Moreover, the growing demand for healthcare services, driven by demographic shifts and the need for innovative care delivery models, emphasizes the importance and relevance of examining how servant leadership influences the job performance of millennial employees in hospitals.

This study seeks to contribute to the existing knowledge base by examining the implementation of servant leadership in hospital settings and its impact on the work performance of millennial staff. It aims to explore how servant leadership principles can enhance the performance of millennial employees within hospital environments. Through this investigation, the research aims to provide valuable insights for hospital administrators, healthcare leaders, and policymakers. These insights can empower them to create work environments that support the well-being and professional growth of millennial employees, while simultaneously ensuring the delivery of high-quality patient care.

However, a more thorough investigation is needed to fully understand the relationship between servant leadership and individual work performance, especially among millennial employees in hospital settings.

In summary, the purpose of this research is to answer the following questions:

1. Does the factorial structure of the servant leadership be supported in the hospital context?
2. Does the factorial structure of the individual work performance be supported in the hospital context?
3. To what extent does leadership style affect the work performance of millennial employees significantly in the hospital context?

To address the research questions, a research framework was developed. The findings of this study are expected to aid human resource management in enhancing the effectiveness of work performance among millennial staff members.

LITERATURE REVIEW

The discussion on job performance has been diverse, covering different conceptual frameworks (Zawawi & Nasrudin, 2017). Fundamentally, individual work performance involves three primary dimensions: task performance, contextual performance, and counterproductive work behavior.

Task performance is intricately tied to the technical core of organizational functions (Higgins et al., 2017; Gabriel, 2016; Park et al., 2016; Wolf et al., 2015). It encompasses both direct tasks, such as patient treatment, and indirect duties, like nurse recruitment, which formally delineate an employee's role (White et al., 2015). This dimension is comprehensive, covering aspects such as task behavior, job-specific and non-job-specific tasks, role performance, technical activities, and action orientation (Brown et al., 2015; Heydari et al., 2015; Hamblin et al., 2015; Yuan & Zhong, 2014; Yun et al., 2014).

On the contrary, contextual performance involves interpersonal behavior, organizational citizenship behavior, extra role performance, and peer team interaction (Brown et al., 2015; Weigl et al., 2014; Estes, 2013). Lastly, counterproductive work behavior encompasses actions detrimental to organizational performance, such as off-task activities, unruliness, theft, and drug abuse, along with absenteeism and presenteeism (Beckman et al., 2012; Westbrook et al., 2011; Greenslade & Jimmieson, 2011; Barker & Nussbaum, 2011).

According to Krijgsheld (2022), the job performance of healthcare professionals can be influenced across three levels. At the macro-level, factors such as organizational structure, perceived support within the organization, and the prevailing organizational culture collectively affect job performance. A supportive and innovative environment can improve performance, while toxic work climates and abusive supervision may have adverse effects. Turnover among high-performing employees also negatively impacts organizational performance.

At the meso-level, aspects like managerial support, supervision, training initiatives, team dynamics, and social support play roles in influencing job performance. Employee-focused approaches and positive attitudes towards work and innovation contribute positively, whereas factors like abusive supervision, resource constraints, heavy workloads, dissatisfaction with colleagues, and burnout have negative implications.

On the micro-level, variables including work engagement, clarity of roles, autonomy, employee competencies and educational background, workload, multitasking, and personal traits such as openness to change, extraversion, enthusiasm, and creativity significantly affect job performance. Conversely, low emotional intelligence and Machiavellian tendencies have detrimental effects.

In summary, organizational governance, management or leadership styles, and individual skills and traits collectively contribute to either enhancing or diminishing employee performance, thereby impacting organizational effectiveness. Given the distinctive attributes of millennial employees, optimizing their performance is essential for improving the quality of healthcare services, particularly in hospital environments.

Servant leadership, which prioritizes employee well-being and development, aligns closely with the values of millennials (Eva et al., 2019). Despite criticisms regarding its practicality compared to transformational leadership, servant leadership has been acknowledged for its positive impact on organizational financial performance and productivity (Giolito et al., 2021).

Studies indicate that implementing servant leadership in hospitals results in various benefits, including increased job satisfaction, decreased turnover rates, alleviation of job burnout and turnover intentions, encouragement of innovative work behaviors, and enhancement of overall job performance (Lu et al., 2019; Ma et al., 2021; Omanwar & Agrawal, 2022; Kül & Sönmez, 2021). Therefore, hospitals and healthcare institutions stand to gain significantly from adopting servant leadership practices tailored to the preferences and needs of their millennial workforce.

Hypothesis Development

In this study, the dimensions of Servant Leadership as proposed by Liden et al. (2008) have been adopted, which include Emotional Healing, Creating Value for the Community, Conceptual Skills, Empowerment, Helping Subordinates Grow and Succeed, Putting

Subordinates First, and Behaving Ethically. Additionally, the dimensions of Individual Work Performance proposed by Koopmans et al. (2011) have been utilized, comprising Task Performance, Contextual Performance, and Counterproductive Work Behavior.

To summarize, this research establishes a framework in which servant leadership exhibits a direct positive association with individual work performance among millennial employees at UKRIDA Hospital. Therefore, the following hypotheses are proposed:

H 1: Servant leadership is positively associated with the work performance of the millennial employees individually in the hospital context.

In this study, the conceptual framework can be described as an illustration as follows (Figure 1):

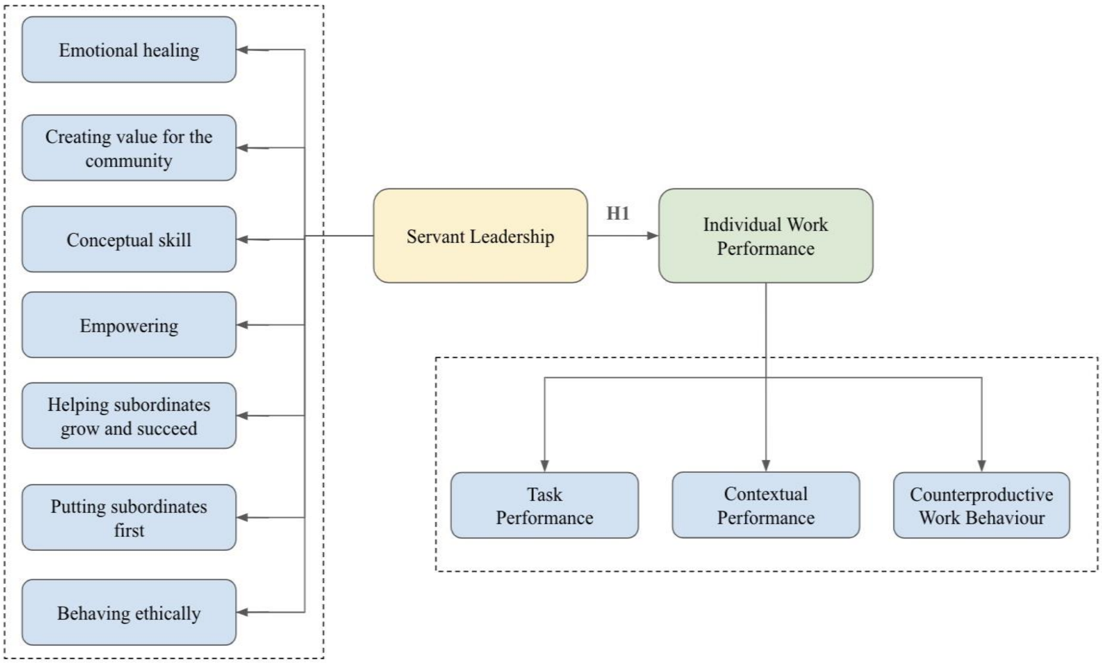

Figure 1. Conceptual Framework

RESEARCH METHOD

Research Design

This research utilized quantitative research methods employing a cross-sectional design. The study encompasses all variables included in the research model, with the dependent variable being individual work performance, constructed from task performance, contextual performance, and counterproductive work behavior. Conversely, the dimensions of servant leadership—emotional healing, creating value for the community, conceptual skill, empowerment, helping subordinates grow and succeed, putting subordinates first, and behaving ethically—act as the independent variables.

Settings and Participant

Data collection occurred in November 2023, using purposive sampling technic, resulting in the acquisition of 174 fully completed responses. This study focuses on a sample comprising millennial employees, defined as those born between 1982 and 2004, affiliated with UKRIDA

Hospital situated in West Jakarta, Indonesia. All millennial participants have been formally employed by UKRIDA Hospital for a minimum of 3 months. Participation was limited to full-time staff members functioning as medical professionals or hospital administrators, while excluding outsourced personnel, part-time employees, and trainees. Respondents volunteered for the study, assured of the confidentiality of their responses. Additionally, participants were informed of their autonomy to withdraw from the study at any stage.

Data Collection

Over a one-week period, data collection took place to ensure thorough inclusion of all units, taking into account that employees were fully occupied with their roles. Each employee involved was given a digital questionnaire, which took approximately 20 to 30 minutes to fill out. The study's aims and procedures were transparently communicated to the participants, and the questionnaires were provided in English. Additionally, a cover page accompanied each questionnaire, clarifying the voluntary aspect of participation and reassuring participants of the researchers' dedication to safeguarding the confidentiality of their answers. Before participating, written informed consent was obtained from all individuals involved.

To measure the concepts under investigation, recognized instruments with established psychometric properties were employed. Servant leadership was evaluated using a 28-item scale developed by Liden et al. (2008), covering the seven behavioral dimensions: conceptualizing, emotional healing, prioritizing followers, facilitating followers' growth and success, ethical behavior, empowerment, and community value creation. Respondents used a 7-point Likert-type scale ranging from '(1) strongly disagree, (2) disagree somewhat, (3) disagree, (4) undecided, (5) agree somewhat, (6) agree, and (7) strongly agree' to rate each survey item. Aggregating scores across each dimension yielded insights into the perceived attributes of servant leadership among leaders, as perceived by millennial employees.

Work performance was measured using the Individual Work Performance Questionnaire (IWPQ), an 18-item scale. This self-report tool evaluates individual performance across three dimensions: Task Performance (TP), Contextual Performance (CP), and Counterproductive Work Behavior (CWB). Typically, completing the IWPQ requires only about 5 minutes. As a self-report instrument, the IWPQ offers several advantages in addressing current challenges in performance appraisal:

1. Facilitating performance appraisal across various job roles.
2. Offering a comprehensive assessment of individual work performance, allowing employees ample opportunities to observe their own behaviors.
3. Encouraging active engagement of employees in the performance appraisal process, thereby boosting their sense of responsibility.
4. Increasing employee satisfaction with the fairness of the scoring system through the utilization of self-reporting.

The Task and Contextual Performance dimensions utilize a 5-point Likert-type scale, with responses ranging from ‘(0) seldom, (1) sometimes, (2) regularly, (3) often, (4) always. Conversely, for Counterproductive Work Behavior, the response format ranges from ‘(0) never, (1) seldom, (2) sometimes, (3) regularly, (4) often’.

To derive subscale scores for the IWPQ, the scores of all items within each subscale are summed and then divided by the number of items in the subscale. Subscale scores range from 0 to 4, with higher scores indicating a greater magnitude of the respective dimension. The individual scores for each dimension aid in interpreting the CWB subscale and allow for comparison among the dimension scores. The total IWPQ score is determined using the formula: TP + CP + (4 - CWB). Average total scores range from 0 (low) to 12 (high). Please refer to Table 1 for the formula to calculate scores for each dimension in the IWPQ.

Table 1. Scoring of IWPQ Subscale

Dimension	Scoring Formula
Task performance	(Item 1+2+3+4+5)/5
Contextual Performance	(Item 6+7+8+9+10+11+12+13)/8
Counterproductive Work Behavior	(Item 14+15+16+17+18)/5

Data Analysis

The decision to utilize Partial Least Squares Structural Equation Modeling (PLS-SEM) was motivated by its ability to analyze intricate models in explanatory research. The conceptual framework employed in this study comprises fifteen components, representing a complex research model. Especially in explanatory models, the PLS-SEM method is favored for its flexibility and robustness (Hair et al., 2019). The analysis using PLS-SEM was carried out using SmartPLS™ version 4.0, selected for its comprehensive capabilities, including a bootstrapping menu for significance testing (Memon et al., 2021).

The PLS-SEM analysis entails two primary components: the measurement model and the structural model. Initially, the measurement model is developed to gauge the reliability and validity between indicators and their corresponding constructs within the model. The assessment of reliability involves evaluating indicator reliability (outer loading) and construct reliability (Cronbach's alpha and composite reliability), followed by the evaluation of construct validity (average variance extracted) and discriminant validity (heterotrait/monotrait ratio). Upon meeting these criteria, the analysis progresses to the structural model.

In the structural model, the significant relationships between each construct within the research model are investigated. This phase aims to uncover the underlying associations and pathways among the constructs, providing insight into the overall framework of the study.

Ethical Considerations

To evaluate potential risks associated with the proposed research approach, the researchers sought peer reviews from two lecturers in the Department of Hospital Administration at Universitas Pelita Harapan. Furthermore, the survey protocol received approval from the ethics committee of Pelita Harapan University in Tangerang. Approval from UKRIDA Hospital was also obtained to ensure compliance with institutional regulations.

In addition, to uphold ethical standards, informed consent forms were provided to participants. These forms detailed the objectives, methods, and rights of the participants, including assurances of data confidentiality. Prior to data collection, approval was secured from the hospital administration to proceed with the study.

RESULTS AND DISCUSSIONS

This research was conducted on 174 respondents who met the criteria in this study. The profile of the respondents who participated in the study is presented in the demographic profile (Table 2) as follows:

Table 2. Respondent demographic profiles

Demographic Variables		**Sample (n)**	**Percentage (%)**
Gender	Male	59	33,91
	Female	115	66,09
Education	Junior high school	1	0,57
	Senior high school	4	2,30
	Vocational high school	1	0,57
	Associate degree	72	41,38
	Diploma's degree	6	3,45
	Bachelor's degree	45	25,86
	Master's degree	5	2,87
	Professional's degree	39	22,41
	Specialist's degree	1	0,57
Years of Experience	Less than a year	53	30,46
	A year and more	121	69,54
Demographic Variables		Average Score	Scale
Servant leadership style of direct supervisor		18.92	0-28
Work performance of millennial employees		8.99	0-12

According to the demographic profile of the respondents, the majority were female (66.09%). Regarding educational qualifications, 41.38% held an associate degree, while others had varying levels of education, including junior high school (0.57%), senior high school (2.30%), vocational high school (0.57%), diploma (3.45%), bachelor's (45%), master's (2.87%), professional (22.41%), and specialist (0.57%). In terms of years of experience, most respondents had been working in UKRIDA Hospital for over a year (69.54%). The average score for servant leadership style among leaders at UKRIDA Hospital was 18.92 on a scale of 0 to 28, while the average score for individual work performance among millennial employees was 8.99 on a scale of 0 to 12.

The first step of this research involved an outer model analysis. Based on the results of outer loading (OL), several indicators that did not meet the set value limit of 0.708 were eliminated, while some indicators with values above 0.4 were considered for inclusion in the model. If all indicators surpassed 0.708, they were deemed reliable for measuring each research item. Subsequently, construct reliability was tested using Cronbach's alpha (CA) and composite reliability (CR). In this study, all indicator values exceeded 0.7 but did not exceed the upper limit of 0.95, indicating acceptable construct reliability (Table 3).

To ensure convergent validity, the average variance extracted (AVE) value was evaluated. All research constructs had an AVE value of at least 0.5, indicating that each construct could explain at least 50% of the variance items in the model.

Table 3. Reliability and validity analysis

Variable	Indicator	OL	CA	CR	AVE
SL	EH	.864	.938	.949	.731
	CVC	.873			
	CS	.899			
	E	.645			
	HSGS	.913			
	PSF	.858			
	BE	.903			
IWP	TP	.861	.803	.905	.827
	CP	.954			
	CWB	-.149			

OL: outer loadings; CA: Cronbach's alpha; CR: composite reliability; AVE: average variance extracted; SL: servant leadership; EH: emotional healing; CVC: create value for the community; CS: conceptual skill; E: empowering; HSGS: helping subordinates grow and succeed; PSF: putting subordinates first; BE: behaving ethically; IWP: individual work performance; TP: task performance; CP: contextual performance; CWB: counterproductive work behavior

To assess discriminant validity, the Heterotrait/Monotrait ratio (HT/MT) was utilized, as it is known to be more accurate in detecting discriminant problems. The results of the validity test in this study indicated that all constructs had a value of 0.176. Therefore, it was concluded that all indicators in this research model had been effectively discriminated against, enabling them to measure their respective constructs. Additionally, common method bias resulting from errors or biases in measurement methodology was evaluated using the inner variance inflation factor (VIF). The findings revealed that all constructs had an inner VIF value below 3 (1.000), suggesting that no common method bias issue was identified in this model.

The research model demonstrates that the R2 value for the individual work performance variable is 0.029, indicating that the variable can be explained by servant leadership by 2.9%. The results of hypothesis testing with the bootstrapping feature (Table 4) indicated that the proposed hypothesis was accepted (T statistics > 1.645, $p < 0.05$, and CI 5% and CI 95% following the direction of the hypotheses).

Table 4. Hypothesis test result

No	Hypothesis	SC	T-s	CI 5%	CI 95%	*p*-Values	Result
H1	SL → IWP	.171	2.233	0.110	0.130	0.013	Hypothesis supported

Sig. at $p \leq 0.05$; CI: confidence interval; T-s: T-statistics; SC: standardized coefficient; SL: servant leadership; IWP: individual work performance

The hypothesis test results reveal that all indicators of servant leadership endorse these traits within the hospital setting. While a subset of individual work performance indicators aligns with the measurement, counterproductive work behavior is identified as an invalid and unreliable indicator of individual work performance in this study. Nonetheless, the conclusion drawn is that servant leadership significantly and positively impacts individual work performance by approximately .171.

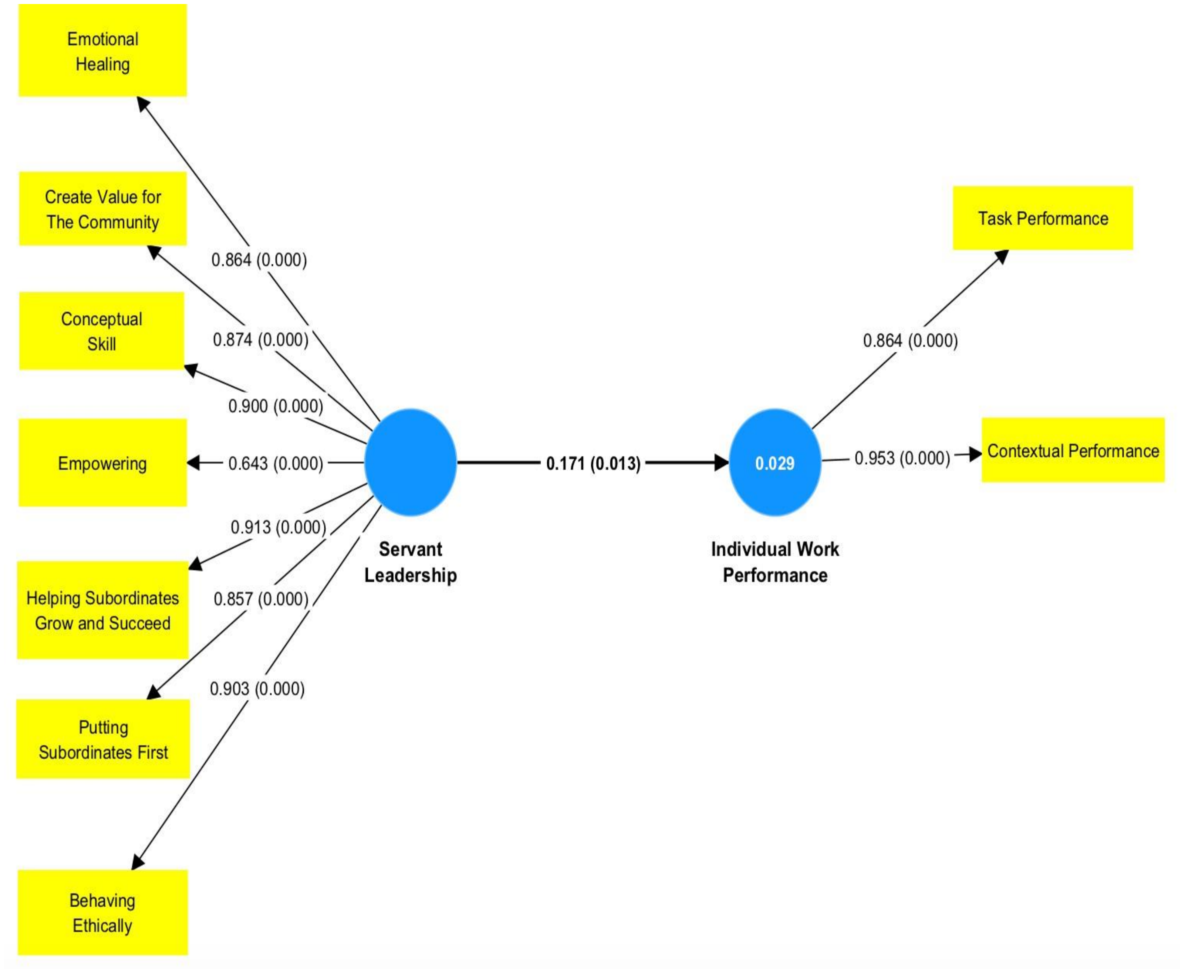

Figure 2. Result model

This study explored explanatory pathways to analyze how servant leadership influences the individual work performance of millennial employees in hospital settings. The results indicate that servant leadership positively impacts the individual work performance of millennial employees. These findings hold significance, especially considering the limited research available on the relationship between leadership styles and worker performance (Choudhary et al., 2013 & Aiken et al., 2021).

Servant leadership is recognized as a leadership model that cultivates a collaborative and empowering atmosphere, prioritizing the well-being and advancement of team members. At its core, this approach revolves around the belief that by placing the needs of others first, leaders can effectively motivate and guide their subordinates toward realizing their full potential. Serving as mentors, servant leaders invest their time and effort in understanding the unique strengths and aspirations of each team member. Through fostering open communication and offering steadfast support, they establish a culture that esteems personal growth and accomplishment. This comprehensive approach to leadership not only enhances organizational performance but also fosters a sense of purpose and satisfaction among team members, thereby fostering a sustainable and flourishing work environment (Liden et al., 2008).

This study has embraced the dimensions of Servant Leadership as delineated by Liden et al. (2008), which are expounded upon as follows:

1. Conceptual Skills: These skills represent a leader's adeptness in organizational awareness and the implementation of role clarification processes to tackle challenges encountered by subordinates and organizations in fulfilling their missions and organizational objectives (Liden et al., 2008). Servant leaders are expected to possess a broad conceptual understanding to advance the missions and visions of both individuals and organizations. Notably, the capacity to generate insights and foster an atmosphere of creative and innovative thinking is closely associated with enhancing organizational outcomes (Salleh et al., 2021).
2. Empowerment: This entails delegating autonomy to subordinates in identifying problems and making decisions in problem-solving endeavors (Liden et al., 2008). Servant leadership recognizes the intrinsic capabilities of subordinates, encompassing the acknowledgment of individual talents and rights (Salleh et al., 2021).
3. Helping Subordinates Grow and Succeed: This component elucidates authentic concerns that contribute to optimizing subordinate self-development by providing support, encouragement, and guidance (Liden et al., 2008). Servant leaders assert that each individual possesses abilities beyond their role as workers, and it is the responsibility of Servant Leaders to explore the added value in unleashing and developing potential from the personal and professional facets of subordinates within the organization (Salleh et al., 2021).
4. Prioritizing Subordinates: This dimension underscores the servant leader's disposition to verbally communicate and demonstrate the precedence of subordinates, particularly those under direct supervision (Liden et al., 2008). Such an approach instills enthusiasm among subordinates, motivating them to undertake assigned tasks with efficiency and creativity (Salleh et al., 2021).
5. Demonstrating Ethical Behavior: Ethical conduct entails how servant leaders engage openly, fairly, and authentically with subordinates (Liden et al., 2008). Leaders who uphold ethical standards serve as exemplars for subordinates, nurturing a positive societal perception and bolstering the organizational social identity (Salleh et al., 2021).
6. Emotional Healing: This dimension concerns a leader's attentiveness to the psychological well-being of subordinates, incorporating an empathetic element that underpins effective listening. Servant leaders are required to undergo a process of emotional self-recovery before engaging with subordinates. Their ability to rebound and foster strong connections with subordinates establishes a platform for seeking advice on both professional and personal matters. This aspect of emotional recovery aligns with understanding subordinate issues from a more objective, third-party perspective (Salleh et al., 2021).
7. Creating Value for the Community: This dimension involves leaders who are mindful and authentic in mobilizing and engaging the community within an organization (Liden et al., 2008). Community-building initiatives encompass fostering collaboration and commitment through effective communication channels. Additionally, collective cooperation contributes to resilience in the face of challenges and obstacles (Salleh et al., 2021).

The study demonstrates the applicability of the factorial structure of servant leadership within the hospital context. However, contrasting results emerge regarding the factorial structure of individual work performance assessment. This discrepancy may stem from the possibility that the questions in the Individual Work Performance Questionnaire (IWPQ) lack sensitivity to capture reflective measurement among respondents. Additionally, it is unclear how a transition from answering "regularly" to "often" can be achieved and what implications such a change entails, such as in maintaining work results. This suggests that the questions in the IWPQ scales may lack discriminative ability (Koopmans et al., 2014). Furthermore, bias is presumed to arise due to uncertainty in truthfully answering questions, particularly regarding counterproductive work behavior.

In conclusion, the findings of this study align with previous research indicating that servant leadership enhances organizational financial performance (Giolito et al., 2021) and productivity (Laub, 2018). Moreover, studies suggest that implementing servant leadership positively impacts hospital performance by increasing job satisfaction and reducing turnover rates (Lu et al., 2019). Additionally, research indicates that servant leadership contributes to mitigating job burnout (Ma et al., 2021) and turnover intentions (Omanwar & Agrawal, 2022), while also fostering innovative work behaviors and improving overall job performance (Kül & Sönmez, 2021).

Limitations And Suggestions for Future Research

The review outlined in this paper has several limitations that deserve recognition. Firstly, although the minimum required sample size was met, it is advisable to incorporate a larger sample size that is more representative of the population. Doing so would enhance the generalizability of the findings and bolster the statistical power of the study.

Secondly, work performance is a multifaceted construct, characterized in various ways and encompassing numerous related dimensions. The narrow focus on specific dimensions of work performance may overlook other significant aspects that could impact overall job performance.

Despite these limitations, the findings from this review offer valuable insights and lay the groundwork for further research on work performance within healthcare settings. Future studies could explore additional dimensions of work performance and consider larger sample sizes to deepen our understanding of the factors influencing job performance among healthcare professionals.

CONCLUSION

In summary, servant leadership emerges as a compelling leadership strategy within hospital environments, particularly concerning the management of millennial employees. This leadership approach, marked by its resonance with millennial values, focus on collaboration, prioritization of employee development, enhancement of job satisfaction, and encouragement of adaptability, not only meets the unique requirements of millennial healthcare professionals but also significantly contributes to improved work performance and overall organizational success in the challenging and vital field of healthcare.

Hospital management ought to recognize the potential benefits of adopting a servant leadership approach to elevate millennial employee performance and should strategically incorporate this leadership style into their organizational culture. Several notable implications emerge:

1. Instituting training and developmental schemes designed to educate present and prospective hospital leaders about the principles and methodologies of servant leadership. These programs should furnish managers with the requisite competencies for adeptly guiding and nurturing millennial staff members.

2. Formulating recruitment and retention tactics that underscore the hospital's dedication to servant leadership. This encompasses enticing millennial healthcare professionals who value a collaborative and values-driven workplace environment, as well as ensuring that servant leadership ideals are ingrained in retention endeavors to inspire skilled millennial employees to persist and progress within the institution.
3. Updating performance assessment standards to incorporate qualitative elements like teamwork, collaboration, and mentorship, in accordance with the principles of servant leadership. Furthermore, implementing 360-degree feedback systems can offer a thorough evaluation of leadership efficacy, concentrating on its influence on team cohesion and employee contentment.
4. Nurturing an organizational ethos that prioritizes open communication, empathy, and a collective commitment to patient well-being. Establishing avenues for ongoing feedback and discourse between leaders and staff cultivates an environment of trust and openness.
5. Introducing wellness initiatives that cater to the physical and mental well-being of employees and prioritize endeavors aimed at fostering a harmonious work-life equilibrium. Acknowledging the distinct challenges and aspirations of millennial staff members in this aspect is paramount.
6. Fostering a culture of innovation by offering resources and backing for staff members to innovate and actualize novel concepts. Acknowledging and commending initiatives that enhance ongoing enhancements in healthcare methodologies reinforces the principles of servant leadership, emphasizing adaptability and ingenuity.

By embracing and integrating servant leadership principles throughout various aspects of hospital management, organizations can establish an environment that not only draws in and retains millennial talent but also amplifies overall employee performance and satisfaction within the crucial healthcare sector.

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APPLICATION OF LEADERSHIP STYLES IN DIGITAL HEALTHCARE SYSTEMS

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ABSTRACT

Leadership will always change according to the times, including leading in digital era. Leadership is the art of inviting and moving other people to work to achieve goals. This research aims to analyze the relationship between transformational leadership and LMX theory that provide valuable frameworks for leadership in the digitalization era by promoting adaptability, innovation, employee engagement, collaboration, and the development of strong interpersonal relationships in a technologically driven work environment. The qualitative approach is used utilizing the databases Semantic Scholar, Google Scholar and PubMed. There is a strong relationship between traits (intelligence, personality, integrity) and leadership. Digital era is an era where society is centered on systems that are integrated online in solving social problems and balancing economic growth. In this digital era, healthcare leaders need to improve their tech savvy skill so they can guide their organizations in adopting and leveraging these technologies. They need to be more proactive, be innovative and dynamic, and set a good example in order to bring the organization up ahead. To improve the quality of digital health services, effective leadership is required.

Keywords: Leadership; Leadership Style; Digital Era; Healthcare Quality; Traits

INTRODUCTION

Transformation is bound to occur in any sector and how that change occurs is of course that change occurs along with changes or revolutions over time. If we are currently booming or the term Industrial Revolution 4.0 is becoming popular, in the country of cherry blossoms this term has been replaced by a new term that is being introduced, namely Society 5.0. This new digital era, where the process of globalization and evolution is running very quickly, for example the Internet of Things (IoT) and Artificial Intelligence (AI), are causing substantial changes in society’s surroundings and values. This era is also called the age of challenging uncertainty (VUCA era) because there are many changes and complex needs growing in this era, and it is very critical that we fully utilize the Information and Communication Technology (ICT) in various sectors considering that in this era uncertainty arises due to technological evolution. which is very fast (Fukuyama, 2018). Technology will help in every element of human life including in the healthcare industry. This sector has been impacted by the COVID-19 pandemic, new technological advancements, and the change in the approach of patients and medical staff to the treatment process. The internet, digital technology, and their relationships to new medicines and best practices for better health management processes are all part of the digital transformation of healthcare (Stoumpos at al., 2023).

The characteristics of society will change with this technology. This is because many things are experiencing disruption in the economic, education, socio-cultural and health sectors. To implement disruptive technology, organizations may need to inaugurate a viable digital learning culture. Health information technology (HIT) encompasses any clinical information system utilized for providing care or facilitating the real-time dissemination of health-related information. The adoption of HIT entails the stages of development, implementation, integration, ongoing utilization, and iterative enhancement of the system to guarantee seamless and continuous service delivery (Alanazi, 2022). It certainly requires a leader who can adjust and adapt to the changes that occur and they need to be knowledgeable with digital technology connected to healthcare systems.

Facing the digitalization transformation, leaders must have basic factors of personality, transformation leadership, inspire others and be role models. Many studies have developed among researchers about the basic factors of personality. These factors are neuroticism, extraversion (surgency), openness (intellect), agreeableness, and conscientiousness (dependability) (Goldberg, 1990). In general, (Judge at al., 2022) a robust correlation exists between the Big Five personality traits and effective leadership. According to (Mumford et al., 2000) there are three competencies for effective problem solving and performance that a leader should have. The skill models are problem-solving skills, social judgment skills, and knowledge. All these qualities of leadership will always be needed wherever and at whatever changing time.

LITERATURE REVIEW

Leadership

Leadership theory is never static and keeps evolving over time. Leadership according to (Colquitt at al., 2013) states leadership as using authority to carry out employee activity towards achieving goals. Another definition according to (Luthans, 2008) is that leadership cannot exist without resources, ideas, and employee cooperation. Leadership according to (Robbins & Judge, 2016) states leadership as the ability to influence a group towards the achievement of a vision or goal. In the opinion of (Vecchio, 2006), in his book Organizational Behavior; Core Concept; states that leadership can be described as the process of a leader in reaching organizational members wanting to carry out the intended activities. The definition of leadership according to (Gibson at al., 2006) states leadership as using authority or power to encourage individuals to achieve several goals.

Leadership is the art of inviting and moving other people to work to achieve goals. In numerous investigations, researchers have focused on identifying specific personal attributes or traits that qualify an individual as a leader and contribute to their success in leadership roles. Traits consistently linked to effective leadership encompass intelligence, spanning both mental acuity and emotional intelligence, as well as personality factors such as extraversion, conscientiousness, openness to experience, and self-esteem. Additionally, integrity is recognized as a key trait associated with successful leadership in various studies. Daniel Goleman considers that IQ is a trait that is required. While crucial for individuals in entry- to high-level management positions, once leaders attain these roles, a high IQ loses its significance as most leaders already possess elevated intellectual abilities. According to (Goleman, 2004), the distinguishing factor between effective and ineffective leaders lies in their ability to manage their own emotions, understand the emotions of others, exhibit internal motivation, and demonstrate strong social skills. According to (Judge at al., 2022) a robust correlation exists between the big five personality traits and effective leadership. These traits include (1) Openness, characterized by curiosity, originality, intellectuality, creativity, and receptiveness to new ideas. (2) Conscientiousness, demonstrated through organization, systematic approaches, punctuality, achievement orientation, and reliability. (3) Extraversion, reflected in outgoing, talkative, sociable behavior, and a penchant for social situations. (4) Agreeableness, encompassing affability, tolerance, sensitivity, trust, kindness, and warmth. (5) Neuroticism, characterized by traits such as anxiety, irritability, temperamental tendencies, and moodiness.

Westerman G et al., (2014) in emphasizing the significance of leadership in driving digital transformation, asserted that a digital leader is someone who mobilizes the organization by fostering a comprehensive understanding of digital initiatives and wields influential capabilities over the workforce. (Alanazi, 2022).

According to Klein, states characteristics of digital leaders are divided into three groups: Characteristics related to digital business, characteristics concerning social leadership attitude, and characteristics related to general mindset. (Klein, 2020).

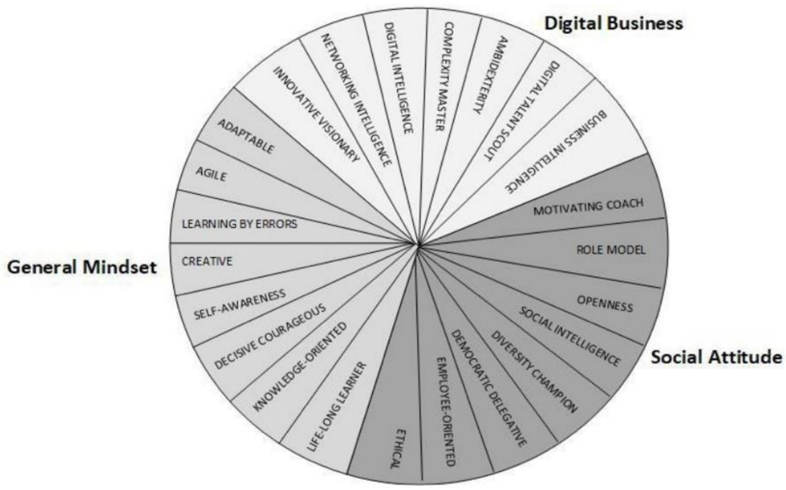

Figure 1. Leadhership Characteristics in Era of Digital Transformation
Source: Klein, M. (2020)

Leadership Style

Leadership style is a model used by a leader to guide the organization and its subordinates in achieving a certain goal. Numerous leadership theories can be tailored and applied effectively within the healthcare industry to enhance management in its intricate and dynamic setting. The adaptability of leadership theories allows healthcare leaders to select and implement approaches that align with the unique challenges and demands of the healthcare sector. By integrating appropriate leadership theories, healthcare organizations can optimize their management practices, foster teamwork, improve patient care, and navigate the complexities inherent in the healthcare landscape.

Traditional Leadership Styles

There are three basic leadership styles according to Kurt Lewin: Authoritarian (Autocratic), Delegative (Laissez faire), Participative (Democratic). (Jdetawy, 2018) Authoritarian leadership (Autocratic style), in this style, the leader directly gives directions and tasks to subordinates and subordinates must carry out tasks according to orders, in this case power or authority in the organization is really needed and the one who benefits the most Delegative leadership (Laissez-faire style), in this style the nature of leadership is not visible, the leader looks like he is hands-off to his subordinates. But it doesn't mean irresponsible. The meaning of hands-off here is to give freedom to subordinates to be creative and innovate. So, the role of the leader here is passive and acts as a facilitator and supporter if asked. Participative leadership (Democratic style), meaning involving leaders and employees in decision making, implementing activities, and various other activities. Or it could be said that this style adheres to a cooperative system.

Leader-Member Exchange Theory

The leader-member exchange theory delves into the dynamics of the connection between management and employees within an organization. The effectiveness of an organization is frequently influenced by the quality of relationships between leaders and their team members. The primary objective of the leader-member exchange theory is to scrutinize these interactions comprehensively and offer strategies to enhance and optimize the working relationship between leaders and employees (Northhouse, 2016).

Transformational leadership

Transformational leadership has long been recognized as a critical factor to organizational digital technology adoption. Transformational leadership was developed by James MacGregor Burns, and the process involves the profound alteration and transformation of individuals, focusing on emotions, values, ethics, standards, and long-term goals. The transformational theory necessitates leaders to articulate their vision in a way that is not only meaningful and exciting but also fosters unity and a shared sense of purpose. A manager who is dedicated, possesses a clear vision, and empowers others can be aptly characterized as a transformational leader within this framework (Northhouse, 2016).

Digital era

The digital era is a picture of industrial evolution by identifying and finding ways to overcome the challenges of digital transformation in society, which means that all technology, robots, and cloud storage are the answers to the problems in our lives. This era was introduced by the Sakura Country (Japan) in 2019 which was initiated in anticipation of the industrial revolution 4.0.

The journey to society 5.0 starts from society 1.0 which is characterized by a society that survives by hunting and collecting wild animals and plants for consumption without any effort to cultivate them (hunter-gatherer society). Then Society 2.0 started to know how to plant or was called an agrarian society. In 3.0, people are starting to recognize industry to overcome several problems (industrial society). Then in 4.0 technology began to be used in society.

Currently, countries in the world, including Indonesia, are preparing to face digitalization era that focuses on human life as a continuation of the technology that exists in society 4.0. One description of society 5.0 begins with the existence of robots that have artificial intelligence with the aim of helping humans, but if this technology is not addressed properly, it will certainly have a bad impact on humans. This is where the role of education is needed to provide education regarding technology and its use in life. So that it doesn't get misused.

This framework enables society to harness contemporary science-driven knowledge such as AI, robotics, and IoT to cater to human needs. The primary objective of this framework is to establish a community where individuals genuinely relish life and experience a sense of comfort. Introduced in January 2019, Society 5.0 was conceived as a response to the apprehensions surrounding the potential degradation of humanity associated with the Fourth Industrial Revolution. In essence, the disparities between the concepts of Revolution 4.0 and Society 5.0 are minimal. The distinction lies in the emphasis of Society 5.0, which places a greater focus on the human context. While the Fourth Industrial Revolution employs AI and artificial intelligence as pivotal elements shaping the future, the digital era leverages modern technology while retaining humans as the central component.

The era of digitization signifies a period where all technologies seamlessly integrate with human life. The internet, beyond serving as a mere information provider, becomes an integral part of daily living. Within the realm of digital systems, the innovation derived from technological advancements holds the potential to bridge human disparities and address future economic challenges. In the information society, often referred to as Society 4.0, cross-sectional knowledge sharing proves insufficient due to the limitations inherent in human capabilities.

In the digital era, this limitation is surpassed as the synergy between the digital realm and the real-world environment reaches new heights. While Society 4.0 relies on the internet to access databases in cyberspace, the digital era goes a step further. It involves the accumulation of substantial data from physical space sensors, storing it in cyberspace. Subsequently, this vast dataset undergoes analysis and interpretation through Artificial Intelligence (AI). The findings from this analysis are then conveyed to individuals in the physical realm through various formats. This process signifies a shift towards a more integrated and technologically advanced era, emphasizing the dynamic interaction between the digital and physical spheres.

Society 5.0 strives to create a community where individuals can experience a superior quality of life, simultaneously fostering economic development and addressing prevalent social issues. This envisioned society is designed to be fully operational, catering to a diverse range of needs without discrimination based on factors such as age, geographic location, gender, language, and more. The overarching goal is to build a holistic and inclusive environment that ensures a high standard of living for all, irrespective of individual differences and backgrounds. For example, an increase in society 5.0 in the health sector, people aged 60 > 90 years old according to WHO are experiencing a generative process and most of them bring various problems in terms of health, or some of their body functions do not function according to humans at that age. children to middle age. In this case, society 5.0 seeks to provide comfortable living for elderly people by creating various technologies that can be used as health aids in everyday life. Like an automatic driving car that can detect irregularities in the user's health, health, and medical care easily and automatically (Fukuyama, 2018).

Digital health, also known as digital healthcare, is a wide-ranging, multidisciplinary system that combines technology and healthcare. Mobile health (mHealth) apps, electronic health records (EHRs), electronic medical records (EMRs), wearable devices, telehealth services, telemedicine, and personalized medicine are all included. (Bernstein, 2021). Digital health might have a role in health transformation by assisting patient involvement in the methods of delivering health care (Iyawa at al., 2016). For this reason, medical professionals must adjust to the new era of digital health. A better understanding of digital health may lead to more creativity and enhance the effectiveness of medical services.

RESEARCH METHOD

A literature search was performed using the databases Semantic Scholar, Google Scholar, and PubMed. Search terms used are “Leadership, Leadership style, Digital era, Healthcare quality”. 60 relevant articles were studied and among them 24 directly related articles were selected for this review.

RESULTS AND DISCUSSIONS

The digital system era is a society that has a high level of intelligence. The land of the rising sun (Japan) is the country that will take the lead in realizing this society before other countries. The era of digital systems is an era where society is centered on systems that are integrated online in solving social problems and balancing economic growth. There are several skills that a person must have to face the digital era, namely problem solving, critical thinking, and creativity. A leader must be able to predict future challenges, so that they and the organization they lead can survive for the future. The world is developing very rapidly, so leaders and various organizations must be prepared to deal with global changes.

The Society 5.0 will do everything more often with technology because as previously explained, the use of technology will become the main axis in life in society 5.0, resulting in them being able to do various things that initially could only be done in certain places and can be done anywhere. can do various things that we previously thought were impossible. This will bring significant changes to the behavior, perspective, and abilities of every human being. With complex goals and the existence of SDGs, it is necessary to have leaders who can manage various human resources, and this technology well and precisely, and flexibly without being too tied to rules so that the advantages obtained in society 5.0 can be utilized effectively good. Not being bound by rules or being flexible here does not mean being able to do things according to personal desires and not obeying the rules. What is meant by flexibility is not following old rules, for example, you must always be offline, and then you don't have to force yourself to use old rules, before the advent of technology. And flexibility here also means not imposing the leader's will on employees and giving them space to make decisions and be creative according to their abilities.

In the context of Society 5.0, leadership becomes crucial for navigating the complexities of this technologically advanced and linked environment. While the importance of specific traits varies according to the specific challenges and possibilities identified in Society 5.0, certain leadership traits remain generally valuable. The relationship between traits and leadership has been a subject of study for many years. Researchers have explored various traits that are often associated with effective leadership. While there is no particular set of traits for successful leadership, certain traits are commonly found in effective leaders. These include intelligence (IQ and EQ), good personality, and integrity.

Leading this society requires differences from leading society in ancient times. In this digital era, it is better to use a transformational leadership style combined with LMX theory. Transformational leadership and Leader-Member Exchange (LMX) theory are recognized and valued in the digitalization era for several reasons:

1. Adaptability and Change Management
   This type of leadership focuses on encouraging and motivating people to reach their highest potential. In the context of digitalization, where rapid changes and adaptability are crucial, transformational leaders can effectively guide teams through the challenges of technological advancements and organizational change.
2. Innovation and Creativity
   This style encourages creativity and innovation. In the digital era, organizations need to constantly innovate to stay competitive. Transformational leaders foster a culture of creativity, enabling teams to generate new ideas and solutions. High-quality leader-member relationships, as emphasized in LMX theory, promote open communication and trust. This can enhance the exchange of innovative ideas within a team, fostering a collaborative and creative environment.
3. Employee Engagement and Empowerment
   Leaders who inspire and empower their followers create a sense of purpose and engagement. In the digital age, where remote work and virtual teams are common, engagement becomes even more critical for productivity and team cohesion. LMX theory emphasizes the unique interaction between leaders and followers. Leaders who invest time and effort in building positive relationships can better understand and support their team members, leading to higher levels of engagement.

4. Flexibility and Collaboration
   Transformational leaders often exhibit flexibility and adaptability, which are essential in the dynamic digital landscape. They encourage collaboration and teamwork, essential for navigating the complexities of digital projects. Leader-member exchange theory emphasizes differentiated relationships based on mutual trust and respect. In a digitalized work environment, where virtual collaboration is common, having strong interpersonal relationships becomes crucial for effective teamwork.
5. Digital Leadership Skills
   Many qualities of transformational leadership, such as vision, communication skills, and the ability to inspire, align with the skills needed for effective digital leadership. The personalized nature of leader-member exchange theory aligns with the need for leaders to understand and find the solution to the individual necessities and expectancies of team members in a digitalized setting.

CONCLUSION

Leadership is the art of inviting and moving other people to work to achieve goals. There are several skills that a leader must have to face the digital era, namely problem solving, critical thinking, and creativity. Leaders require personal attributes or traits for several reasons since these qualities are fundamental to their capacity as they lead and inspire others. These traits include intelligence, personality, and integrity.

There are several leadership styles which can be adapted, namely authoritarian leadership style, democratic leadership style, laissez faire leadership style, transformational leadership, and LMX theory. Digital era is an era where society is centered on systems that are integrated online in solving social problems and balancing economic growth. Transformational leadership and LMX theory provide valuable frameworks for leadership in the digitalization era by promoting adaptability, innovation, employee engagement, collaboration, and the development of strong interpersonal relationships in a technologically driven work environment.

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E-COMMERCE'S MARKETING STRATEGY TO INCREASE CUSTOMER PREFERENCE AND SATISFACTION

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ABSTRACT

In the midst of increasing e-commerce competition and the dynamics of consumer behavior, industry players need to think strategically to carry out systematic consumer preference research so as not to be left behind in business competition. This research aims to investigate the influence of service quality on brand preference and satisfaction, the influence of perceived risk on brand preference and satisfaction, the influence of perceived price on brand preference and satisfaction, and the influence of brand preference on satisfaction. There were 198 respondents in the research using purposive sampling, namely Lazada consumers who made at least one purchase. The results of this research are that service quality has a positive effect on brand preference and customer satisfaction, perceived risk has no effect on brand preference and customer satisfaction, the price has a positive effect on brand preference but has no effect on customer satisfaction, and brand preference has a positive effect on customer satisfaction. The managerial implication of this research is that e-commerce business players need to focus on service quality because it has the biggest influence on customer preferences and satisfaction.

Keywords: Service Quality; Perceived Risk; Perceived Price; Satisfaction Brand Preference

INTRODUCTION

E-commerce is a dynamic business that has changed how we shop and do business. Technological developments and rapid changes in customer preferences mean that this business must continuously innovate and research to discover customers' preferences and views about them. This means that e-commerce players should change their marketing strategies to win the competition. According to Leeman (2024), e-commerce retail sales will increase from USD 6 trillion US to 8 trillion US in 2026. Based on Statista.com (2023), world e-commerce revenues are predicted to reach US$ 3,226 billion in 2024 with an annual growth rate (CAGR 2024-2029) of 9.79%, resulting in a projected market volume of US$5,145.00bn by 2029, number of users is expected to amount to 3.2bn users by 2029, User penetration will be 36.6% in 2024 and is expected to hit 44.4% by 2029. The average revenue per user (ARPU) is expected to be US$1,408.00. In Indonesia alone, e-commerce revenue will reach US$ 35.19 billion in 2024 with a growth rate of 9.28% (CAGR 2024-2029), market volume in 2029 will be US$ 54.8 billion, user penetration will be 31.8% in 2024, and is expected to hit 47.0% by 2029, the average revenue per user is expected to amount to US$404.10.

This figure is fantastic, and to survive in this business, e-commerce players must understand the industry trends and consumer behavior that shape e-commerce. Mobile shopping is the main determining factor that makes e-commerce proliferate due to its convenience, fast responsiveness, and user-friendly shopping experiences. In response to e-commerce industry trends like this, businesses are optimizing their mobile platforms, and implementing innovative features to cater to the ever-growing mobile-savvy audience. Besides that, the service becomes the brand at the moment of customer interaction (Leeman, 2024). For this reason, good service quality is needed. E-commerce players must continuously monitor the quality of the services from their platforms.

Apart from that, Sinelnikov (2024) revealed that there are several things that e-commerce players need to pay attention to in order to re-sharpen their e-commerce business, one of which is using Augmented reality shopping experience, blockchain technology for supply chains, customized loyalty programs for customers, environmentally eco-friendly commerce, and personal solid data security. Personal solid data security, in this case, is how perceived risk is in e-commerce. Perceived risk is a factor that is still a concern for e-commerce. Besides service quality and perceived risk, perceived price can influence customer preferences regarding e-commerce (Leeman, 2024). Inflation is changing how people spend online. As consumers' budgets tighten, they will likely curb online spending to introduce barriers against impulse buys. They want to see the value of their purchases. Consumers have increasingly diverse ideas of what indicates quality in a product or service. As budget pressures force tighter trade-offs, consumers are becoming more realistic in their search for value, between quality received and cost. Based on the above phenomenon, this research focuses on how service quality, perceived risk, and perceived price influence customer preferences and their influence on customer satisfaction.

According to Ahdiat (2024a), the five largest e-commerce in Indonesia are Shopee, Tokopedia, Lazada, Blibli, and Bukalapak, with a number of visits throughout 2023, namely Shopee 2.35 billion visitors, Tokopedia 1.25 billion, Lazada 762.4 million, Blibli 338.4 million and Bukalapak 168.2 million. Million visitors. In Figure 1, the number of visitors to Shopee and Blibli increases quarterly. Although Tokopedia experienced a decline, the decline was not that significant. Lazada experienced a significant decline from the first quarter to the fourth quarter of 2023, namely 46.98%.

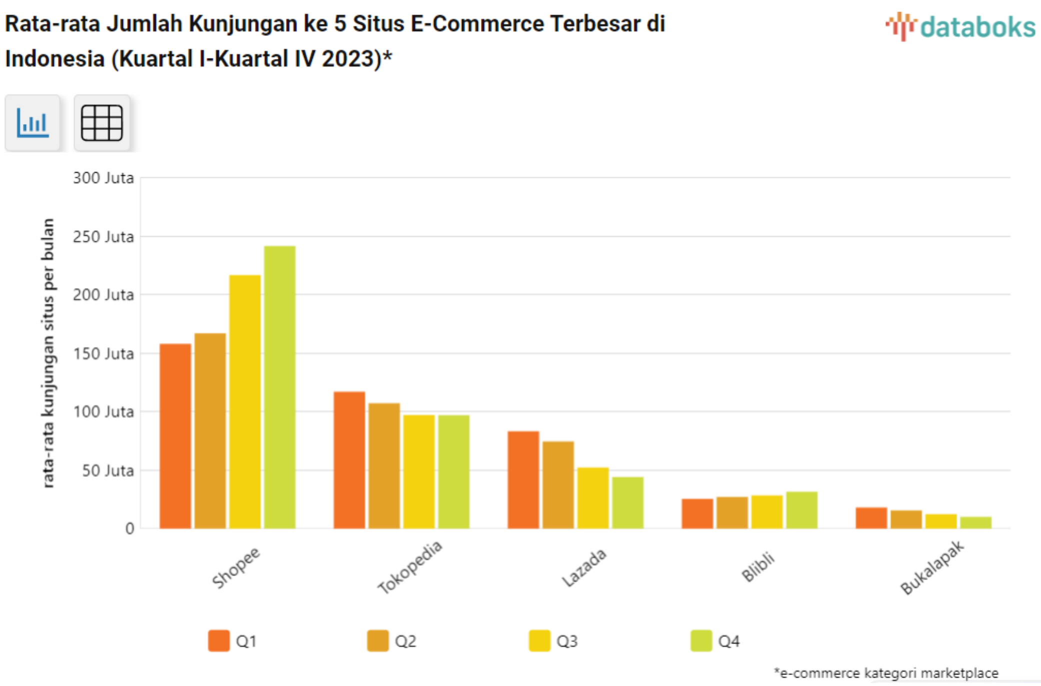

Figure 1. Average Number of Visits to the 5 Largest E-commerce Sites in Indonesia (Quarter I-Quarter IV 2023)
Source: Ahdiat (2024b)

Furthermore, according to Annur (2023) in Figure 2, the proportion of e-commerce transactions based on UISA groups has increased to generations above Generation Z and Millennials. Even though the millennial generation customers are still the most significant contributor to the proportion of e-commerce transactions throughout 2022, reaching 46.2%.

However, the trend has tended to decline in the last two years. Likewise, consumers aged 18-25 years or Generation X were the second largest contributor to the proportion of e-commerce transactions last year. However, the trend for the proportion of transactions in this age group will decrease from 2020-2022. On the other hand, the proportion of e-commerce transactions for the 36-45-year-old and 46-55-year-old age groups has tended to increase in the last two years. The proportion of e-commerce transactions for the two age groups has increased compared to 2021, namely to 23.5% and 6.3%, respectively, in 2022. This behavior change is, of course, that e-commerce players must carry out systematic research to find out their behavior and preferences. Based on the description above, this research focuses on Lazada e-commerce due to the significant decline in sales compared to other e-commerce.

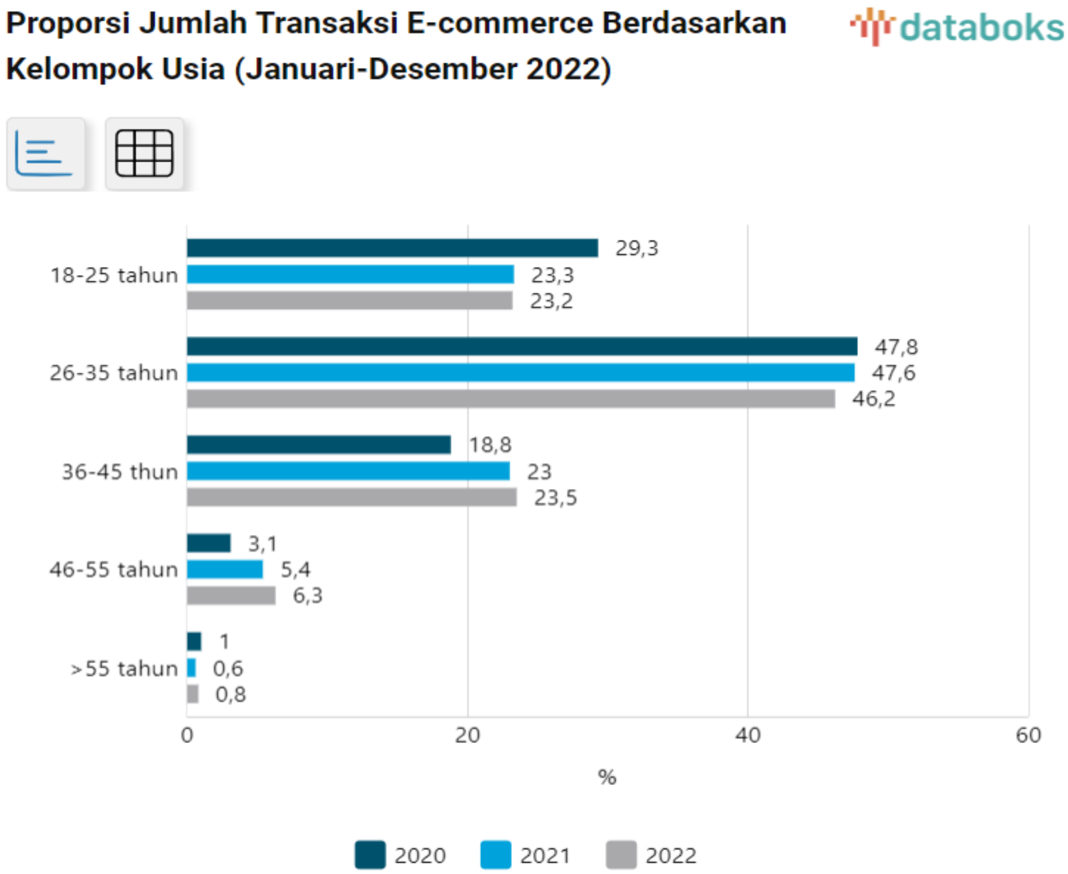

Figure 2. Proportion of Number of E-commerce Transactions Based on Age Group (January-December 2022)
Source: Annur (2023)

This research focuses on brand preference since limited previous empirical research on the antecedents or factors that influence brand preference. Therefore, this research aims to investigate the positive effect of service quality on brand preference and customer satisfaction, the positive effect of perceived risk on brand preference and customer satisfaction, the positive effect of perceived price on brand preference and customer satisfaction, and the positive effect of brand preference on customer satisfaction in Lazada.

LITERATURE REVIEW

Service Quality

Service quality reflects subjective judgments on the overall service and its attributes (Grönroos, 2001). Parasuraman et al. (1988) defined *Service quality* as the overall assessment of service or the consumer's overall perception of an organization's services being better or worse than others. Maintaining high service quality is crucial for a company's or organization's long-term success. A firm needs to prioritize service quality to meet the expectations of customers.

Perceived risk

Perceived product risk is related to the uncertainty of product purchase (Ha et al., 2019). In this research, the perceived risk referred to is the failure of customers to get the product they expected, the possibility of financial loss due to purchasing errors, the possibility of losing control over the loss or leakage of personal information and payment information, the insecurity of the e-commerce payment system and the possibility of losses occurring due to the absence of post-sales service.

Perceived Price

Perceived price, from a customer's perspective, represents the amount of money consumers must give up to get the product/service and becomes the extrinsic cue of consumers in forming a prominent aspect of 'monetary value perception (Zeithaml, 1988). Price can be a positive or negative signal regarding customer satisfaction and preferences. Under a competitive environment, low prices (or reasonable prices) help businesses achieve a sustainable advantage within their product markets. In this research, perceived price is defined as the low price or reasonable price.

Brand Preference

Brand preference is vital in product development and an essential prerequisite to brand equity (Alamro & Rowley, 2011). Brand preference is source of brand loyalty and equity (Keller & Lehman, 2006). *Brand preference* is defined as the extent to which the customer favors the designated service provided by a company compared to the designated service provided by other companies in his or her consideration set (Hellier et al., 2003).

Satisfaction

Customer satisfaction is widely used in evaluating business performance Customer satisfaction is a generalized evaluation of a service based on the experience gathered during the provision of the service (Anderson, 1994). Satisfaction is the consumer’s response to the assessment of the perceived difference between expectations and the result of consumption (Bayih & Singh, 2020; Kul et al., 2024). In this research, satisfaction is defined as customer satisfaction with a service.

Relationship between service quality, brand preference, and satisfaction

Customer satisfaction has been shown in prior empirical research to be a crucial result of the quality of service, indicating that providing quality service was found to have a positive effect on preference critical for higher satisfaction (Giovanis et al., 2012). Service quality was found to have a positive effect on preference (Bahrampour et al., 2018; H. J. Chen, 2018; S. P. Singh et al., 2023; Tajima, 2012). Service quality was also found to have a positive effect on satisfaction with healthcare services in Greece (Giovanis et al., 2018), at restaurants in Lisbon (Ribeiro et al., 2024), at Islamic banking services in Tanzania (Khamis & AbRashid, 2018), at students in Italy (Gabbianelli & Pencarelli, 2023), and in the tourism industry in India (R. Singh & Jena, 2023). The discussion leads to the hypothesis as follows:

H1: Service quality has a positive effect on preference.

H2: Service quality has a positive effect on satisfaction.

Relationship between perceived risk, brand preference, and satisfaction

Alamro & Rowley (2011) study found that perceived risk has a negative effect on preference. Gan & Wang (2017) found that perceived risk has a negative effect on satisfaction with social commerce in China. This result is supported by Lee et al. (2022) on service context, Berlianto (2020) on purchasing via m-commerce in Indonesia, and (Biswas et al., 2023) on the retail banking sector in India. Therefore, we hypothesize as follows:

H3: Perceived risk has a negative effect on preference.

H4: Perceived risk has a negative effect on satisfaction.

Relationship between Perceived price, brand preference, and satisfaction

The impact of price on customer preference is recognized (Alamro & Rowley, 2011). A higher perceived product risk means customers will likely get products that cannot meet their expectations. Price perception also has an impact on consumers' brand preference. Perceived price was found has a positive effect on customer satisfaction (Berlianto, 2019). The discussion leads to the hypothesis as follows:

H5: Price has a positive effect on preference.

H6: Price has a positive effect on satisfaction.

Relationship between brand preference and satisfaction

Previous research found that customer preference has a positive effect on satisfaction (Tajima, 2012). This is also supported by (Cao & Wang, 2024) on food delivery platforms in China and Alamro & Rowley (2011) in the context of mobile telecommunications service providers in Jordan. Based on the description above, then:

H7: Brand Preference has a positive effect on satisfaction.

Conceptual Framework

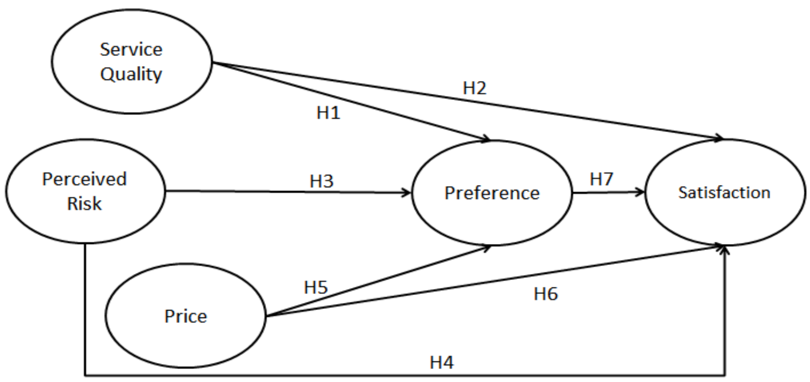

Figure 3. Research Model

RESEARCH METHOD

The population in this study were individuals who had shopped at Lazada. This research uses primary data by distributing questionnaires to 180 respondents based on the number of indicators available, namely 18 times 10 (Hair Jr et al., 2019). Previously, a pretest will be carried out by distributing 40 questionnaires. The sampling technique in this research uses purposive sampling, with the criteria being that individuals have purchased at Lazada at least once and are over 17 years old.

The service quality construct consists of three indicators adopted from (Wu, 2014). The satisfaction construct consists of three indicators adopted from Ladhari (2009), the customer preference construct consists of three indicators adopted from Liu et al. (2014), and the perceived price consists of four indicators adopted from Lien et al. (2015). All questions use a five-point Likert scale from strongly disagree (1) to strongly agree (5).

The data analysis method used in this research is the Partial Least Square Structural Equation Modeling technique (PLS-SEM). To test validity, use a factor loading value of ≤ 0.6. To test reliability, use Composite Reliability with a value of ≥ 0.7 and an Average Variance Extracted (AVE) value of > 0.50. Hypothesis testing using one-tailed (t-stat>1.65) and p-value <0.05 (Hair Jr et al., 2019).

RESULTS AND DISCUSSIONS

There were 198 respondents in this study; the respondent profiles can be seen in Table 1.

Table 1. Respondent Profile

Statement	Total	Percentage (%)
Gender		
• Man	67	33,8%
• Female	131	66,2%
Age:		
• 17-27 (Gen Z)	33	16.7%
• 28-43 (Gen Y)	157	79.3%
• 44-59 (Gen X)	8	0.4%
Education		
• S1 (undergraduate)	88	44.44%
• S2 (post-graduate)	105	53.03%
• S3 (Doctoral)	5	2.53%
Domicile		
• Jakarta	134	67.68%
• Tangerang	51	25.76%
• Others	13	6.57%

Source: SPPS Output (2024)

All outer loading values for each indicator have values above 0.7 so that all indicators are declared valid. The composite reliability value for all variables is above 0.7, and the AVE value for each variable is above 0.5, so all variables are declared reliable.

Table 2. Validity and Reliability Testing

Constructs & item	Outer Loading
Service Quality (CR= 0.894, AVE= 0.738)	
SQ1	0.841
SQ2	0.868
SQ3	0.869
Perceived Risk (CR= 0.956, AVE=0.785)	
PR1	0.794
PR2	0.844
PR3	0.937
PR4	0.938
PR5	0.918
PR6	0.876
Price (CR=0.936, AVE=0.785)	
P1	0.884
P2	0.905
P3	0.870
P4	0.885
Preference (CR= 0.921, AVE= 0.795)	
PRE1	0.924
PRE 2	0.877
PRE 3	0.873
Satisfaction (CR= 0.910, AVE= 0.772)	
SAT1	0.884
SAT2	0.868
SAT3	0.885

Notes: CR= Composite Reliability; AVE= average variance extracted.
Source: SmartPLS Output (2024)

Discriminant validity testing uses the Fornell-Larcker criterion in Table 3. The results show that all square roots of average variance extracted (AVE) are higher than the correlation coefficient between the constructs. This means that this study has adequate discriminant validity.

Table 3. Discriminant Validity Testing

	Perceived Risk	Preference	Price	Service Quality	Satisfaction
Perceived Risk	0.886				
Preference	0.376	0.892			
Price	0.326	0.611	0.886		
Service Quality	0.149	0.714	0.581	0.859	
Satisfaction	0.218	0.624	0.526	0.683	0.878

Source: SmartPLS Output (2024)

Table 4 shows that all VIF values for perceived risk, preference, price, and service quality are listed below 3. This shows that there are no multicollinearity problems.

Tabel 4. Collinearity Statistics (VIF)

	Preference	*Satisfaction*
Perceived Risk	1.122	1.251
Preference	-	2.579
Price	1.658	1.777

Service Quality	1.515	2.311

Source: SmartPLS Output (2024)

Table 5 shows that the r-square value of brand preference is 61.2%. This means that the influence of service quality, perceived risk, and perceived price on brand preference is 61.2%. Other variables outside this research influence the remaining 38.8%. The r-square satisfaction value is 51.5%. This means that the influence of service quality, perceived risk, perceived price, and brand preference on satisfaction is 51.5%. Other variables outside this research influence the remaining 48.5%.

Tabel 5. R-Square

Variables	***R Square***
Preference	0.612
Satisfaction	0.515

Source: SmartPLS Output (2024)

Hypothesis testing in Table 6 shows that four hypotheses are supported, and three hypotheses are not supported because they have a t-statistic value below 1.65 and a p-value above 0.005, namely hypothesis four and hypothesis six.

Table 6. Hyphoteses Testing

Hypotheses	Path	t-statistic	P *value*	Result
H1	Service Quality → preference	9.343	0.000	Supported
H2	Service Quality → satisfaction	4.935	0.000	Supported
H3	Perceived Risk → preference	4.705	0.000	Not Supported
H4	Perceived Risk → satisfaction	0.510	0.305	Not Supported
H5	Price → preference	2.726	0.003	Supported
H6	Price → satisfaction	1.482	0.069	Not Supported
H7	Preference → satisfaction	1.778	0.038	Supported

Source: SmartPLS Output (2024)

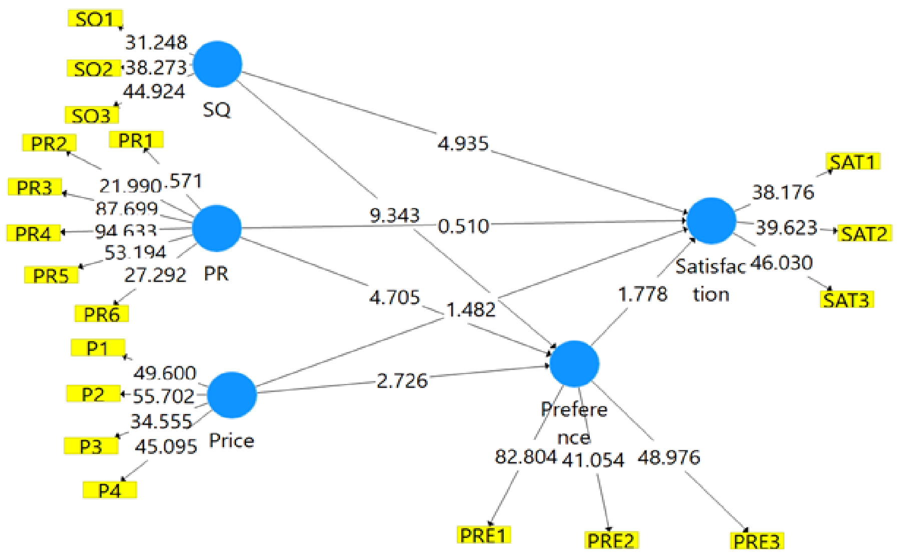

Figure 4. Results of the Structural Model Analysis
Source: SmartPLS Output (2024)

The results of this research show that service quality has a positive effect on brand preference (t-stat 9.343> 1.65; p-value <0.05). It means that the higher the service quality, the higher the brand preference. This result is consistent with previous studies (Bahrampour et al., 2018; Chen & Lin, 2018; Giovanis et al., 2012; Shukla et al., 2023; Tajima, 2012). Hypothesis 2 shows that service quality positively affects satisfaction (t-stat 4.935> 1.65; p-value <0.05). This means that the higher the service quality, the higher the satisfaction level. This result is consistent with previous studies (Gabbianelli & Pencarelli, 2023; Giovanis et al., 2018; Khamis & AbRashid, 2018; Ribeiro et al., 2024; Singh & Jena, 2023). Hypothesis 3 states that perceived risk has a negative effect on brand preference. This hypothesis was not supported (t-stat 4.705> 1.65; p-value <0.05). This result does not align with previous studies (Alamro & Rowley, 2011). Hypothesis 4 states that perceived risk has a negative effect on satisfaction. This hypothesis was not supported (t-stat 0.510 <1.65; p-value >0.05). This result is not in line with previous studies (Berlianto, 2020; Biswas et al., 2023; Gan & Wang, 2017; I. T. Lee et al., 2022). Perceived price has a positive effect on brand preference (H5) (t-stat 2.726> 1.65; p-value <0.05). This means that the higher the perceived price, the higher the brand preference. This result is consistent with previous studies (Alamro & Rowley, 2011). Hypothesis 6 is not supported in this study since the perceived price does not affect satisfaction (t-stat 1.482 <1.65; p-value >0.05). This result is in line with previous studies (Berlianto, 2019). Lastly, brand preference was found to have a positive effect on satisfaction (t-stat 1.778> 1.65; p-value <0.05). This means that the higher the brand preference, the higher the customer satisfaction. This result is in line with previous studies (Alamro & Rowley, 2011; Cao & Wang, 2024; Tajima, 2012).

CONCLUSION

The conclusion of this study is service quality has a positive effect on brand preference and customer satisfaction, perceived risk has no effect on brand preference and customer satisfaction, the price has a positive effect on brand preference but no effect on customer satisfaction, and brand preference has a positive effect on customer satisfaction.

This research succeeded in adding to the literature and supporting previous research regarding the influence of service quality on brand preference and customer satisfaction, the relationship between price and brand preference, and the relationship between brand preference and customer satisfaction.

The managerial implication of this research is that e-commerce business actors need to improve their marketing strategy, such as service quality because it was found to have a positive effect on brand preference and customer satisfaction. E-commerce players can improve service quality by providing good, high-quality service and superior service compared to competitors to customers. E-commerce players also need to pay more attention to the prices charged for the products they sell because it was found to affect brand preference, even though it did not affect satisfaction in this study. E-commerce players can increase the perceived prices by ensuring that they charge low prices, reasonable prices, and affordable prices in line with the e-commerce target market, as well as reasonable prices. E-commerce players also need to pay attention to brand preference because it influences satisfaction. Brand preference can be increased by developing a brand that customers like creating a good and unique brand image compared to competitors.

The limitation of this research is that perceived risk was found to have a positive effect on brand preference. In subsequent research, further studies were carried out regarding these results in different e-commerce industries.

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