Organization Performance Improvement based on Baldrige Indicators with Delphi Method Approaching

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Abstract

Although more attention is paid to improvement in industry and business, little effort is made to develop the organization's overall performance, which actually underpins organizational quality improvement. This study is conducted to see the performance of an organization that is an electromedical equipment assembly company in Indonesia that in 2020 experienced a surge in jobs and experienced barriers in social activities due to the pandemic. The performance analysis was carried out using seven variables from the Malcolm Baldrige Criteria for Performance Excellence (MBCfPE) which were elaborated into 43 indicators of organizational performance. Weaknesses and strengths of organizational performance were sharpened through focus group discussions (FGD). Five experts used the Delphi approach and ended with a performance improvement solution with a priority rank, whereas the Operational variable has the highest 91% Delphi consensus result. This study contributes to performance measurement research that combines the use of US Baldrige variables, brainstorming discussion and the Delphi method.

Keywords: Performance Measurement, Baldrige, MBCfPE, Delphi

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1. Introduction

The industrial governance crisis due to COVID-19 has hit almost all countries, regardless of technological reliability, the sophistication of health services or economic independence. According to various studies in the past year, the external aspects of the organization have greatly influenced the organization's performance, be it business in general or specifically in the industrial sector throughout 2020 (Yap, 2020) and (Ahlstrom et al., 2020). External aspects that affect organizational performance include socio-economic shocks, political policies and the environment (Amarkhil, 2019). A study in 2020 was conducted for industries in the Asia Pacific, which resulted in employees still being the top priority in consideration of decision making (49%), the next is the focus of customer interests (39%), media (3%), government (1%) , leadership (1%), and others. According to the 2020 UNDP report on the actions of Asia Pacific business people, it was stated that in the period of the Cov-19 pandemic, 35% of businesses had to lay off staff, 25% postpone orders from suppliers and delay investment, 24% must reduce wages, 18% reduce service (United Nations Development Programme, 2020).

Yano Research Institute Ltd. conducted a large-scale survey of top management companies and estimated operating performance during the pandemic period. It is estimated that there will be a decline in the company's operating performance in June 2020 which is 0.92, in September 2020 with 0.83, and in December 2020 with a value of 0.73 (Yano Research Institute Ltd., 2020). Operational performance includes a group of assets, workforce, materials, and resources active in achieving one goal (Leksono et al., 2020). The report from Mckinsey released in early 2021 (Zurich et al., 2021) shows that the companies that have managed to survive are the companies that have succeeded in responding to changes to the challenges of the pandemic during 2020.

Notably, the condition of industry and business in Indonesia, apart from being influenced by the rate of investment and declining economic growth, is another challenge in the form of the large-scale social restrictions policy limiting the movement of both organizationally and in the activities of its employees. Work under pressure and restrictions on job access will decrease employee motivation. It will eventually affect organizational performance (S. A. Anggara et al., 2019). However, another research shows that managing the risks that may arise will be able to improve the company's organizational performance (Najib et al., 2019).

This phenomenon is then elaborated in this study by conducting a performance evaluation of one business organization that runs many efforts to cope with a challenging situation in 2020. This study selected one company as the research object, namely EMB, which is a local industry that focuses on the fabrication and assembly of electromedical devices located in the Serpong industrial area, Banten Province of Indonesia. This company has ISO-13485 as the standard for the production quality of several types of medical devices. Oxygen Generators is a high demand product during 2020 and successfully installed in several hospitals and assembly local-made ventilator built from research prototype.

This performance evaluation is carried out for all organization sections, not only production criteria but also other factors that build a comprehensive organization like planning, workforce, leadership, customer handling, operational processes, results, and knowledge management and performance measurement. The method chosen is the criteria in the Baldrige approach issued by the US, commonly called the Malcolm

Baldrige Criteria for Performance Excellence (MBCfPE) which contains seven criteria or seven variables (NIST, 2020).

Large companies commonly recognize performance measurement using the Baldrige because the criteria or variables evaluated represent the overall indicators of organizational performance. Baldrige criteria can be applied to government institutions (H. Anggara & Hasibuan, 2020; Widjajanto et al., 2020), hospital (Sintari, 2020), education (Thompson & Blazey, 2017) and industries. The performance measurement results are then followed by scoring known as MBNQA.

The research question is how to evaluate local business performance during the 2020 pandemic period and what to be improved. Hence, this study aims to assess the organizational performance of a local Indonesian electro-medical manufacturing, which during the Covid-19 pandemic period received a high demand for ventilator and oxygen generator products. The challenges faced, such as social restrictions, logistical difficulties, and other obstacles, will be analyzed in depth. Evaluating the organization's performance is continued by looking for gaps for improvement to improve its organizational capabilities that can compete globally based on the Baldrige criteria that multinational companies have used.

Limitation and assumption during this research:

- The baseline is Baldrige criteria version 2019-2020,
- The research is intended to find performance improvement instead of performance scoring for award ranking.
- Data collection, interview and discussion were carried out from November 2020 to January 2021.

- During data collection, the influencing factors are assumed to be constant.

2. Literature Study

Baldrige is quality management initiated by the US-Congress in 1987 and approved by the US President and outlined in the "Malcolm Baldrige National Quality Award (MBNQA) Improvement Act of 1987" on August 20, 1987 (Vinyard, 2015). Tens of thousands of companies have adopted the Malcolm Baldrige Criteria for Performance Excellent (MBCfPE) method in more than 70 countries globally. Organizations can use these criteria in improving quality which consists of seven criteria.

Criteria 1 Leadership; How do leaders define the organization's vision and mission, convey to members, and see skills in managing and inspiring members.

Criteria 2 Strategic Planning; These criteria evaluate how the strategy formulation process is defined and the content of the strategy in dealing with business dynamics in the pandemic era.

Criteria 3 Consumer Focus; These criteria evaluate how companies build relationships with customers to maintain customer loyalty.

Criteria 4 Knowledge management, analysis and performance measurement; This criteria analyses knowledge management, accounting and measures performance in organizations that bridge the overall standards.

Criteria 5 Workforce; Seeing how the company supports its personnel in carrying out activities according to company goals and develops each person's potential.

Criteria 6 Operational or process; Evaluating the implementation process, including control in operations from preparation to delivery.

Criterion 7 Results and reporting; see how the final results of the company's activities and see whether the performance of all aspects is getting more competitive, more effective, and increasing.

Along with its development, MBNQA has attracted researchers in various countries to apply performance appraisals in public services. One example is the evaluation of the performance and quality of public sector governance in Malaysia. Quality governance is associated with the organizational account, composed of five dimensions based on MBNQA criteria (Ali et al., 2017).

Thailand researcher evaluated the development paradigm of the country's modern bureaucracy over five decades. Management tools are taken from abroad with modifications from ISO. Also, PMQA (Public Sector Management Quality Award) developed from MBNQA. Raw copying of tools from outside the country into the Thai bureaucratic system became only famous in the short term because several things were irrelevant regarding organizational culture and bureaucratic procedures (Pengsuwan & Choonhaklai, 2019).

Many organizational performance appraisals have been carried out using various methods. Several countries developed their version of the way by referring to standards or practices that are already popular internationally. For example, the Thai government has tools for performance measurement in their agencies and organizations that adopt ISO and MBNQA (Pengsuwan & Choonhaklai, 2019). Then there is the SIQ, namely the Swedish Institute for Quality which was developed by adopting the MBNQA (Raharjo & Eriksson, 2017). Specifically, in several Asian countries, several articles describe the performance assessment of public service organizations such as the Batu

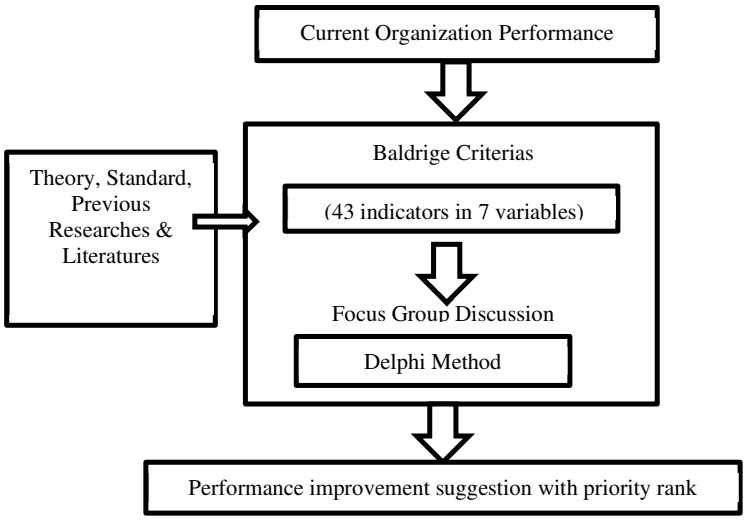
Pahat City Government Office, Malaysia (Kaliannan et al., 2014), four government institution (Custom, Immigration, Land Transport and Mining) in Malaysia (Ali et al., 2017), Indonesian Jakarta government licensing services (H. Anggara & Hasibuan, 2020) and a performance appraisal in the local government of the United Arab Emirates written by a US researcher (Furst Bowe, 2019) as well as an article on Saudi Arabia Public Service Organization written by UK researchers (Alhaqbani, 2017).

Another study originating from Europe outlines the performance appraisal of public services, namely the Lithuanian public sector, using MBNQA, EFQM & BSC. (Balabonienė & Večerskienė, 2015), Organisation in Sweden (Eriksson et al., 2016), Public and private organisations in Sweden use SIQ (Raharjo & Eriksson, 2017) and the Mayor's Office in Greece (Tasiou, 2017). EFQM is the European Foundation for Quality Management which emerged recently after the popular MBNQA (Balabonienė & Večerskienė, 2015) and Sweden (Eriksson et al., 2016).

3. Research Method

This study uses a descriptive exploratory approach using interviews and discussions in data collection. Focus group discussion (FGD) was used with experts selected based on their capabilities to summarise critical indicators that should be improved using the Delphi method. The collection of expert opinion was carried out several times to obtain focused and sharp results. The research framework is self-explained in Figure 1.

Figure 1 Research Framework



Baldrige criteria are used to measure the performance of this company, and the seven criteria are considered seven (7) variables. The variables were elaborated into 43 indicators, as shown in Table 1. The Delphi method was carried out three times the repetition of expert opinion collection on all hands associated with company performance, and accommodating ideas and analysis from these experts as part of the root cause analysis, which summarises tables in the following sections. The outcome expected is a plan to improve company performance that can be implemented in the post-pandemic period. The Delphi method is commonly used to gather expert opinion and create consensus (Iravani, 2020), (Grime & Wright, 2016), (Skinner et al., 2015). The research results are presented in a matrix, and descriptive narrative descriptions are recorded in the documentation.

Table 1. Baldrige Variables and Indicators

Variable 1	Leadership	1	Management must evaluate the company's vision and mission
		2	Evaluate consistency in vision and mission
		3	Evaluate the organization's code of ethics
		4	Improved work environment
		5	Dissemination of NEW regulations and policies
		6	Evaluate all work according to rules and policies
Variable 2	Strategic Planning	7	Quality planning
		8	Innovative proposals
		9	Evaluation of strategic planning in day-to-day work
		10	Evaluation of the success/achievement of strategic planning
		11	The flexibility of planning changes
Variable 3	Customer Focus	12	Evaluate the end-user / customer group
		13	Identify the needs of the customer
		14	Identify customer satisfaction and dissatisfaction
		15	Making decisions related to customer satisfaction
		16	Staff knowledge of the company's main customers
Variable 4	Measurement, analysis, knowledge management	17	Application of performance measurement methods (KPI)
		18	Performance results as the basis for improvement or change
		19	Alignment of employee and company performance
		20	Job information for all employees
		21	Monitoring, controlling and recording in the workplace
		22	Use of working procedures and instructions in operating tools.
Variable 5	Workforce	24	Teamwork
		25	Support for employee career advancement
		26	Employee performance appreciation
		27	Job security
		28	Evaluate employee commitment
Variable 6	Operational / Process	29	Availability of materials, spare parts and tools
		30	Evaluate the work process according to instructions
		31	All equipment is operated using approved instructions
		32	Equipment operated by authorized personnel
		33	Evaluate the use of methods and SOPs
		34	Preparation of operational schemes to deal with emergencies such as the Covid-19 pandemic
Variable 7	Results	35	Production targets are met
		36	Customer satisfaction is met
		37	Financial condition is maintained
		38	Compatibility of competencies with the final product
		39	Efforts to overcome obstacles
		40	Compliance with local industry regulations
		41	Application of national standard for ventilator production
		42	CSR support for the surrounding community
		43	Workplace comfort and safety

The Delphi method is carried out in seven steps as follows,

1. Step 1, determine a facilitator,

2.Step 2, identify and determine experts who are considered qualified in analyzing and evaluating the organization's performance that is the object of research as described in Table 2 below. All are Indonesian.

3. Step 3, compile a list of questions and problems

4. Step 4, collecting answers to the first round

5. Step 5, create summary results of the first round and collection of answers to the second round

6. Step 6, creating a summary of the data from the previous round and collecting the answers to the third round

7. Step 7, create a Delphi matrix and compile a final treatise.

Table 2 Expert Identities

No	Expert Identity involved
Expert 1	49 years old, Deputy of Operations in Calibration and Inspection Body of Indonesia MoH, Experience> 20 years
Expert 2	Age 45 years, Practitioner and owner of medical equipment workshop, Educational background: Master from the UK
Expert 3	Age 45 years, Business practitioners and Lecturers of the School of Business and Management,
Expert 4	49 years old, General Manager in the company (research object), Work experience> 20 years, Educational background: Master of Electronics
Expert 5	48 years old, Professionals in inspection and certification bodies (TUV), Work experience> 20 years

The research object is an Indonesian domestic electro-medical manufacturing and assembly factory with medium level technology. The main products that are recently delivered are oxygen generators and ventilators. This company has received an award from the Indonesia Minister of Health on National Health Day 2017 as a local industry that focuses on manufacturing medical devices. During the COVID-19 pandemic, this company is appointed as a partner by research institutes in assembling ventilator with a specific prototype model.

4. Result and Discussion

4.1 Result

The Delphi Matrix for each Baldrige variables is presented consecutively in Table 3 until 9. They show the consensus of experts, representing the importance of performance improvement actions in each Baldrige indicator. The highest value given by the expert is four (4), which means that corrective action is needed very soon, while the smallest value is one (1), which implies that no improvement is required at this time. The consensus result is calculated as a percentage. It can be monitored easily where the maximum value is four or equal to 100%, and the minimum value is one or equal to 25% means no performance improvement is needed at this time. The indicators are represented with a number from 1 until 43 to align with the Baldrige indicators in Table 1.

Table 3 Delphi Matrix for Leadership Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Leadership	1	1.33		1.67		1.33		1.33		2.00		
			33%		42%		33%		33%		50%	38%
	2	1.67		2.00		2.00		1.67		2.67		
			42%		50%		50%		42%		67%	50%
	3	1.33		1.33		1.67		1.33		2.00		
			33%		33%		42%		33%		50%	38%
	4	2.67		2.67		2.67		2.33		2.67		
			67%		67%		67%		58%		67%	65%
	5	2.67		2.00		2.67		2.33		2.33		
			67%		50%		67%		58%		58%	60%
	6	3.33		2.67		3.33		3.00		3.33		
			83%		67%		83%		75%		83%	78%

Table 4 Delphi Matrix for Strategic Planning Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Strategic Planning	7	2.67		2.67		2.67		2.67		3.33		
			67%		67%		67%		67%		83%	70%
	8	2.67		2.67		2.67		2.67		3.00		
			67%		67%		67%		67%		75%	68%
	9	3.00		3.00		3.00		3.00		3.33		
			75%		75%		75%		75%		83%	77%
	10	2.67		2.67		2.67		2.67		3.33		
			67%		67%		67%		67%		83%	70%
	11	2.33		2.33		2.67		2.33		2.33		
			58%		58%		67%		58%		58%	60%

Table 5 Delphi Matrix for Customer Focus Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Customer Focus	12	2.67		2.33		2.67		3.00		2.33		
			67%		58%		67%		75%		58%	65%
	13	2.67		2.67		3.33		3.33		2.67		
			67%		67%		83%		83%		67%	73%
	14	3.33		2.67		3.33		3.33		3.00		
			83%		67%		83%		83%		75%	78%
	15	3.00		2.33		3.33		3.33		3.00		
			75%		58%		83%		83%		75%	75%
	16	2.33		2.33		3.33		3.00		3.00		
			58%		58%		83%		75%		75%	70%

Table 6 Delphi Matrix for Measurement, Analysis and Knowledge Management (MAKM) Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
MAKM	17	3.33		2.67		3.33		3.67		3.33		
			83%		67%		83%		92%		83%	82%
	18	3.33		2.67		3.00		3.33		3.00		
			83%		67%		75%		83%		75%	77%
	19	4.00		3.67		3.67		4.00		3.67		
			100%		92%		92%		100%		92%	95%
	20	4.00		3.33		4.00		4.00		3.33		
			100%		83%		100%		100%		83%	93%
	21	4.00		3.67		3.00		4.00		3.00		

			100%		92%		75%		100%		75%	88%
	22	4.00		3.67		4.00		4.00		3.67		
			100%		92%		100%		100%		92%	97%
	23	3.67		2.67		2.67		3.67		2.67		
			92%		67%		67%		92%		67%	77%

Table 7 Delphi Matrix for Workforce Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Workforce and Manpower	24	3.33		3.33		3.33		3.33		3.00		
			83%		83%		83%		83%		75%	82%
	25	2.67		2.33		2.67		3.00		2.33		
			67%		58%		67%		75%		58%	65%
	26	3.33		3.00		3.33		3.33		3.00		
			83%		75%		83%		83%		75%	80%
	27	3.00		3.00		3.00		3.00		3.00		
			75%		75%		75%		75%		75%	75%
	28	2.67		2.33		2.67		2.67		2.33		
			67%		58%		67%		67%		58%	63%

Table 8 Delphi Matrix for Operational and Process Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Operational and Process	29	4.00		4.00		3.67		4.00		4.00		
			100%		100%		92%		100%		100%	98%
	30	3.33		3.00		3.33		3.33		3.33		
			83%		75%		83%		83%		83%	82%
	31	4.00		3.67		3.67		4.00		3.67		

			100%		92%		92%		100%		92%	95%
	32	4.00		3.33		4.00		4.00		3.67		
			100%		83%		100%		100%		92%	95%
	33	3.00		2.67		3.00		3.00		3.33		
			75%		67%		75%		75%		83%	75%
	34	4.00		3.67		4.00		4.00		4.00		
			100%		92%		100%		100%		100%	98%

Table 9 Delphi Matrix for Business Results Variable

	No	Expert 1 (average)		Expert 2 (average)		Expert 3 (average)		Expert 4 (average)		Expert 5 (average)		Consensus Result
Business Results	35	4.00		3.67		4.00		4.00		3.67		
			100%		92%		100%		100%		92%	97%
	36	3.67		4.00		4.00		3.67		4.00		
			92%		100%		100%		92%		100%	97%
	37	4.00		4.00		4.00		4.00		3.67		
			100%		100%		100%		100%		92%	98%
	38	2.67		2.67		3.00		2.67		3.33		
			67%		67%		75%		67%		83%	72%
	39	3.67		4.00		4.00		4.00		4.00		
			92%		100%		100%		100%		100%	98%
	40	3.33		3.00		3.33		3.33		3.33		
			83%		75%		83%		83%		83%	82%
	41	1.67		1.67		1.67		1.67		2.67		
			42%		42%		42%		42%		67%	47%
	42	3.00		2.67		3.00		2.67		2.67		
			75%		67%		75%		67%		67%	70%
	43	3.33		3.00		3.33		3.00		3.00		
			83%		75%		83%		75%		75%	78%

The essence or minutes of the consensus of experts is shown in Tables showing the priority of performance that must be improved is the performance in the operational / process variable with the highest agreement of 92%. The score for MAKM is 87%, and the score for result variable is 82%.

Figure 2 Fishbone for Knowledge and Performance Measurement variable

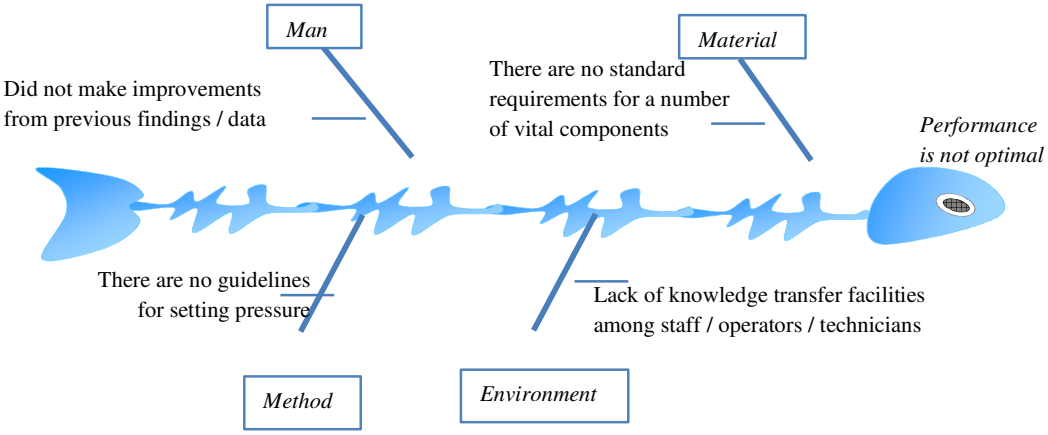


Figure 3 Fishbone for Operational and Process Variable

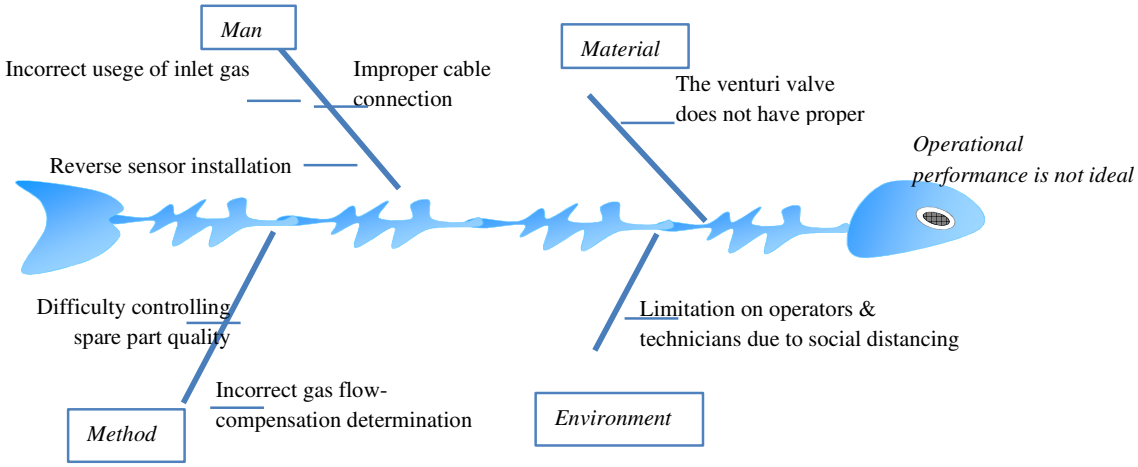
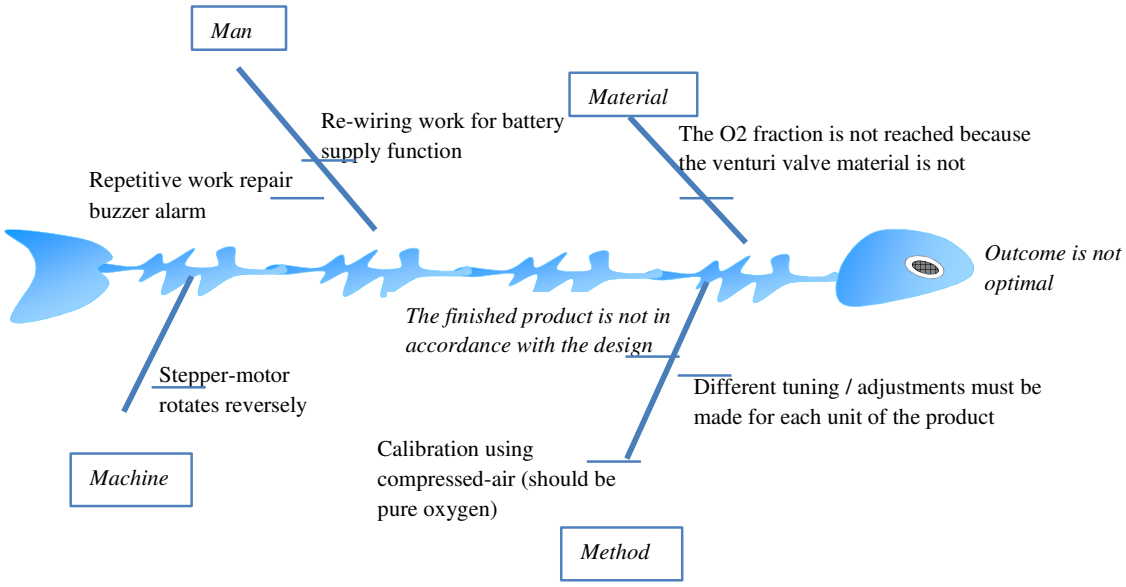


Figure 4 Fishbone for Business Result Variable



The discussion and interview also obtained several root cause analysis from the performance evaluation compiled in fishbone diagrams in Figure 2 until 4, especially for variables that, according to the expert, required corrective action.

4.2 Discussion

The research results obtained the best performance is on leadership variable or said as the lowest priority when the organization must improve their performance as briefly rewritten in Table 10 below. The highest priority is obtained on the sixth variable in the Baldrige criteria or Operational and Process variables. Align with previous research result in the application of quality management in industry (Anastasiadou & Taraza, 2019; Fatima & Mahaboob, 2018; Mellat-Parast, 2015; Parast & Golmohammadi, 2019; Savov et al., 2017; Thompson & Blazey, 2017). This research proved that the leadership factor is the primary enabler of good performance. These

results confirm the theory that leadership will drive the system, and senior staff commitment is the primary key to improve organization performance.

Table 10 Consensus Result Average on Respective Variable

	Baldrige Variables	Consensus Result	Remarks
1	Leadership	55%	The lowest priority
2	Strategi Plan	69%	-
3	Customer Handling	72%	-
4	Measurement, Analysis and Knowledge Management (MAKM)	87%	-
5	Human resources and Workforce	73%	-
6	Operational and Process	91%	The highest priority
7	Business Result	82%	-

Table 11 below is compiled from various references related to the development of organizational performance and its significant factors. These critical factors affect organizational performance, either directly or indirectly, and positively encourage or hinder organizational performance improvement. The leadership factor is a considerable factor affecting organizational performance, both positive and negative (Nandasinghe, 2020), (Parast & Golmohammadi, 2019), (Asif et al., 2019), (Ahuja et al., 2019), (Anastasiadou & Taraza, 2019), (Savov et al., 2017).

One of the pieces of the literature shows the importance of the causal relationship between leadership and information factor. The analysis is conducted quantitatively proves that leadership has a vital role in information analysis and knowledge management. (Parast & Golmohammadi, 2019). Another study examined the relationship between leadership, quality of administration, quality of medical services

and customer satisfaction using MBNQA. The research to Pakistan hospitals investigated the effect of interventions on administrative and medical care quality on the correlation between participatory senior management and customer satisfaction. In addition, organizational quality and service quality were mediators in the relationship between leadership and customer satisfaction (Asif et al., 2019).

Table 11 Significant Factors for Organizational Performance in Previous Research

Description	Previous researches
Leadership factor	(Nandasinghe, 2020), (Parast & Golmohammadi, 2019), (Asif et al., 2019), (Ahuja et al., 2019), (Anastasiadou & Taraza, 2019), (Savov et al., 2017).
Training and sharing of knowledge and attention to employee intellectual property	(Kanapathipillai & Azam, 2020), (Ahmed et al., 2020), (Muwardi et al., 2020), (Mahmud et al., 2020), (Abdul Rauf et al., 2020), (Abbas et al., 2018), (Abualoush et al., 2018), (Chaudhry et al., 2017)
Strategic Planning	(Kasushik & Guleria, 2020), (Chioke & Mbamalu, 2020), (Ahuja et al., 2019), (Anastasiadou & Taraza, 2019).
External Organization Factor (social, diplomatic, environment)	(Yap, 2020), (Ahlstrom et al., 2020), (Amarkhil, 2019)

The second factor that is considered can increase organizational performance is by improving the internal work system of the organization, which is manifested by training, sharing knowledge among members of the organization and between departments so that the main objectives of the organization are achieved with the best collective performance. (Kanapathipillai & Azam, 2020), (Ahmed et al., 2020),

(Muwardi et al., 2020), (Mahmud et al., 2020), (Abdul Rauf et al., 2020), (Abbas et al., 2018), (Abualoush et al., 2018), (Chaudhry et al., 2017).

The third significant factor, according to the previous literature, is strategy and planning (Kasushik & Guleria, 2020), (Chioke & Mbamalu, 2020), (Ahuja et al., 2019), (Anastasiadou & Taraza, 2019), which in the MBNA is included in the Baldrige variable number 2. However, strategic planning is still needed, especially the redesign of the roles and functions of each employee to adapt to the post-pandemic new normal conditions.

According to the literature, the fourth significant factor is the external influence of the organization, namely the social, environmental or political policies imposed by the government, like the modelling of the labour market in Tunisia with social interaction and government policy (Abidi, 2020). There are challenges in the form of Social Restrictions policies that limit the industry's movement both organizationally and in employee activities in current pandemic circumstance. However, other research shows that managing the risks that may arise will improve the performance of the company organization (Najib et al., 2019).

Other findings from the literature review show the importance of customer handling, communication, leadership and strategic alignment as a very significant causal in implementing continuous performance improvement. (Ahuja et al., 2019). As a comparison, researchers also reviewed research on evaluating organizational performance in education using the Baldrige criteria in Greece. The results of these studies prove that the main factor in their Tertiary Education System is leadership. The

following variable that significantly affects the successful implementation of quality is strategic planning (Anastasiadou & Taraza, 2019).

Another literature shows that using a performance measurement system will affect organizational performance, especially helping organizations in monitoring performance, which ultimately leads to target achievement and gathering information and activity records that are useful for improving its performance. This system will affect various aspects of the organization, including financial and non-financial performance, employee behaviour, and overall performance (Owais & Kiss, 2020). Previous research has used Baldrige model research in improving the quality of performance in the industry using cross-sectional surveys (Parast & Golmohammadi, 2019). Another is combining with Total Quality Management (TQM) practices (Fatima & Mahaboob, 2018), (Alanazi, 2020), (Asif, 2020), (Jong et al., 2019), (Savov et al., 2017) and (Raharjo & Eriksson, 2017).

Finally, this research provides several suggestions to the company related to their performance. First, this research evaluates the performance of the companies using a Baldrige model, which is theoretically robust and has been applied in many previous studies and has been widely applied in businesses performance measurement. One of the crucial implications of this finding is that the company can use Baldrige as a self-assessment method for quality performance improvement. The form of suggestions for improvements to companies is elaborated in Table 12 below.

Second, the novelty of this research is using the Baldrige indicator assessment through the Delphi approach from independent reviewers as a more objective resource

with several focus group discussions (FGD), which also produces suggestions for performance improvements on a priority scale.

The third is the contribution of the results of this study to academic theory, namely increasing understanding of how to carry out comprehensive organizational performance measurements regardless of the business model and looking for loopholes to improve the quality of performance using the Baldrige approach. The Baldrige criteria used are international and have become a standard in the United States and have been adopted in various countries, including Indonesia, through the Indonesia Quality Award (IQA) organization.

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Table 12 List of performance indicator to be improved

No	Performance variable	Performance indicator to be modified/improved	Indicator no.
1	Operational and process	Availability of materials, spare parts and tools	29
		Preparation of operational schemes to deal with emergencies such as the Covid-19 pandemic	34
		Equipment operated by authorized personnel	32
		All equipment is operated using approved instructions	31
2	Measurement, analysis and knowledge management	Use of working procedures and instructions in operating tools	22
		Alignment of employee and company performance	19
		Information and socialization of job task to all employees	20
3	Business results	Organisation financial condition is maintained	37
		Efforts to overcome obstacles	39
		Customer satisfaction is met	36
		Production targets are met without defect	35

4.3 Research Limitation

Challenging during research is related to social restrictions, due to the pandemic in the company area that causes interviews and discussions to be carried out in several ways—handwriting on the paper form and internet application such as online video conference and filled-in form application. The time limitation possessed by the five experts can be overcome by partially discussing several stages until all the results are collected, which can be made a consensus with the confirmation of the experts as a resource.

Organizational performance measurement in this company has never been carried out other than a performance appraisal for employees like personnel, so it cannot be compared to the complete performance evaluation of this organization to another similar industry. Other organizations in Indonesia commonly used the Baldrige variable are government-owned companies, hospitals, and educational institutions, so benchmarking cannot be carried out for the same industries.

The performance evaluation carried out by researchers was in the Covid-19 pandemic period, so that company activities were only prioritized for the production of equipment as part of Covid-19 handling, which was carried out urgently, i.e. oxygen generators and ventilators, and this might be different from activities in the normal situation before or after the Covid-19 pandemic.

5. Conclusion and Suggestion

5.1. Conclusion

Based on Baldrige variables, the results showed that the company performance is the best in leadership and the weakest is in the operational variable. Thus, the highest priority performance should be improved the Operational variable that remark 91% based on Delphi consensus. Certainly not relinquishing the responsibility to improve other performance. In practical terms, the performance items that involve the internal company will be easily corrected. What will be difficult is items related to external factors.

5.2. Suggestion

Evaluating organizational performance using the Baldrige variable for manufacturing electro-medical devices can be a role model for similar industries, particularly in Indonesia and South-East Asia. The obstacles encountered can be used as lessons learned by other researchers. Organizational evaluation using the Delphi method based on Baldrige indicators was not found in previous literature. Thus, further research is expected to be followed that will strengthen the use of these approaches.

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