

Development and Measurement of Six Capitals in Automotive Parts Manufacturing Companies in Indonesia and Malaysia



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<https://doi.org/10.18280/jesa.570226>

ABSTRACT

Received: 29 February 2024

Revised: 1 April 2024

Accepted: 9 April 2024

Available online: 28 April 2024

Keywords:

six capitals, enterprise value, sustainable development goals, integrated reporting

This study aims to develop a six-capital measurement in the company value creation process and its implementation in the automotive parts manufacturing Industry in Indonesia and Malaysia. This study develops a six-capital measurement in the company value creation process that aligns with sustainable development goals. This study is qualitative in nature. The approach used in this research is a case study. This research uses three types of informants by conducting in-depth interviews so that each need can be properly explored. Three types of informants: regulators, academics, and practitioners in the field of sustainability reporting, audit and integrated reporting, consultants, assurers, and company actors who made sustainability reports and integrated reports with a total of eight informants. This study concludes that the proposed measurement can be used to measure the six types of capital needed in the company value creation process in the automotive parts manufacturing sector.

1. INTRODUCTION

Investors worldwide are becoming more demanding of companies, calling for high-quality, transparent, reliable, and comparable reporting on climate and other environmental, social, and governance (ESG) issues. Given the strong interest from investors, it is crucial for companies to emphasize the significance of sustainability and create shareholder value through enhanced financial performance, better management quality, and reduced risk metrics [1]. Many international institutions have responded to these investor demands, one of which is the International Financial Reporting Standards (IFRS) foundation.

The IFRS Foundation Trustees unveiled the establishment of a fresh standards-setting board, called the International Sustainability Standards Board (ISSB), on November 3, 2021. This new board's main objective is to develop a comprehensive global framework of disclosure standards that would enable investors and other capital market stakeholders to access critical information about corporate sustainability-related risks and opportunities. The aim is to facilitate well-informed decision-making among investors and stakeholders concerning climate, environmental, social, and governance issues [2]. Other (ESG) management Apart from the ISSB, the International Integrated Reporting Council (IIRC) created an Integrated Reporting Framework that conveys attention to measuring capital, which is part of sustainability performance.

The impact of qualitative factors, such as reputation, stakeholder trust, employee satisfaction, and engagement, on long-term value is greater than financial considerations alone, as per the findings [1]. Today, investors and stakeholders are not only focused on environmental, social, and corporate

governance activities, but also on how companies transform in the value creation process [3]. The creation of value demands a comprehensive and forward-thinking approach that extends beyond conventional business practices. Companies must first reevaluate their social mission and influence, alter their performance targets and incentive systems for employees, and integrate broader stakeholder interests into their business analysis and decision-making processes [4].

The companies are successful in the value creation process if they are supported by capital. International Integrated Reporting Framework Part 2c regarding capital (capital) explains that there are 6 (six) main capitals (the six capitals) so that companies can be successful in creating value, namely financial, manufacturing, intellectual, human (human), social relationships (social relationships), and nature (natural) [5]. The significance of incorporating the six forms of capital into the theoretical foundation of value creation is crucial for organizations to take into account all types of capital they utilize [6].

The business model of an organization requires certain essential elements, known as capital elements, which are utilized as inputs in the business process and converted into outputs through various business activities. These elements are constantly flowing and interacting with each other both within and outside the organization [7]. In simpler terms, a company's long-term value is reflected in various forms of capital, such as financial, manufactured, intellectual, human, social, relational, and natural capitals. The organization's prosperity is directly influenced by the combination of these elements [5]. An integrated thinking perspective from the governance level determines which capital should be used to pursue value creation by an organization [8]. Companies report increased,

constant and reduced value creation processes to investors and stakeholders through integrated reporting.

In previous research that related to the integrated reporting during 2019 until 2020 [3, 9-13] shows that integrated reports can contribute to explaining the process of creating company value through the concept of 6 (six) capital, namely financial capital, manufactured capital, intellectual capital, human capital, social and relationship capital and natural capital. However, these studies have not explained how the value creation process is created and measured which is the focus or contribution of the integrated report.

This research conducted an initial study using Harzing's Publish or Perish 7 which was carried out for the research period from 2019 to 2022 with a total of 2,200 observation articles originating from 200 cross-references data and 2,000 Google Scholar articles. It was concluded that research related to the measurement of the six capitals is still very limited and therefore in-depth research is needed regarding the measurement of the six capitals. For six capital measurements, this research creates questions that will be answered through research methods in accordance with academic principles. The research questions were as follows:

RQ1. How can we measure six capitals for value creation in automotive parts manufacturing companies?

RQ1a. How can Financial Capital be measured for value creation in automotive parts manufacturing companies?

RQ1b. How can Manufactured Capital be measured for value creation by automotive parts manufacturing companies?

RQ1c. How can Human Capital be measured for value creation in automotive parts manufacturing companies?

RQ1d. How can Intellectual Capital be measured for value creation for automotive parts manufacturing companies?

RQ1e. How can Social and Relationship Capital be measured for value creation for automotive parts manufacturing companies?

RQ1f. How can Natural Capital be measured for value creation by automotive parts manufacturing companies?

RQ2. How are the six capital measurements implemented to support value creation in automotive parts companies in Indonesia and Malaysia?

2. MATERIALS AND METHODS

This research is qualitative, involving questions and procedures that arise, data in the participants' surroundings, the inductive development of data analysis from specific to broader themes, and the interpretation of data significance by researchers. This research approach is a case study. A case study is a research method that entails the empirical examination of a specific current occurrence within a genuine environment, employing various evidence sources [14].

This qualitative research uses an explanatory case study approach, namely, a case study that is used to explore and identify a cause-and-effect relationship. Generally to answer the questions "Why" (Why) something happens (such as motivation or causal factors) and "How" (How) can happen (mechanism).

This research uses three types of informants by conducting in-depth interviews so that each need can be properly explored in this research. The three respondents are regulators, academics and practitioners in the field of sustainability reporting, audit and integrated reporting, both consultants,

assurers and company actors who make sustainability reports and integrated reports.

The unit of analysis in this study was a company. This study focuses on automotive component companies operating in Indonesia and Malaysia because they have the same characteristics and work culture. Automotive component companies are used as research objects because automotive component companies are part of automotive companies which are a mainstay sector that has a large contribution to the national economy, in the processing industry sector which contributes 20% every year to gross domestic product (GDP) and absorbing as many as 17.5 million workers.

Meanwhile, industrial sector exports contributed 80.3% to total national exports of 163.3 billion United States dollars for the 2020 period, with a realized investment value in the industrial sector of IDR 272.9 trillion.

This research is qualitative and uses case studies. The sample was used to identify the informants who would be selected for this research using a purposive sampling technique. Purposive sampling is a sample determination method by selecting samples based on certain criteria set by the researcher.

The exploratory research is to explore and enhance understanding, uncover novel concepts, and refine problem formulations, with the ultimate goal of determining whether additional research is necessary. This constitutes an exploratory research endeavor. Exploratory research usually develops only one existing hypothesis. This research aims to provide definitions and explanations of concepts and patterns that will be used in further research.

In the initial part of this study, a research questionnaire was developed by conducting a theoretical content analysis for each measurement of the six capitals. In the initial process there were 12 measurements for each capital which would be proposed as measurements of the six capitals, by carrying out a more in-depth selection, 6 were obtained. Stronger measurement and in line with the value creation process of each capital with a summary of the conclusions from the proposed measurement of each capital.

The proposal to measure financial capital is to strengthen the value created by the strength of financial capital to achieve the continuity of the company's business or going concern in the company's business. The proposal for measuring manufactured capital is to strengthen the idea that measuring manufactured capital can reflect the level of effectiveness and efficiency of a company's production regarding the use of its production capital. The proposal for measuring human capital is to strengthen that measuring human capital can reflect the level of security, comfort and work productivity due to the use of human capital in the company.

The proposal for measuring intellectual capital is to strengthen the idea that measuring intellectual capital can reflect the level of effectiveness of a company's innovation in the use of its intellectual capital. The proposal for measuring social and relationship capital is to strengthen the idea that measuring social and relationship capital can reflect the level of stakeholder trust in the company. The proposal for natural capital measurement above is intended to strengthen that natural capital measurement can reflect the company's seriousness in running a sustainable business.

A pilot study was conducted to strengthen the six proposed capital measurements used in this research. After the questionnaire was prepared, a list of questions was confirmed by conducting a pilot study with experts in each field with a

focus on each of the six capital measurements that would be proposed. Table 1 shows the measurement details for each capital:

Table 1. Six capital measurements

No	Measurement	Capital
1	Free cash flow	Financial
2	Audit opinion	Financial
3	Net assets	Financial
4	RCSE	Financial
5	RNOA	Financial
6	DER	Financial
7	OEE	Manufactured
8	Production capacity	Manufactured
9	Production efficiency	Manufactured
10	Production utilities	Manufactured
11	Production quality	Manufactured
12	Automation technology	Manufactured
13	Ethics and compliance training	Human
14	Level of employee satisfaction and engagement	Human
15	The number of times a work accident occurred	Human
16	Total employee costs	Human
17	Human Capital ROI	Human
18	Labor availability	Human
19	Total R&D	Intellectual
20	New technology	Intellectual
21	Patents & IPR	Intellectual
22	Management knowledge	Intellectual
23	Market Insights	Intellectual
24	Organizational culture	Intellectual
25	Customer relations	Social & Relationships
26	Supplier relationships	Social & Relationships
27	Strategic partner relationship	Social & Relationships
28	Industry association relations	Social & Relationships
29	R&D relations	Social & Relationships
30	Government and regulator relations	Social & Relationships
31	Carbon footprint	Natural
32	Energy consumption	Natural
33	Water consumption	Natural
34	Use of renewable and non-renewable raw materials	Natural
35	Total waste and recycling	Natural
36	Ecosystem and biodiversity impacts	Natural

3. RESULTS

The initial step in this research was to find a phenomenon related to the importance of measuring six capital items in

companies in the value creation process. The questions were in the form of structured questions that began by asking about the approval of the proposed use of financial capital measurements to the eight informants with the following results:

3.1 Financial capital

- a. All informants agree that free cash flow as a financial capital measurement.
- b. Three informants did not agree that audit opinion was used as a measurement of financial capital, namely IM1, IM4, and IM8, all of whom were of the opinion that audit opinion with a going-concern emphasis could not be used as a measurement of financial capital because it was not a measurement.
- c. All informants agree that net asset as a financial capital measurement.
- d. There were 3 informants who did not agree that RCSE was a measurement of financial capital because if they only used common stock as a measurement, it was felt that it did not fully take into account the capital owned by the company (IM5). According to IM6, he disagrees because other factors influence RCSE measurements. Meanwhile, IM7 disagrees because the performance of returns on capital or debt does not guarantee that the company is concerned about ESG activities when viewed from the perspective of the company's overall operations.
- e. One informant did not agree with RNOA as a measurement of financial capital, namely IM7, assuming that the performance of returns on capital or debt does not guarantee that the company is concerned about ESG activities from the perspective of the company's overall operations.
- f. Two informants did not agree with the DER as a measure of financial capital: IM6 and IM7. According to IM6, DER is not the main choice for financial capital, whereas IM7 uses the same assumption that the performance of returns on capital or debt does not guarantee that the company is concerned about ESG activities when viewed from the perspective of the company's overall operations.
- g. The proposed financial capital measurements are included in the main choices of each informant, and there are proposed financial capital measurements that are input from the informants, namely net income, EBITDA and Dividend per share.
- h. IM6 and IM7 emphasize that many financial capital measurements can still be adapted to a company's operating business.
- i. All informants agreed that the value created from financial capital is sustainable in operations and business (going concern).
- j. The summary of financial capital measurement is shown in Table 2.

Table 2. Financial capital measurement results

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	Free cash flow	√	√	√	√	√	√	√	√	8
2	Audit opinion	√	×	√	×	√	√	√	×	5
3	Net assets	√	√	√	√	√	√	√	√	8
4	RCSE	√	√	√	√	×	×	×	√	5
5	RNOA	√	√	√	√	√	√	×	√	7
6	DER	√	√	√	√	√	×	×	√	6
7	Three main measurement options	1,2,3	1,3,4	1,3,5	1,3,4	2,6,1	3,1,5	1,2,3	1,3,5	6

8	Another measurement proposal	None	None	NI, Ebitda, DPS	Many More	None	Many More	Many More	None	3
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of financial capital is sustainability in operations and business (going concern)	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

Some important comments from the informant interviews related to financial capital measurement are as follows:

“Why do I not agree with RCSE, RNOA and DER as measurements of financial capital? If you look holistically at a company, it is not necessarily a company with a good level of return on capital and debt. In this case, if related to debt, it is a good level of collectability in terms of debt repayment that has good ESG-related initiatives. When conducting internal research, how do companies pay back their debt, but how? The company's mindset towards environmental stewardship is bad, while companies with poor collectability at Levels 4 and 5 have good ESG initiatives. The argument is that the collectability is poor because the funds are allocated first to ESG initiatives which have long returns.” --IM7 (OJK)

3.2 Manufactured capital

From the questions asked, there are discussion points of important concern in the proposed measurement of manufactured capital submitted by informants:

- All the informants agreed with the proposed measurement of manufactured capital.
- Manufactured capital measurement is included in the main choices of each informant, and manufactured capital measurements are input from the informants, namely, Production Volume, Sales Volume and Production Safety.

- IM6 emphasized that there are still many manufactured capital measurements that can be adapted to the company's business operations.
- All informants agreed that if there was a company that did not measure its company capital, it could mean that management did not care about the value of the company which was built from the company's capital.
- All informants agreed that the value created from manufactured capital reflects the level of effectiveness and efficiency of the company's production.
- The summary of manufactured capital measurement is shown in Table 3.

A significant explanation can be taken into consideration from expert comments related to the measurement of manufactured capital.

“OEE is the main thing, a high OEE describes how the production process runs. High availability describes the level of reliability/reliability of the production machine, and high Production Efficiency describes a process with a high value-added job, which is greater than that of a non-value-added process. A high product quality indicates process capability (Cp/CpK). With high OEE, production costs will be low, which will ultimately increase profitability and factory utility. High factory utilization indicates how effectively the money invested provides a level of return. Automation technology is a must so that companies can maintain competitiveness as measured by QCD.” – Manufacturing expert

Table 3. Manufactured capital measurement

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	OEE	√	√	√	√	√	√	√	√	8
2	Production capacity	√	√	√	√	√	√	√	√	8
3	Production efficiency	√	√	√	√	√	√	√	√	8
4	Factory utilities	√	√	√	√	√	√	√	√	8
5	Production quality	√	√	√	√	√	√	√	√	8
6	Automation technology	√	√	√	√	√	√	√	√	8
7	Three main measurement options	1,6,5	1,2,6	1,2,3	1,6,5	1,3,6	2,1,5	1,3,4	1,2,3	6
8	Another measurement proposal	No	No	Prod Vol & Sales Vol	Prod Safety	No	Many More	No	No	3
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of manufactured capital can reflect the level of effectiveness and efficiency of the company's production	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

Manufacturing experts also provided other measurement suggestions, in addition to the six financial capital measurements proposed in the interview questions:

The six Manufactured Capital measurements above are all related to machines but do not directly include the MAN and MATERIAL factors. Therefore, it is important to add manpower productivity and material efficiency, which

describe the efficiency of the production process, to avoid WASTE.

$$ME = (\text{Raw Material} - \text{Waste Material}) / \text{Raw Material} \times 100\%$$

ME 100%, indicating that no material was wasted during the WASTE. All materials become Finish Goods

"By adding 2 Manufactured Capital Measurements, the manufactured capital measurement includes aspects of MACHINE, MATERIAL, MAN" - Manufacturing expert.

3.3 Human capital

Based on the inquiries made, there are essential topics of human capital measurement outlined in the proposals put forth by the interviewees.

- Only IM6 disagrees with measuring the level of employee satisfaction and involvement as well as total employee costs as a proposed measurement of human capital because the level of satisfaction and involvement does not necessarily affect the level of employee productivity, nor does a large amount of employee costs necessarily be a positive indicator of human capital productivity. at the company.
- Not all proposed human capital measurements were included in the main choices of each informant. Employee costs were not the main choice for the eight interviewees.
- There is a proposal for measuring human capital, which is input from informants, namely Talent Turnover and

Metal Health.

- IM6 emphasizes that there are still many human capital measurements that can be adapted to a company's business operations.
- All informants agreed that if there was a company that did not measure its company capital, it could mean that management did not care about the value of the company which was built from the company's capital.
- All informants agreed that the value of human capital reflects their levels of security, comfort, and work productivity.
- The summary of human capital measurement is shown in Table 4.

A significant explanation can be taken into consideration from expert comments related to measuring human capital as follows:

"Human capital refers to how companies invest in employees who have the best potential, competence, and performance; therefore, training and development efforts are very important. The Employee Engagement Index measures the level of commitment and involvement of talent in the profession and company, resulting in high performance/productivity (not just satisfaction). HC ROI measurement provides an illustration of the extent to which the returns from organizational intervention in human capital provide financial results and the extent to which talent contributes to the company's value creation." – Human Capital Experts.

Table 4. Human capital measurement results

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	Ethics and compliance training	√	√	√	√	√	√	√	√	8
2	Level of employee satisfaction and engagement	√	√	√	√	√	×	√	√	8
3	The number of times a work accident occurred	√	√	√	√	√	√	√	√	8
4	Total employee costs	√	√	√	√	√	×	√	√	8
5	Human Capital ROI	√	√	√	√	√	√	√	√	8
6	Availability of labor	√	√	√	√	√	√	√	√	8
7	Three main measurement options	1,5,3	1,3,6	1,3,6	2,5,3	1,5,2	1,3,5	5	1,3,6	6
8	Another measurement proposal	No	No	No	Talent	No	Many More	Mental health	No	3
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of human capital reflects the level of security, comfort and work productivity	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

3.4 Intellectual capital

Based on the questions posed, it is evident that there are significant points of discussion regarding the proposed human capital measurements put forth by informants, which warrant careful consideration.

- IM6 disagree with the total research and development costs because it is not the size of the company that has good innovation and the number of patents it has registered because not all companies have registered patents.
- All informants agree that new technology as an intellectual capital measurement.
- IM7 is 50% agrees with patents because not all companies have registered patents.

- All informants agree that management knowledge and market insight as an intellectual capital measurement.
- IM 4 disagree with organizational culture as intellectual capital because there any many factors that influence the organizational culture.
- All proposed intellectual capital measurements were included in the main choices of each informant.
- There is a proposal for measuring intellectual capital, which is input from the informants, namely, the number of new products, the number of new innovations, and the transfer of technology or knowledge proposed by IM3, IM4, and IM7. In the automotive industry, car manufacturing companies are currently conducting technology and innovation transfer activities for their suppliers. PT Hyundai Motor Manufacturing Indonesia (PT HMMI) is a car manufacturer that actively carries out

innovation, technology transfer, and coaching activities. HMMI conducts a coaching project for all its suppliers so that they can design their own products. This project started in 2021; therefore, the proposed number of product innovations can be implemented in this industry.

- h. All informants agreed that if there was a company that did not measure its company capital, it could mean that management did not care about the value of the company which was built from the company's capital.
- i. All informants agreed that the value achieved from the use of intellectual capital could reflect the level of effectiveness of the company's innovation.
- j. The summary of intellectual capital measurement is shown in Table 5.

There are 25% of informants who choose organizational culture as the main choice for measuring intellectual capital, and According to the Toyota Way, organizational culture is of paramount importance. The Toyota Way is a collection of principles that establish the cultural foundation of Toyota Motor Corporation. In 2001, the company formally adopted these principles after years of academic research on the Toyota Production System and its potential applications in lean manufacturing for other organizations. The two key tenets of the Toyota Way are respect for people and constant improvement.

The conclusion from the results of interviews with informants is that all the proposed measurements can be the main measurements of intellectual capital, but there are still many other measurements that can be used according to the type of company business and the information to be conveyed.

Table 5. Intellectual capital measurement result

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	Total R&D	v	v	v	v	v	x	v	v	7
2	New technology	v	v	v	v	v	v	v	v	8
3	Patents & IPR	v	v	v	v	v	x	50%	v	6.5
4	Management knowledge	v	v	v	v	v	v	v	v	8
5	Market insights	v	v	v	v	v	v	v	v	8
6	Organizational culture	v	v	v	x	v	v	v	v	7
7	Three main measurement options	1,2,6	1,2,3	1,2,3	3,4,1	1,6,4	2,4,5	1	1,2,3	6
8	Another measurement proposal	No	No	No of new products	No of new innovation	No	No	Technology transfer	No	3
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of intellectual capital can reflect the level of effectiveness of a company's innovation	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

3.5 Social and relationship capital

Based on the inquiries, there are several topics of significant importance within the suggested methodology for assessing social and relationship capital presented by the informants:

- a. All informants agree with the five proposal measurement except the R&D relation, there are four informants did not agree with the relationship between R&D as a measure of social and relationship capital because they concluded that there was no relevance to the relationship between R&D as part of social and relationship capital.
- b. All the proposed social and relationship capital measurements were included in the main choices of each informant.
- c. There is a proposal for measuring social and relationship capital, which is input from informants, namely social investment and CSR activities, proposed by IM4 and IM5, respectively.
- d. All informants agreed that if there was a company that did not measure its company capital, it could mean that management did not care about the value of the company which was built from the company's capital.
- e. All informants agreed that the value to be achieved from the use of social and relational capital can reflect the level

of stakeholder trust in the company.

- f. The summary of social & relationship capital measurement is shown in Table 6.

Fifty percent of the informants chose relations with the government and regulators as their main focus. IM7, who comes from the Financial Services Authority, reminded us that it is important to have a relationship with the government, but IM7 reminded us that there should be no corruption or bribery in that relationship. The following are the comments from IM7.

"The important thing is to have good relations with each party, but don't bribe. Usually, in good relationships, there are bribes, but it must be beyond that for the best. Relationship without bribery." –IM7 (OJK)

Relations between the government and regulators are very important for the industry, as is the case in the automotive industry in 2021. The government amended PMK No. 31/PMK.010/2021 through PMK Number 77 of 2021, which pertains to PPnBM on the delivery of BKP classified as luxury in the form of motorized vehicles covered by the government for the 2021 Fiscal Year. The amendment was made by the Minister of Finance. The policy issued by the government at the time of Covid-19 is a manifestation of good relations

between the government and the automotive industry, which directly and indirectly contributed positively to the Indonesian economy at that time. The conclusion from the results of the

interviews with informants is that all the proposed measurements can be the main measurements of social and relationship capital.

Table 6. Social and relationship capital measurement result

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	Customer relations	v	v	v	v	v	v	v	v	8
2	Supplier relationships	v	v	v	v	v	v	v	v	8
3	Strategic partner relationship	v	v	v	v	v	v	v	v	8
4	Industry association relations	v	v	v	v	v	v	v	v	8
5	R&D relations	v	x	x	x	v	v	v	x	4
6	Government and regulator relations	v	v	v	v	v	v	v	v	8
7	Three main measurement options	1,2,3	1,4,6	1,4,6	1,2,6	1,2,3	1,2,5	1,2	1,4,6	6
8	Another measurement proposal	No	No	No	Social investment	CSR	No	No	No	2
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of using social & relationship capital reflects the level of stakeholder trust in the company	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

3.6 Natural capital

From the questions asked, there are discussion points of important concern in the proposed measurement of natural capital submitted by the informants:

From the questions asked, there are discussion points that are of important concern in the proposed measurement of natural capital submitted by the informants:

- a. Only IM4 disagrees with the carbon footprint as a measurement of natural capital, because it should not produce carbon.
- b. All proposed natural capital measurements were included

in the main choices of each informant.

- c. There were no additional proposals for measuring natural capital because the informants felt that all the proposed measurements were sufficient to represent all elements.
- d. All informants agreed that if there was a company that did not measure its company capital, it could mean that management did not care about the value of the company which was built from the company's capital.
- e. All informants agreed that the value achieved from the use of natural capital could reflect the company's seriousness in running a sustainable business.
- f. The summary of natural capital measurement is shown in Table 7.

Table 7. Natural capital measurement results

No	Measurement	IM1	IM2	IM3	IM4	IM5	IM6	IM7	IM8	Total
1	Carbon footprint	v	v	v	X	v	v	v	v	7
2	Energy consumption	v	v	v	v	v	v	v	v	8
3	Water consumption	v	v	v	v	v	v	v	v	8
4	Use of renewable and non-renewable raw materials	v	v	v	v	v	v	v	v	8
5	Total waste and recycling	v	v	v	v	v	v	v	v	8
6	Ecosystem and biodiversity impacts	v	v	v	v	v	v	v	v	8
7	Three main measurement options	1,2,3	1,2,3	1,2,3	2,3,6	1,4,5	2,4,6	2,3,4	1,2,3	6
8	Another measurement proposal	No	No	No	No	No	No	No	No	0
9	If a company does not have three main measures, do you think that the company is not concerned about the company value that should be created from that capital?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
10	The value of using natural capital can reflect the company's seriousness in running a sustainable business	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	8

Fifty percent of the informants chose carbon footprint, total energy consumption, and total water consumption as the main choices in measuring natural capital, and felt that these three measurements were sufficient to represent the measurement of natural capital. There are comments from experts related to measuring natural capital, which need to be considered in this research.

"If the company has not carried out measurements on

energy, GHG emissions and waste, then it can be assumed that the company has not managed its natural capital well, because without management it can cause degradation of natural capital, depletion of renewable and non-renewable energy stocks, loss of biodiversity, to cause business risks and can affect company value." – Sustainability expert

"Measuring natural capital can be an indicator that shows a company's seriousness in running a sustainable business. However, for the automotive industry sector, other efforts that

can reflect sustainable practices include the management and use of technology in the production process, system automation, procurement of produce capital from a sustainable supply chain, and creative and innovative management of human capital to create product designs (output) that are environmentally friendly.” – Sustainability experts.

The six types of capital are related to each other in the company's value-creation process. All efforts made in managing the six capitals must be carried out in a balanced manner by management to fulfill each stakeholder's expectations, which are connected to the output and outcome resulting from the use of each capital in the six capitals. Each piece of capital produces its own value, which is ultimately returned to the company. All of this must be done with awareness and not be a positive management initiative, but part of the company's vision and mission, so that the targets to be achieved will become an integrated part (integrated thinking) of those responsible for corporate governance.

4. DISCUSSION CASE STUDY

4.1 Measuring the six capitals and the company's value creation process





This research was conducted at automotive parts









manufacturing companies located in Indonesia and Malaysia, a holding company engaged in automotive parts manufacturing with branches in various countries, including Indonesia. The company registered on the stock exchange in Malaysia. It is a Malaysian automotive parts manufacturer that has developed into a major regional supplier, and is now heading to the global market.

The business creates, assembles, and distributes car and train parts, including seats, air conditioning, wiring, coil springs, and other components, through its subsidiaries and affiliated entities. It produces a variety of automotive parts, such as interiors, radiators, and tapered leaf springs. The company has a workforce of around 3,897 people, making it one of the largest suppliers of automotive parts and components in Malaysia, and is present in the United States (“US”), Australia, the Netherlands, the United Kingdom, the Republic of Indonesia, Vietnam, Myanmar, and Thailand. The Company’s business is driven by five business divisions, namely Suspension, Electrical and Heat Exchange, Interior and Plastics, Marketing and Indonesia, with support coming from Unreported Segments and Other Segments.

A company registered on the stock exchange in Malaysia, must comply with stock exchange regulations in Malaysia. In September 2022, Bursa Malaysia announced a phased approach to implementing enhanced sustainability reporting requirements for public companies (PLCs), starting at the end of the 2023 financial year.

Table 8. Value creation process

Six Capitals	Inputs	Business Process	Outputs	Outcomes	Enterprise Value	SDG's
Financial Capital: Free cash flow Going concern opinion Net assets Debt to Equity Ratio (DER)	RM 32,318,000		Net income: RM 41,683,000	Stock price 2022 RM1.83	FRUGALITY	
	Unmodified opinion		EBITDA: RM 123,824,000			
	RM		Operating income: RM 43,699,000			
	1,352,990,000		Return on common shareholders' equity: 18.990%			
	10%		Return on net operating assets (RNOA): 2.436%			
			Gross dividend per share (sen): RM 14 cents			
			Total number of training: 12			
			Total number of training hours: 48			
			Total lost time for injury: 4.7 hours			
			Total injury cases: 45			
Human Capital: % Employees to complete training Total employees	100%		Human Capital ROI: 1.45	Employee engagement index N/A Employee satisfaction index N/A Talent turnover N/A	PERSEVERANCE & DILIGENCE	
	3,897					

<p>Manufactured Capital: Production Capacity</p> <p>The plastic segment (Polyurethane)</p> <p>The plastic segment (Injection & Extrusion)</p> <p>For modules safety belts</p> <p>Total plants</p>	<p>Per month</p> <p>35,000 vehicle sets</p> <p>30,000 vehicle sets</p> <p>3,000 vehicle sets</p> <p>18,000 vehicle sets</p> <p>24 plants</p>		<p>Overall Equipment Effectiveness</p> <p>Electrical & Heat</p> <p>Exchange division: 91.30%</p> <p>Suspension division: 92.50%</p> <p>Interior & Plastic division: 100%</p> <p>Marketing division: 84.50%</p> <p>Indonesian division: 84.10%</p> <p>Energy consumption: 37,000 MWH</p> <p>Water consumption: N/A; New KPIs for 2023</p> <p>Suppliers environment assessment: 98.90%</p>	<p>Overseas market / Export coverage 8 countries</p>	<p>24/7 MINDSET</p>	
<p>Natural Capital:</p> <p>Raw material consumption</p> <p>Metal</p> <p>Plastics</p> <p>Paper/Carton boxes</p> <p>Containers</p> <p>Fabric / PVC sheets</p>	<p>Recycle/Reused Melt/Form</p> <p>Re-Palleted & Used</p> <p>Re-Process & Reused</p> <p>For foam production</p>		<p>Company manufacturing system score 4.15</p>	<p>Optimization of RM usage</p> <p>reduction of CO2 emissions (GHG Emissions): 1,381 Ton CO2 eq</p>	<p>COURAGE</p>	
<p>Intellectual Capital:</p> <p>Total Cost</p> <p>Research & Development</p> <p>Knowledge Management</p> <p>Total</p> <p>Technology used</p> <p>Market Insights</p> <p>Organizational Culture</p>	<p>17,205,000</p> <p>Company manufacturing system</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>		<p>Realization of CSR fund activities: RM 55,000</p>	<p>Appreciation awards 2022: 6 Customers Awards</p>	<p>INNOVATION & CREATIVITY</p>	
<p>Social & Relationship Capital:</p>	<p>Customer relationship</p> <p>Supplier relationship</p> <p>Strategic partnership relationships</p> <p>Industrial association relationships</p> <p>Research & Development relationships</p> <p>Government and regulation relationship</p>		<p>Number of external stakeholder engagement activities: 6 activities</p> <ol style="list-style-type: none"> 1. Customer activity 2. Government & regulators 3. Principal partners 4. Competitors 5. Supply chain partners 6. Local communities 	<p>Number of CSR beneficiaries: N/A; new KPIs for 2023</p>	<p>TRUSTWORTHINESS & INTEGRITY</p>	

The objective of Bursa's enhanced disclosure requirements is to guide Malaysian public listed companies (PLCs) towards embracing and disclosing sustainability practices that will enhance their resilience and competitiveness. This approach is expected to attract more capital to support the transition to net zero. Furthermore, the phased implementation of these enhanced disclosure requirements by Bursa Malaysia will encourage PLCs to increase their commitment to sustainability reporting. With new regulations that must be implemented in 2023, this research can help companies assess whether important points in these regulations have been reported and communicated well.

The core component of an organization is its business model, which integrates various forms of capital as inputs and, through its operations, transforms them into outputs (such as products, services, by-products, and waste). The business activities and outputs of an organization have an impact on capital. The adaptability of a business model to evolving circumstances (including the accessibility, quality, and cost of inputs) can have a lasting impact on the sustainability of an organization (IIRC, 2021). The entire business process carried out by the Company with all the capital it has is to achieve the company value that has been determined with a summary of the Company's value creation process, as shown in Table 8 Company value creation process.

Based on the research results for each capital owned and the company's value creation process, it is concluded as follows:

1. Financial capital

A company with free cash flow of RM32,318,000 and total net assets of RM1,352,990,000 and a DER ratio of 10% supported by an unqualified audit opinion can produce a net profit output of RM41,683,000, EBITDA RM123,824,000, operating profit RM43,699,000, Return on Common Shareholders' Equity is 18,990% and Gross dividend per share (sen): RM 14 cents. So the market appreciates the company's share price at the end of 2022 by RM1.83. In accordance with one of the company's values, namely simplicity, it is hoped that the efficient use of the company's financial capital can produce maximum results from every company operational process and contribute to one of the themes of sustainable development goals, namely decent work and economic growth.

2. Human capital

The company has a total of 3,897 employees with 100% training fulfillment which can produce 48 hours of training with a total of 4.7 hours of work accidents per year and a human capital ROI of 1.45, which is in accordance with the company value built, namely perseverance which is expected to contribute to One of the themes of sustainable development goals is gender equality and quality of education.

3. Manufactured capital

The company has 24 factories with a production capacity volume of 30,000 - 35,000 sets of vehicles for plastic segment products, 3,000 sets of vehicles for modules and 18,000 vehicles for seat belt products producing an average overall equipment effectiveness (OEE) of 90% to be able to meet foreign markets with 8 marketing destination country. This manufacturing capital is expected to reflect the value of a 24/7 mindset that is continuously productive so as to contribute to the sustainable development goals of consumer and production responsibility.

4. Natural capital

The company uses production raw materials originating from metal, plastic, paper, cardboard, fabric and PVC sheets, some of which use a recycling process. Energy consumption

resulting from the production process during the year is 37,000 KWH and the company also carried out an environmental compliance assessment for each supplier in the current year of 98.90% of suppliers by achieving a carbon emission reduction target of 1,381 tons of CO₂. Innovation in changing processes using recycled materials with the target of reducing the resulting carbon emissions is a challenge to the company's value, namely courage, so that it is hoped that it can contribute to the goals of sustainable development, namely affordability and clean energy (affordable & clean energy).

5. Intellectual capital

The company has spent research and development of RM17,205,000 and has a manufacturing system that was built by itself, where based on audit results, the score for the company's manufacturing system reached 4.15 and received 6 awards from consumers during the current year. This intellectual capital can reflect the company's innovation and creativity values and contribute to sustainable development goals, namely Industry, Innovation and infrastructure.

6. Social and relationship capital

The company has good relationships with several stakeholders such as consumers, suppliers, industry associations, research and development and government relations. It is hoped that this good relationship between stakeholders can reflect the company values that are being built, namely trust and integrity and can contribute to sustainable development goals, namely partnerships to achieve goals (partnership for the goals).

Companies face significant challenges when responding to existing problems. Based on the research results, the company has not yet optimally met the expectations of all its stakeholders, especially local communities; based on this research, the total costs incurred by local communities during 2022 are only RM 55,000, or the equivalent of IDR 192 million rupiah for corporate activities. Social Responsibilities and the company have also not calculated the number of beneficiaries of the CSR activities carried out by the company.

This research provides a scientific view regarding the development of six capital measurements in companies in the value creation process, which will ultimately help the company achieve targets or directions in its contribution to sustainable development goals and the implementation of double materiality [15] which provides balance not only to the interests of shareholders (financial materiality) but also the interests of stakeholders (stakeholder materiality), which is still a challenge to achieve. It is hoped that the results of this research will serve as input that the value-creation process set by company leaders may not be fully achievable. To maximize the company's existing capital, practitioners must be able to see the overall activities of the company to achieve a balance of each company value they want to achieve, which is related to each other and the stakeholders. Especially measuring the six capitals used by companies in the value creation process, so that a balance of stakeholders' interests can be realized and adequately disclosed in sustainability reports or annual integrated reports.

5. CONCLUSIONS

The aim of this research is to develop a six-capital measurement for automotive parts manufacturing companies and its implementation in automotive parts manufacturing companies in Indonesia and Malaysia. After conducting

research by carrying out several research stages, the following conclusions were obtained:

The six capital measurements proposed in this research can be used as a reference for measuring the six capitals in automotive parts manufacturing companies. These measurements are:

- a. Financial capital: Free cash flow, audit opinion, net assets, RCSE, RNOA, and DER (6/6).
- b. Human capital – ethics and compliance training, level of employee satisfaction and engagement, number of times work accidents occur, human capital ROI, and workforce availability (5/6).
- c. Intellectual capital – Total research & development costs, Total new technology, Patents and Intellectual Property Rights (IPR), Management knowledge, Market insight, & Organizational culture (6/6).
- d. Social and relationship capital – Relationships with customers, suppliers, strategic partner, industry association, R&D, and government and regulator relationships (6/6).
- e. Manufactured capital: Overall Equipment Effectiveness, Production capacity, production efficiency, factory utility, production quality, and automation technology (6/6).
- f. Natural capital – Carbon Footprint, Energy Consumption, Water Consumption, Renewable and non-renewable raw materials, Total waste and recycling, & Ecosystem and Biodiversity Impact (6/6).

The informants agreed with each value created from each company's capital with the following details:

- a. Financial capital: The value of financial capital is continuity in operations and business (going concern).
- b. Manufactured capital: The value of manufactured capital reflects the level of effectiveness and efficiency of the company's production (effective and efficient).
- c. Human capital: The value of human capital reflects the level of security, comfort, and productivity (safety, wealth, and productivity).
- d. Intellectual capital: The value of intellectual capital reflects the level of effectiveness of a company's innovation (innovation).
- e. Social and relationship capital: The value of using social and relationship capital reflects the level of stakeholder trust in the company (trust).
- f. Natural capital: The value of using natural capital can reflect a company's seriousness in running a sustainable business (Sustainable Company).

After conducting the case study, it was concluded that there are three types of six capital measurements from all of the company's business processes: capital measurements from the input, output, and outcome processes. Finally, the results achieved by the company return to the company's value creation contribution, which can be used as the company's target or direction for development in accordance with the company's vision and mission and its contribution to Sustainable Development Goals.

Drawing from the research, professionals can evaluate the process of value creation by employing a series of analysis stages as follows:

1. Gaining insight into the company's central operations and

the business processes it undertakes.

2. Utilizing the SDG's Compass to align the company's objectives and its contributions to the SDG's.
3. Identifying measurements that are pertinent to the business processes and company values that are being created.
4. Monitoring each application of capital to ensure that it aligns with the established objectives and initial values until the desired value is achieved.

Some limitations in this research are that it has an element of subjectivity when compiling questionnaires and content analysis related to six capital measurements, but this subjectivity has been reduced by interviews with experts and confirmation from informants in the interview process, the company does not want to provide data that is considered secrecy, long bureaucracy to get the desired data, especially companies that have many subsidiaries, and inadequate knowledge from corporate sustainable finance. The other limitations of this research are the small sample size and narrow focus on the automotive sector.

Companies, especially those engaged in automotive parts manufacturing, can use the six capital measurements in this study to measure the use of six capital in the company as well as the company's value creation process. Future research can analyze a company's value creation process by contributing to the SDGs in every business process carried out by the company. Large companies that are required and have the ability to disclose the value creation process and use of their six capitals must apply appropriate measurements to evaluate whether the activities they have carried out are in accordance with the company's core business and lead to the value the company wants to achieve.

Regulators and supporting professionals, such as accountants (sustainable finance), in the process of preparing sustainability reports or integrated annual reports to expand their knowledge and understanding, especially related to the value creation process, measuring the use of the company's six capitals, and generally the process of making integrated annual reports so that they can create appropriate reports, rules, and supervision in accordance with the existing reporting framework. This study uses exploratory research, so it has a limited sample with disclosure of information in accordance with the conditions that existed at the time the research was conducted. It is hoped that further research can develop exploratory research that predicts research phenomena.

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