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RESEARCH PATHWAYS IN MANAGEMENT

SUSTAINABLE RECOVERY STRATEGIES: FINANCIAL AND OPERATIONAL KPIs FOR MANUFACTURERS POST – PANDEMIC

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Abstract

The Covid-19 pandemic revealed significant weaknesses in the manufacturing sector's financial and operating systems. In this regard, this study formulated sustainable recovery strategies for manufacturing firms in the Philippines by appraising the financial and operational KPIs (Key Performance Indicator) through the lens of the Resource-Based View (RBV) theory. Data were gathered on 100 purposively selected employees from the aviation, electronics and automotive industries using descriptive quantitative and correlational approach. A structured, validated questionnaire was used to assess KPIs such revenue growth, profit margins, liquidity, production capacity, or supply chain efficiency. The analysis used statistical techniques like frequency, percentage, weighted mean, and Pearson correlation to establish the relationships between demographic profiles and evaluations on KPIs. The finding showed that there was a considerable agreement on the use of data -driven KPI management and continuous monitoring. Age and years of service affected perceptions more than sex or educational attainment. The study, therefore, concluded that mature and experienced employees are in the best position to improve KPI effectiveness and resilience in organizations. It recommends that strategic alignment of KPIs with sustainability goals, integration of real-time monitoring systems, and the use of business intelligence tools. The resulting framework of recovery emphasizes financial prudence, operational innovation, and cross-functional collaboration and provides a roadmap for sustainable growth for organizations in the post-pandemic era.

Keywords *– Financial Key Performance Indicators, Inimitable, Key Performance Indicators, Operational Key Performance Indicators, Sustainable Recovery Strategies,*

INTRODUCTION

As manufacturers navigate the post-pandemic landscape, the need for sustainable recovery strategies becomes paramount to rebuild stability and drive growth in a transformed environment. The COVID-19 pandemic exposed critical vulnerabilities in financial and operational systems, underscoring the importance of re-evaluating traditional business models. This study explores financial and operational key performance indicators (KPIs) as essential tools for enhancing resilience and promoting

long-term sustainability. By focusing on metrics such as revenue growth, profit margins, liquidity, production capacity, supply chain efficiency, and workforce productivity, the research aims to uncover actionable insights for manufacturers to optimize recovery efforts and prepare for future disruptions.

The research will examine how these KPIs were disrupted during the pandemic, using comparative analyses of pre- and post-pandemic financial data to highlight gaps and inefficiencies. Pre-pandemic, manufacturing sectors experienced relative stability and predictable growth; however, the pandemic led to substantial financial setbacks and operational disruptions. This study can help assess how innovative resources or capabilities such as sustainable practices or technology investment can drive recovery through the Resource-Based View (RBV) framework. This methodology ensures a systematic evaluation of KPIs and focuses on data-driven enhancements to streamline operations and bolster financial health.

Ivanov and Dolgui (2021) provided a comprehensive analysis of how financial key performance indicators (KPIs) contribute to mitigating the adverse effects of supply chain disruptions. Their study identified cash flow management and working capital efficiency as critical tools for maintaining financial stability during crises.

To ensure the study's relevance, the research will focus on manufacturing sectors significantly affected by the pandemic, such as automotive, electronics, and aviation. These industries serve as representative cases for understanding diverse recovery challenges across manufacturing domains. The findings aim to offer targeted strategies for these sectors to adapt their KPIs, build resilience, and achieve sustainable recovery.

This study serves as a strategic framework for manufacturers aiming to realign their financial and operational approaches with evolving market demands. By utilizing

key performance indicators (KPIs), conducting comparative analyses, and integrating Resource-Based View (RBV) methodologies, manufacturers can proactively mitigate risks, strengthen their competitive edge, and ensure long-term sustainability in the post-pandemic landscape.

OBJECTIVES OF THE STUDY

This study aims to explore critical performance indicators that facilitate the recovery and sustainability of manufacturing companies in the post-pandemic landscape. Specifically, it will focus on identifying and analyzing financial and operational key performance indicators (KPIs) to develop sustainable recovery strategies. In line with this, the researcher seeks to answer the following questions:

How may the demographic profile of the respondents be described in terms of.

1.1. Age.
1.2. Sex.
1.3. Civil status.
1.4. Educational attainment; and
1.5. Years in Service?

2. How may the financial and operational KPIs of the manufacturing companies be evaluated through the lens of Resource-Based View (RBV) to identify which capabilities are valuable, rare, inimitable and non-substitutable for sustainable recovery strategies post-pandemic?
3. What sustainable recovery strategies should the researcher suggest in order, to improve the financial and operational strategies of the manufacturing companies?
4. Is there a significant relationship between the demographic profile of the respondents and the assessment of the financial and operational KPIs of the manufacturing companies?
5. How can manufacturers effectively implement sustainable recovery strategies by aligning financial and operational KPIs to ensure resilience and long-term growth in the post-pandemic era?

METHODOLOGY

The researcher will use a descriptive quantitative and correlational research design in order, to assess or analyze the variables in the study and provide concrete output for the said research. The descriptive correlational aspect of the study focuses on understanding the relationships of various financial and operational key performance indicators (KPIs) and how these variables influence the sustainable recovery of manufacturing firms. Data will be collected numerically and will be

analyzed using statistical methods. Surveys and structured questionnaires will be administered to the representatives or employees of the companies. This quantitative approach will allow an objective measurement and concrete insights that will improve the financial and operational key performance indicators (KPIs) of these manufacturing companies and provide sustainable recovery strategies to help these manufacturing companies improve their overall performance post – pandemic.

To select the respondents, the researcher will employ purposive sampling, a method used to target individuals who meet specific predefined attributes. This sampling technique is suitable because it allows the researcher to focus on a group that is most representative of the study's objectives.

The respondents of this study are employees from manufacturing firms operating in the aviation, electronics, and automotive industries. These industries were chosen due to their significant reliance on financial and operational key performance indicators (KPIs) for sustainable recovery in a post-pandemic context. To ensure a comprehensive perspective, the respondents will be selected from various departments, including finance, operations, and supply chain management. Their positions in these departments provide them with direct experience and insight into how financial and operational key performance indicators (KPIs) impact the daily operations and recovery strategies of their organizations.

The researcher will use a questionnaire as the main data gathering tool to be used in this study

The questionnaire will compose of two parts. The first part will be the checklist of the demographic profile of the respondents which are the students. The second part will be the assessment of the financial and operational key performance indicators (KPIs) of the manufacturing firms. The assessment parts will be using a 4 – point Likert scale in order, for the respondents to answer the said questionnaire easily.

To ensure the validity and reliability of the questionnaire, the researcher conducted a pilot testing of the research instrument. The researcher selected 30 employees from other companies which are also manufacturing companies in other areas which undergone the pilot testing and identified the problems which helped the implementation of the full survey, and it was tested using Cronbach alpha. The results showed that the questionnaire is reliable to use by the researcher.

Additionally, the questionnaire undergone a content validity, which involved assessing the extent to which the questions adequately represent the research topic.

The researcher did not engage in any manipulation of the respondents' opinions, ensuring that the answers to the provided questions in this study reflect the true and unbiased views of the participants. Furthermore, the integrity of the researcher is paramount; the researcher has established strict ethical guidelines to prevent any possibility of bribery that could alter the results. This commitment to ethical standards guarantees that the findings of the study are trustworthy and credible.

RESULTS AND DISCUSSION

Table 1
Demographic profile – Age

Age	Frequency	Percent
18 - 25 Yrs.	8	7.92%
26 - 30 Yrs.	7	6.93%
31 - 35 Yrs.	31	30.69%
36 Yrs and Above	55	54.46%
Total	**101**	**100.00%**

Based on the data, most of the respondents are in the ages of 36 years old and above showing that most of the respondents are in the mature stage in which can make financial and operational decisions in order for the company to achieve its goals and objectives. According to Fong et. al (2021), the connection was established that the greater the financial literacy of the older adults in question, the more differentiated they would be in financial activities-late repayment of debt, selecting the right investments, and so on. Just over one unit increase in financial literacy score signifies an 8.3 percentage point in increase in the odds of participating in the stock market.

Table 2
Demographic profile – Sex

Sex	Frequency	Percent
Male	53	52.48%
Female	48	47.52%
Total	**101**	**100.00%**

Based on the data gathered, most of the respondents are male indicating that males are basically the employees needed in terms of the operational aspect as well as the financial aspect of the firm. As stated by Aziz and Cek (2025), indicated an outcome that found positive impact of board gender diversity on corporate financial performance. The inference made in the study suggested that diverse boards with female membership manage decision making processes that improve the financial outcome.

Table 3
Demographic profile – Civil Status

Status	Frequency	Percent
Single	34	33.66%
Married	65	64.36%
Widowed	2	1.98%
Total	**101**	**100.00%**

Based on the data gathered, most of the respondents are married showing that they have a broader perspective in terms of contributing to developing key

performance indicators (KPIs) for the company as they make daily life decisions for their family which can be translated into decision – making for the organization. Based to Ferrer and Garedo (2025), enhance organizational effectiveness through improvement in job satisfaction and motivation. Policies like these are implemented especially for married employees, who often find it difficult to harmonize their professional commitments with family obligations and may benefit from improved decision-making processes in the organization.

Table 4

Demographic profile – Educational Attainment

HEA	Frequency	Percent
College Level	84	83.17%
Master's Degree	15	14.85%
Doctorate Degree	2	1.98%
Total	**101**	**100.00%**

Based on the data gathered, most of the respondents are college graduates as it is the minimum educational requirement in order to be hired for a financial or operational position in a manufacturing company. According to Laundon et. al (2023), stress the importance of formal training in equipping a digitally enabled workforce for the manufacturing industry: bachelor's degree in relevant fields are oftentimes prerequisites for positions in operations and finance with manufacturing companies.

Table 5

Demographic profile – Years of Service

No of Years	Frequency	Percent
10 - 15 Years	75	74.26%
16 - 20 Years	13	12.87%
21 Years Above	13	12.87%
Total	**101**	**100.00%**

Based on the data gathered, most of the respondents have been in the company for 10 to 15 years which indicates that these companies have low employee turnover rates indicating the organization's commitment to also satisfying their employees and providing career growth and development opportunities for them. As stated by Aliansyah et. al (2024), turnover intention was greatly increased by an even better organizational commitment that, in turn, reduced the intention of turning over. It indicates that organizations contribute to career development, so employee commitment goes up, lowering turnover.

Table 6

Summary of the Assessment Factors

Factors	Weighted Mean	Verbal Interpretation
Definition	3.74	Strongly Agree
Measure	3.62	Strongly Agree
Analyze	3.65	Strongly Agree
Improve	3.68	Strongly Agree
Control	3.63	Strongly Agree
OVERALL WEIGHTED MEAN	3.66	**Strongly Agree**

The table above shows that among the key performance indicators (KPIs) related to post-pandemic recovery strategies, the factor "acquires" received the highest weighted mean score of 3.74, indicating strong agreement from respondents on its importance. This KPI measures the organization's ability to secure necessary resources, such as raw materials and workforce, essential for restoring production capacity. It is followed closely by the "improve" factor, scored at 3.68, which tracks enhancements in operational efficiency and product quality since the pandemic. Other critical KPIs include "analyze" (3.65), which involves evaluating data to inform decision-making, and "control" (3.63), referring to monitoring processes to maintain standards. The "measure" factor, with the lowest score of 3.62, focuses on quantifying outcomes to assess progress objectively.

Table 7

Relationship Between Financial and Operational KPIs to Demographic Profile – Age

Financial & Operational KPIs		AGE	Interpretation
Definition	Pearson Correlation	.141	Not significant
	Sig. (2-tailed)	.160	
	N	101	
Measure	Pearson Correlation	.077	Not significant
	Sig. (2-tailed)	.444	
	N	101	
Analyze	Pearson Correlation	.140	Not significant
	Sig. (2-tailed)	.163	
	N	101	
Improve	Pearson Correlation	.157	Not significant
	Sig. (2-tailed)	.117	
	N	101	
Control	Pearson Correlation	.202*	Significant
	Sig. (2-tailed)	.043	
	N	101	

Comparing these findings to pre-pandemic data and broader industry trends highlights the importance of control mechanisms in post-pandemic recovery efforts. According to Chen et al. (2020), organizations led by older CEOs experience fewer weaknesses in internal controls over time, which aligns with the observed positive correlation. This implies that experience, as proxied by age, enhances a company's ability to implement effective control practices, thereby strengthening financial and

operational health in a challenging economic environment. Contextualizing this within the global recovery landscape underscores that firms emphasizing robust control processes may better navigate uncertainties and sustain improvements beyond the pandemic period

Table 8

Relationship Between Financial and Operational KPIs to Demographic Profile – Sex

The correlation analysis between sex and key performance indicators (KPIs) related to financial and operational performance reveals weak and statistically insignificant relationships across all measured variables. Contextualizing these results within broader industry trends, Daguio et al. (2023) highlight that while there has been overall progress in Human Capital development and Economic Empowerment post-pandemic, significant gaps remain that require targeted interventions. Specifically, indicators related to Voice and Rights—reflecting awareness and empowerment of women—are relatively high; however, efforts should also address educating men to promote inclusive workplace recovery. This aligns with global economic trends where post-pandemic recovery strategies emphasize equitable workforce engagement alongside financial

Financial & Operational KPIs		Sex	Interpretation
Definition	Spearman Rank Correlation	-.041	Significant
	Sig. (2-tailed)	.684	
	N	101	
Measure	Spearman Rank Correlation	-.077	Significant
	Sig. (2-tailed)	.442	
	N	101	
Analyze	Spearman Rank Correlation	-.070	Significant
	Sig. (2-tailed)	.488	
	N	101	
Improve	Spearman Rank Correlation	-.073	Significant
	Sig. (2-tailed)	.471	
	N	101	
Control	Spearman Rank Correlation	.007	Significant
	Sig. (2-tailed)	.946	
	N	101	

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Table 9

Relationship Between Financial and Operational KPIs to Demographic Profile – Civil status

Financial & Operational KPIs		Civil Status	Interpretation
Definition	Spearman Rank Correlation	.146	Significant
	Sig. (2-tailed)	.145	
	N	101	
Measure	Spearman Rank Correlation	.194	Significant
	Sig. (2-tailed)	.052	
	N	101	
Analyze	Spearman Rank Correlation	.144	Significant
	Sig. (2-tailed)	.150	
	N	101	
Improve	Spearman Rank Correlation	.281**	Significant
	Sig. (2-tailed)	.004	
	N	101	
Control	Spearman Rank Correlation	.227*	Significant
	Sig. (2-tailed)	.022	
	N	101	

The Results and Discussion section should clearly and concisely present the key findings, supported by tables, figures, or statistical analyses, without providing interpretation. Data should be logically organized to emphasize significant trends and patterns that are relevant to the research objectives. The Discussion should interpret the findings in relation to the research question, existing literature, and theoretical frameworks. Unexpected results should be addressed, and the implications of the study should be highlighted. Furthermore, acknowledging limitations and suggesting directions for future research will enhance the contribution of the study.

CONCLUSION AND RECOMMENDATION

The study's evaluation of KPIs revealed that companies employ data-driven financial and operational indicators that are regularly tracked, analyzed, and controlled to support profitability, cost efficiency, and operational productivity. Respondents perceive that these KPIs are effective in identifying cost reduction opportunities and enhancing resource utilization. The correlation analysis further highlights that age, civil status, and years of service have meaningful relationships with the perception and implementation of KPIs, particularly in control and improvement practices, while sex and educational attainment do not significantly affect KPI engagement. These findings confirm the importance of aligning sustainable recovery strategies with clearly defined and measurable KPIs, demonstrating both theoretical contributions to understanding workforce demographics in KPI effectiveness and practical implications for tailoring recovery efforts to leverage employee experience and stability in manufacturing settings.

In lieu of the summary of findings and conclusions, the following recommendations are provided:

a. Conduct quarterly orientation and alignment meetings to ensure consistent understanding of KPIs
b. Strengthen internal audit systems and implement monthly performance scorecards
c. Utilize business intelligence tools for deeper analysis and trend forecasting.
d. Initiate cost – benefit analysis and financial reviews to refine KPIs annually.
e. Develop a real – time monitoring system with alert mechanisms for deviations.

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