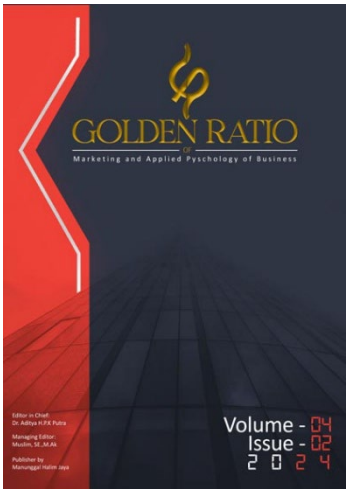
https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb

OPEN ACCESS

ISSN [Online]: 2776-6349



Received: May 24, 2024
Revised: June 01, 2024
Accepted: June 30, 2024

*Corresponding author: Mochammad Piqri, Department of Management, Faculty of Economic and Business, Universitas Airlangga, Surabaya, Indonesia.

E-mail: piqri.erlangga2013@gmail.com

MARKETING | RESEARCH ARTICLE

Business Intelligence Capabilities and Firm Performance: Empirical Study on PT. Erlangga Mahameru Publishers

Mochammad Piqri[1], Aldo Lovely Arief Suyoso[2], Tri Siwi Agustina[3]

[1,2,3] Department of Management, Faculty of Economic and Business, Universitas Airlangga, Surabaya, Indonesia. Email: piqri.erlangga2013@gmail.com[1], aldo.lovely.arief-2023@feb.unair.ac.id[2], siwi@feb.unair.ac.id[3]

Abstract: This research aims to analyze the influence of business intelligence on firm performance. Erlangga Mahameru Publishers. Using quantitative explanatory methodology, the study utilized Structural Equation Modeling with Partial Least Squares (SEM-PLS), which was used in this work via SmartPLS software. A structured survey was used to gather information from 156 workers in PT. Erlangga Mahameru Publishers. The findings reveal a positive relationship between business intelligence and firm performance. There is a positive relationship between sensing capability and transforming capability, with a path coefficient of 0.877. There is a positive relationship between transforming capability and driving capability, with a path coefficient of 0.904. A positive relationship exists between driving capability and firm performance, with a path coefficient of 0.828.

Keywords: Sensing Capability, Transforming Capability, Driving Capability, Firm Performance.

JEL Classification Code: L26, L25, M13, O12, J16

1. INTRODUCTION

The development of business intelligence accounts for the largest share of global business investment, especially in information technology (Ransbotham & Kiron, 2017). Business intelligence is believed to be a new decision support system based on information technology. With sophisticated system capacity, data analysis is used to collect data and convert it into information about opportunities and threats that can be used to solve company operational problems, especially in improving firm performance (Chen & Lin, 2020). The concept of business intelligence is a platform for applying Internet technology that impacts practice, psychology, society, and business to encourage deep integration of the Internet, big data, artificial intelligence, and technology that can stimulate business growth in the real economy. Current economic conditions with various technology applications will continuously improve various business operations. Several companies require operations to continually increase profitability by maximizing new information technology and techniques (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Some companies cannot maximize business intelligence to gain profits, and some companies have minimal competitiveness, so they are not optimal in improving company operations.

The information system success model correlates with improving the company's operational performance (Chen & Lin, 2020). Information processing theory in several case studies shows that there is a relationship between business intelligence and firm performance; this theory still needs to be studied in more depth because the theoretical proof is needed to be able to interpret the relationship between business intelligence and firm performance as well as various other influencing factors such as optimization. Decision-making, cognitive enhancement, and various environmental changes can further explain the impact of business intelligence and firm performance (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Resource-based view is a study theory on business intelligence that explicitly

https://doi.org/10.52970/grmapb.v5i1.793
Website: https://goldenratio.id/index.php/grmapb ISSN [Online]: 2776-6349

considers the relationship with firm performance as a dependent variable (Chen & Lin, 2020). Several previous studies have shown results regarding the role of business intelligence as a significant data analysis capability for making major corporate decisions (Mikalef, Krogstie, Pappas, & Pavlou, 2020).

Various previous studies are considered to have not comprehensively explored the role of complex systemic forces that are endogenous to business intelligence from the perspective of dynamic capabilities theory. The business world considers the impact of the external environment the most important factor to consider because companies generally face information asymmetrical problems in a volatile and highly competitive market environment. Dynamic capability theory and business resource theory explain that business intelligence is an organizational capability in a company that is important to use as a medium for identifying threats and material for capturing opportunities so that there is a logical correlation and influence between business intelligence and firm performance (Ransbotham & Kiron, 2017).

2. LITERATURE REVIEW

2.1. Business Intelligence

According to Conboy et al. (2020), business intelligence is assessed as data availability and accessibility on various platforms, changing the nature of information systems studies. (Dwivedi, 2020) explains that a business intelligence system's core values differentiate data and reaction capacity when responding to various processed information. (Chen & Lin 2020) explains that business intelligence is an information system used to collect and filter data and convert it into information and knowledge related to business. It provides trend data and predictive analysis and reduces uncertainty in decision-making. According to (Bozic & Dimovski, 2019), business intelligence consists of search processes, reporting, analysis, online processing, conversion and operational analysis, forecasting, and optimization. These various definitions and interpretations reflect that there are fundamental characteristics of business intelligence systems depending on the ability to search, extract, differentiate, and discover data so that business intelligence presents solutions related to business problems and issues in terms of data collection and processing with two main functions of data filtering and creating information to reduce the difficulty and cognitive burden for business decision makers (Philipp, Martin, Sam, David, & Michael, 2018).

Data preparation and use are two independent and closely related core functions in information systems. Business intelligence is an advanced technical support process based on data analysis. Big data, Data Analysis, and Information are correlated. BI is often described as a technical tool with data science capacity that utilizes computer systems to collect, analyze, and deliver information to support business operations and optimize decision-making effectively (Ransbotham & Kiron, 2017). Business intelligence is for decision-making in general, and the interaction or integration of artificial intelligence is to support or replace human decision-makers specifically. Specifically, BI relies on the ability to search (collect), differentiate (analyze), and transform (transform) data to identify opportunities and challenges in business practices. Business intelligence can dynamically configure business processes to help optimize resource allocation through timely and accurate identification of environmental changes, thereby reflecting the dynamic capabilities of deep understanding and cognitive recognition of opportunities, which is in line with the elements of cognitive perception and search capability model as defined by (Bozic & Dimovski, 2019).

Sensing Capability is a core organizational capability for enterprises to survive in highly competitive and volatile business situations—logical deduction from BI sensing capabilities and functioning mechanisms (Kar & Dwivedi, 2020). Business intelligence systems can quickly understand factual problems and their interactions in business operations and encourage enterprises to respond with executable actions to achieve goals. (Davis, 1989) believes that BI is a process of data analysis supported by technology. It collects fragmented data and turns it into information or knowledge about an organization's goals, opportunities, and operational environment, which allows business companies to increase their ability to survive and grow in the market, which is very competitive. This capacity identification is consistent with the keyword concurrency analysis, which includes information technology, business analysis, predictive analysis, knowledge, and decision-

https://doi.org/10.52970/grmapb.v5i1.793
Website: https://goldenratio.id/index.php/grmapb ISSN [Online]: 2776-6349

making. The transformational nature of BI capabilities, which focus on understanding information and presenting factual relationships, transforms these relationships into strategic planning and action to achieve organizational goals (Craig, Dibrell, & Garrett, 2014).

Transformation capability is the ability to prepare or direct a business enterprise promptly to make changes effectively and increase competitive advantage (Conboy, Mikalef, Dennehy, & Krogstie, 2020). Over the past decade, academic and industry professionals have shown a strong interest in defining the transformation capacity of BI and have increased their research on how BI can improve decision support by defining operational goals and action plans. However, perceptions of BI's transformation capabilities remain unclear. Of course, BI is based on the sensing ability to capture information and understand factual relationships, then convert these relationships into the organization's ability to adapt, integrate, and redistribute resources and improve firm performance (Chen & Lin, 2020).

2.2. Firm Performance

Firm performance is a process and activity related to marketing performance in creating and satisfying customers by continuously assessing customer needs and desires (Chen & Lin, 2020). Firm performance is an important factor that allows companies to understand the market and develop product and service strategies to meet customer and market needs (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Companies that want to achieve high firm performance have a basis for faster improvement, reflected in the success of the company's new superior products, profitability, market share, and sustainable competitive advantage (Canch, Liem, & Thu, 2019). Firm performance is often associated with marketing management in an organization to create more sales value from products and services to customers. According to Craig, Dibrell, and Garrett (2014), companies with strong, firm performance will prioritize customer matters (e.g., likes and dislikes, satisfaction, and perception), factors that influence customers (e.g., competition, economics, sociocultural trends, and so on), (3) factors that influence a company's ability to influence and satisfy customers (for example, technology, regulations, and so on). Based on several definitions of marketing performance above, it can be concluded that marketing performance is a marketing method used by an organization to identify the market and determine the company's sales strategy to increase it.

2.3. Hypotheses Framework

2.3.1. Sensing Capability and Transforming Capability

The transformational nature of BI capabilities, which focus on understanding information and presenting factual relationships, transforms these relationships into strategic planning and action to achieve organizational goals (Craig, Dibrell, & Garrett, 2014). Transformation capability is the ability to prepare or direct a business enterprise promptly to make changes effectively and increase competitive advantage (Conboy, Mikalef, Dennehy, & Krogstie, 2020). Over the past decade, academic and industry professionals have shown a strong interest in defining the transformation capacity of BI and have increased their research on how BI can improve decision support by defining operational goals and action plans. However, perceptions of BI's transformation capabilities remain unclear. For that reason, the hypotheses of this research are:

H1: Sensing Capability has a positive correlation with Transforming Capability.

2.3.2. Transforming Capability and Driving Capability

Business intelligence is believed to be a new decision support system based on information technology. With sophisticated system capacity, data analysis is used to collect data to convert it into information about opportunities and threats that can be used to solve company operational problems, especially in improving firm performance (Chen & Lin, 2020). The concept of business intelligence is a platform for applying Internet technology that impacts practice, psychology, society, and business to encourage deep integration of the Internet, big data, artificial intelligence, and technology that can

https://doi.org/10.52970/grmapb.v5i1.793
Website: https://goldenratio.id/index.php/grmapb ISSN [Online]: 2776-6349

stimulate business growth in the real economy. Current economic conditions with various technology applications will continuously improve various business operations. Several companies require operations to continually increase profitability by maximizing new information technology and techniques (Mikalef, Krogstie, Pappas, & Pavlou, 2020). For that reason, the hypotheses of this research:

H2: Transforming Capability has a positive correlation with Driving Capability.

2.3.3. Driving Capability and Firm Performance

Information processing theory in several case studies shows that there is a relationship between business intelligence and firm performance; this theory still needs to be studied in more depth because the theoretical proof is needed to be able to interpret the relationship between business intelligence and firm performance as well as various other influencing factors such as optimization. Decision-making, cognitive enhancement, and various environmental changes can further explain the impact of business intelligence and firm performance (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Resource-based view is a study theory on business intelligence that explicitly considers the relationship with firm performance as a dependent variable (Chen & Lin, 2020). Firm performance is an important factor that allows companies to understand the market and develop product and service strategies to meet customer and market needs (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Companies that want to achieve high firm performance have a basis for faster improvement, reflected in the success of the company's new superior products, profitability, market share, and sustainable competitive advantage (Canch, Liem, & Thu, 2019). For that reason, the hypotheses of this research:

H3: Driving Capability has a positive correlation with Firm Performance.

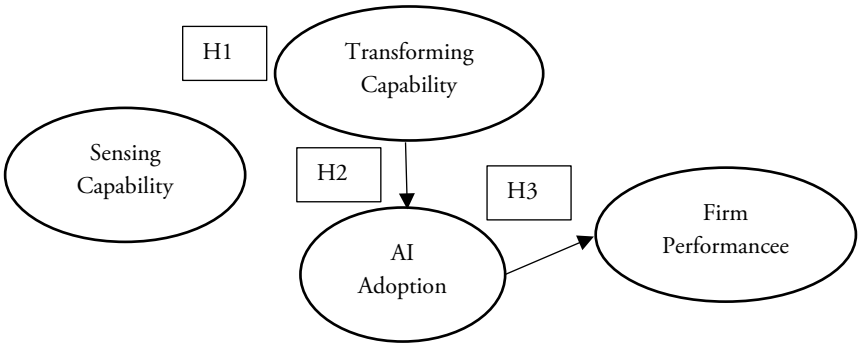


Figure 1. Research Model

3. RESEARCH METHOD AND MATERIALS

Partial least squares (PLS) with structural equation modeling (SEM) using the SmartPLS software is appropriate for this research for several reasons. Firstly, SEM-PLS allows for the simultaneous analysis of many dependent and independent variables, making it a good choice for complicated model analysis incorporating multiple constructs and indicators (Davis, 1989). Second, SEM-PLS is robust even with small to medium sample sizes, making it suitable for this research given the purposive sampling method and specific respondent criteria. This characteristic ensures reliable results despite potential deviations from normality. SEM-PLS is perfect for both exploratory and predictive research since it is prediction-oriented and maximizes the explained variance of dependent variables. In this study, SEM-PLS helps predict the relationships between these constructions. The method also offers flexibility in specifying the measurement and structural models, allowing for accurate modeling of the constructs involved.

https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb

ISSN [Online]: 2776-6349

Using bootstrapping techniques in SEM-PLS for hypothesis testing enhances the robustness of the results. Bootstrapping assesses the significance of path coefficients without relying on parametric assumptions, thus rigorously testing hypotheses. Furthermore, a thorough assessment of the model's explanatory and predictive capacity is made possible by SEM-PLS's extensive model evaluation metrics, which include R^2 (coefficient of determination), path coefficients, effect sizes (f^2), and predictive relevance (Q^2).

4. RESULTS AND DISCUSSION

4.1. Outer Model

The following is an illustration of the SEM diagram used in this research:

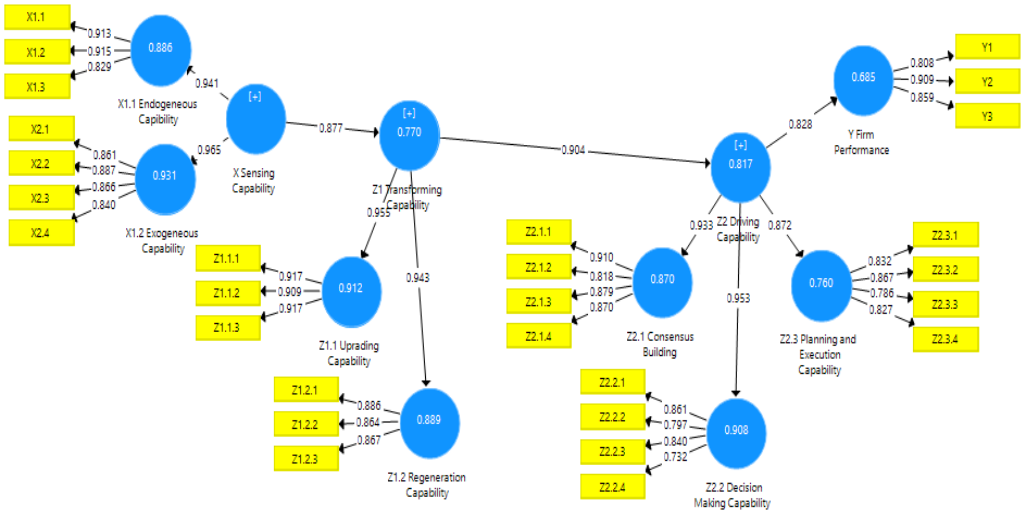


Figure 2. Loading Factor

The loading factor of each indicator on the variable has a minimum value of 0.6, and the Average Variance Extract (AVE) analysis has a minimum value of 0.5 but meets the requirements. Based on the table below, it can be seen that the results of convergent validity testing show that all variables have indicators with loading factor values of more than 0.6 or 0.5, meaning that all indicators have met the convergent validity criteria.

Table 1. Results of Loading Factor

Variable	Item	Loading Factor	Info
X Sensing Capability	X1.1	0,913	Valid
	X1.2	0,915	
	X1.3	0,829	
	X2.1	0,861	
	X2.2	0,887	
	X2.3	0,866	
	X2.4	0,840	
Z1 Transforming Capability	Z1.1.1	0,917	
	Z1.1.2	0,909	
	Z1.1.3	0,917	
	Z1.2.1	0,886	
	Z1.2.2	0,864	
	Z1.2.3	0,867	
Z2 Driving Capability	Z2.1.1	0,910	

https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb

ISSN [Online]: 2776-6349

Variable	Item	Loading Factor	Info
	Z2.1.2	0,818	
	Z2.1.3	0,879	
	Z2.1.4	0,870	
	Z2.2.1	0,861	
	Z2.2.2	0,797	
	Z2.2.3	0,840	
	Z2.2.4	0,732	
	Z2.3.1	0,832	
	Z2.3.2	0,867	
	Z2.3.3	0,786	
	Z2.3.4	0,827	
Y Firm Performance	Y1	0,808	
	Y2	0,909	
	Y3	0,859	

Next, the AVE Method is used to assess the convergent validity of each construct and latent variable. The minimum value that is considered to be met is at least 0.5. The average variance extracted by AVE based on these SEM results is as follows:

Table 2. Average Variance Extracted Value

Variable	AVE	Info
X Sensing Capability	0,695	Valid
Z1 Transforming Capability	0,719	
Z2 Driving Capability	0,590	
Y Firm Performance	0,739	

.

In the table 2, the AVE value for the latent variable X sensing capability (0.695), Z1 transforming capability (0.719), Z2 driving capability (0.590), and Y firm performance (0.739). Thus, it can be said that the measurement model is valid and meets the validity test requirements. The cross-loading values based on the results in this SEM are as follows:

Table 3. Cross Loading Value

	X		Y	Z1		Z2		
	X1.1	X1.2		Z1.1	Z1.2	Z2.1	Z2.2	Z2.3
X1.1	**0.913**	0.747	0.419	0.668	0.630	0.635	0.684	0.440
X1.2	**0.915**	0.744	0.475	0.684	0.642	0.723	0.716	0.461
X1.3	**0.829**	0.690	0.506	0.801	0.667	0.714	0.709	0.542
X2.1	0.814	**0.861**	0.522	0.780	0.692	0.742	0.740	0.521
X2.2	0.719	**0.887**	0.555	0.732	0.714	0.702	0.761	0.516
X2.3	0.657	**0.866**	0.614	0.673	0.669	0.655	0.756	0.511
X2.4	0.633	**0.840**	0.581	0.678	0.671	0.679	0.726	0.520
Y1	0.290	0.406	**0.808**	0.367	0.454	0.432	0.577	0.619
Y2	0.458	0.588	**0.909**	0.563	0.615	0.578	0.679	0.756
Y3	0.566	0.661	**0.859**	0.764	0.700	0.745	0.750	0.710
Z1.1.1	0.732	0.725	0.605	**0.917**	0.745	0.781	0.748	0.605
Z1.1.2	0.726	0.776	0.686	**0.909**	0.722	0.799	0.817	0.616
Z1.1.3	0.754	0.777	0.571	**0.917**	0.732	0.760	0.742	0.567
Z1.2.1	0.630	0.728	0.594	0.707	**0.886**	0.667	0.713	0.552
Z1.2.2	0.581	0.613	0.576	0.625	**0.864**	0.694	0.705	0.599
Z1.2.3	0.689	0.733	0.657	0.760	**0.867**	0.824	0.770	0.659
Z2.1.1	0.707	0.720	0.598	0.773	0.728	**0.910**	0.769	0.617
Z2.1.2	0.617	0.647	0.583	0.622	0.708	**0.818**	0.687	0.550
Z2.1.3	0.725	0.763	0.632	0.832	0.757	**0.879**	0.792	0.569
Z2.1.4	0.654	0.670	0.611	0.733	0.718	**0.870**	0.783	0.622
Z2.2.1	0.634	0.660	0.710	0.702	0.726	0.824	**0.861**	0.698

https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb

ISSN [Online]: 2776-6349

	X		Y	Z1		Z2		
	X1.1	X1.2		Z1.1	Z1.2	Z2.1	Z2.2	Z2.3
Z2.2.2	0.743	0.713	0.553	0.652	0.681	0.699	**0.797**	0.476
Z2.2.3	0.716	0.825	0.608	0.792	0.720	0.735	**0.840**	0.577
Z2.2.4	0.468	0.497	0.669	0.565	0.573	0.542	**0.732**	0.675
Z2.3.1	0.517	0.551	0.690	0.617	0.649	0.589	0.678	**0.832**
Z2.3.2	0.524	0.560	0.757	0.655	0.642	0.647	0.703	**0.867**
Z2.3.3	0.334	0.414	0.615	0.415	0.442	0.449	0.519	**0.786**
Z2.3.4	0.393	0.441	0.617	0.443	0.537	0.545	0.571	**0.827**

Cross-loading in table 3 shows that each latent variable's value is more significant than other latent variables' values. This reliability test also examines the composite reliability value as an indicator of reliability, where both values should exceed 0.70. The Cronbach's alpha and composite reliability values obtained in this SEM are as follows:

Table 4. Construct Reliability

Variable	Cronbach's Alpha	Composite Reliability	Info
X Sensing Capability	0.926	0.941	Reliable
Z1 Transforming Capability	0.922	0.939	Reliable
Z2 Driving Capability	0.936	0.945	Reliable
Y Firm Performance	0.825	0.895	Reliable

Based on table 4, the results of the reliability test analysis show that the composite reliability score is more significant than 0.7, which means that all variables are reliable and have passed the test requirements.

4.2. Inner Model

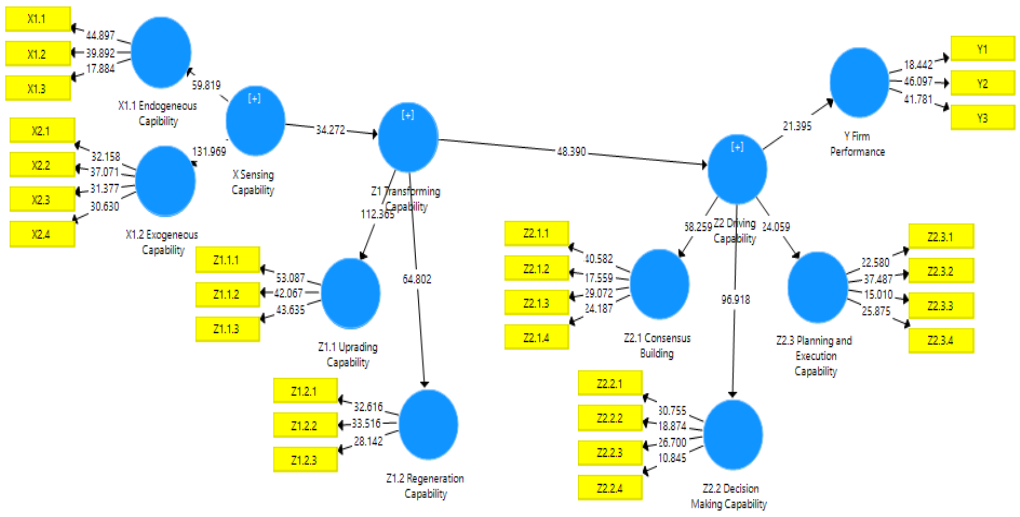


Figure 3. Inner Model

The model's feasibility test examines the R-square value, which ranges from 0 to 1. An R-square value of 0.75 is considered good, 0.50 is moderate, and 0.25 is considered poor. The following R-square values are based on the SEM results, as shown in the table and figure:

https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb

ISSN [Online]: 2776-6349

Table 5. R-Square

	R Square
Y Firm Performance	0.685
Z1 Transforming Capability	0.770
Z2 Driving Capability	0.817

From table 5, the model's suitability can be assessed by the r-square result for firm performance, which is 0.685 (68.5%). This indicates that 68.5% of the variation in firm performance can be explained by driving capability. The r-square result for transforming capability is 0.770 (77%). This indicates that 77% of the variation in transforming capability can be explained by sensing capability. The r-square result for driving capability is 0.817 (81,7%). This indicates that 81,7% of the variation in driving capability can be explained by transforming capability. To determine whether a relationship is significant, the p-value should be compared to the 5% error rate, as outlined in the research hypothesis testing:

Table 6. Path Coefficient SEM-PLS

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
X Sensing Capability -> Z1 Transforming Capability	0.877	34.272	0.000
Z1 Transforming Capability -> Z2 Driving Capability	0.904	48.390	0.000
Z2 Driving Capability -> Y Firm Performance	0.828	21.395	0.000

Based on the table 6, the results of the hypothesis test show the following results and conclusions:

1. Sensing capability has a positive effect of 0.877 on transforming capability with a t-statistic value of 34.272 and a p-value of 0.000 < 0.05. Therefore, the hypothesis that " Sensing capability has a positive and significant effect on transforming capability " (H1) is accepted.
2. Transforming capability has a positive effect of 0.904 on driving capability with a t-statistic value of 48.390 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Transforming capability has a positive and significant effect on driving capability" (H2) is accepted.
3. Driving capability has a positive effect of 0.828 on firm performance with a t-statistic value of 21.395 and a p-value of 0.000 < 0.05. Therefore, the hypothesis " Driving capability has a positive and significant effect on firm performance" (H3) is accepted.

5. DISCUSSION

a. Sensing Capability and Transforming Capability

Sensing capability has a positive effect of 0.877 on transforming capability with a t-statistic value of 34.272 and a p-value of 0.000 < 0.05. Therefore, the hypothesis that " Sensing capability has a positive and significant effect on transforming capability " (H1) is accepted. The transformational nature of BI capabilities, which focus on understanding information and presenting factual relationships, transforms these relationships into strategic planning and action to achieve organizational goals (Craig, Dibrell, & Garrett, 2014). Transformation capability is the ability to prepare or direct a business enterprise promptly to make changes effectively and increase competitive advantage (Conboy, Mikalef, Dennehy, & Krogstie, 2020). Over the past decade, academic and industry professionals have shown a strong interest in defining the transformation capacity of BI and have increased their research on how BI can improve decision support by defining operational goals and action plans. However, perceptions of BI's transformation capabilities remain unclear currently.

b. Transforming Capability and Driving Capability

Transforming capability has a positive effect of 0.904 on driving capability with a t-statistic value of 48.390 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Transforming capability has a positive and significant effect on driving capability" (H2) is accepted. Business intelligence is believed to be a new decision support system based on information technology. With sophisticated system capacity, data analysis is used to collect data to convert it into information about opportunities and

https://doi.org/10.52970/grmapb.v5i1.793
Website: https://goldenratio.id/index.php/grmapb ISSN [Online]: 2776-6349

threats that can be used to solve company operational problems, especially in improving firm performance (Chen & Lin, 2020). The concept of business intelligence is a platform for applying Internet technology that impacts practice, psychology, society, and business to encourage deep integration of the Internet, big data, artificial intelligence, and technology that can stimulate business growth in the real economy. Current economic conditions with various technology applications will continuously improve various business operations. Several companies require operations to continually increase profitability by maximizing new information technology and techniques (Mikalef, Krogstie, Pappas, & Pavlou, 2020).

c. Driving Capability and Firm Performance

The driving capability has a positive effect of 0.828 on firm performance, with a t-statistic value of 21.395 and a p-value of 0.000 < 0.05. Therefore, the hypothesis " Driving capability has a positive and significant effect on firm performance" (H3) is accepted. Information processing theory in several case studies shows that there is a relationship between business intelligence and firm performance; this theory still needs to be studied in more depth because the theoretical proof is needed to be able to interpret the relationship between business intelligence and firm performance as well as various other influencing factors such as optimization. Decision-making, cognitive enhancement, and various environmental changes can further explain the impact of business intelligence on firm performance (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Resource-based view is a study theory on business intelligence that explicitly considers the relationship with firm performance as a dependent variable (Chen & Lin, 2020). Firm performance is an important factor that allows companies to understand the market and develop product and service strategies to meet customer and market needs (Mikalef, Krogstie, Pappas, & Pavlou, 2020). Companies that want to achieve high firm performance have a basis for faster improvement, reflected in the success of the company's new superior products, profitability, market share, and sustainable competitive advantage (Canch, Liem, & Thu, 2019).

6. CONCLUSION

Based on the analysis and discussion presented, the following conclusions can be drawn (1) Sensing capability has a positive effect of 0.877 on transforming capability with a t-statistic value of 34.272 and a p-value of 0.000 < 0.05. Therefore, the hypothesis that " Sensing capability has a positive and significant effect on transforming capability " (H1) is accepted (2) Transforming capability has a positive effect of 0.904 on driving capability with a t-statistic value of 48.390 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Transforming capability has a positive and significant effect on driving capability" (H2) is accepted (3). The driving capability has a positive effect of 0.828 on firm performance, with a t-statistic value of 21.395 and a p-value of 0.000 < 0.05. Therefore, the hypothesis that driving capability positively and significantly affects firm performance" (H3) is accepted.

REFERENCES

Bozic, & Dimovski. (2019). Business Intelligence and Analytics for Value Creation: The Role Absorptive Capacity. International Journal of Information Management, 46(1),93–103. https://doi.org/10.1016/ j. ijinfomgt. 2018.11.020

Canch, Liem, & Thu. (2019). The Impact of Innovation on the Firm Performance and Corporate Social Responsibility of Vietnamese Manufacturing Firms. Journal of Sustainability,11(13),1-14. https://doi.org/10.3390/su11133666

Chen, Y., & Lin, Z. (2020). Business Intelligence Capabilities and Firm Performance: A Study in China. International Journal of Information Management, 57(3),1-15. https://doi.org/10.1016/j.ijinfomgt.2020.102232

Conboy, Mikalef, Dennehy, & Krogstie. (2020). Using Business Analytics to Enhance Dynamic Capabilities in Operation Research: A Case Analysis and Research Agenda. European Journal of Operational Research,281(3), 656-672. https://doi.org/10.1016/j.ejor.2019.06.051

Craig, Dibrell, & Garrett. (2014). Examining the Relationship Among Family Influence, Family Culture,

https://doi.org/10.52970/grmapb.v5i1.793

Website: https://goldenratio.id/index.php/grmapb ISSN [Online]: 2776-6349

Flexible Planning Systems, Innovativeness, and Firm Performance. Journal of Family Business Strategy, 5(3),229-238. https://doi.org/10.1016/j.jfbs.2013.09.002

Davis, F. (1989). Perceived Usefulness, Ease of Use, and User Acceptance of Information Technology.MIS Quarterly, 13(3), 319–340. https://doi.org/10.2307/249008.

Kar, & Dwivedi. (2020). Theory Building with Big Data-Driven Research Moving Away from the What Towards the Why. International Journal of Information Management,54(4),1–30. https://doi.org/10.1016/j.ijinfomgt.2020.102205

Mikalef, Krogstie, Pappas, & Pavlou. (2020). Exploring the Relationship Between Big Data Analytics Capability and Competitive Performance: The Mediating Roles of Dynamic and Operational Capabilities. Information & Management,57(2),103-169. https://doi.org/10.1016/j.im.2019.05.004

Philipp, M., Sam, D., & Michael. (2018). Global Competition with AI in Business: How China Differs. MIT Sloan Management Review,5(2),50–70.

Ransbotham, & Kiron. (2017). Analytic As a Source of Business Innovation. MIT Sloan Manage,3(3),1–21.