

Practices of Selected Manufacturing Companies in Metro Manila: Inputs for Enhanced Entrepreneurship Program in Local Universities and Colleges

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Abstract-

This study evaluates the practices of manufacturing firms in Metro Manila to inform the enhancement of an entrepreneurship curriculum. Using a descriptive research approach, data were gathered from management, employees, and clients to assess practices in product development, innovation, technology, marketing, finance, planning, and evaluation. The results indicated significant differences in the evaluations among these groups, with the exception of innovation. Recommendations include updating the curriculum, promoting industry partnerships, and incorporating practical training. While the findings offer valuable insights for aligning educational programs with industry needs, limitations such as sample size and company selection suggest the need for further research. Overall, this study provides essential inputs for improving entrepreneurship education and fostering stronger ties between academia and industry.

Index Terms- Entrepreneurship Program, Practices of Manufacturing Companies, Local Universities and Colleges

I. INTRODUCTION

In recent years, manufacturing companies in the Philippines have undergone significant evolution, spurred by a dynamic entrepreneurial ecosystem bolstered by government initiatives, startup communities, and improved funding access (Lunag Jr. et al., 2024). Key practices within these companies include supporting startup communities, leveraging government assistance, promoting micro, small, and medium enterprises (MSMEs), exploring innovative financing options, embracing digital transformation, using business incubators and accelerators, forming public-private partnerships, investing in education and skills development, encouraging social entrepreneurship, fostering an entrepreneurial mindset and

resilience, and maintaining strong social and community networks (Ratanawaraha et al., 2024; Tripathi & Singh, 2024; Sollazzo, 2024). These practices, though varying across regions and sectors, collectively create a vibrant and thriving entrepreneurial environment.

The practices of manufacturing companies are essential for business success and growth, affecting areas such as product development, innovation, technology, marketing, finance, planning, monitoring, and evaluation (Abdelhalim, 2024; Fayomi & Akanazu, 2024; Kusuma et al., 2024). Entrepreneurs in the manufacturing sector utilize these practices to innovate, develop market-relevant products, remain competitive, and attain financial stability through efficient resource management and strategic planning (Murlian, 2024). Continuous monitoring and evaluation help identify improvement opportunities and ensure long-term sustainability and growth.

Entrepreneurship programs in universities provide substantial benefits, such as enhancing creativity, initiative, and practical business skills (Hardini et al., 2024). These programs can drive job creation, economic growth, and the development of innovative solutions to social and environmental issues. However, they encounter challenges in curriculum development, faculty expertise, resource allocation, ecosystem support, and addressing cultural and institutional barriers (Odeyemi et al., 2024). To overcome these obstacles and support entrepreneurship education, collaboration among educational institutions, government agencies, and the business community is crucial (Espinoza-Benavides & Guerrero, 2024).

In Metro Manila, manufacturing companies employ practices such as comprehensive market research, efficient supply chain management, technology adoption, collaboration, adherence to quality standards, lean manufacturing techniques, skilled workforce development, sustainability initiatives, effective financial management, and strategic marketing (Candelario et al., 2024). These practices enable companies to

address challenges in product development, innovation, technology, marketing, finance, planning, and monitoring.

Examining these practices can greatly improve entrepreneurship programs at local universities and colleges. Possible enhancements include curriculum development, industry collaboration, hands-on learning opportunities, mentoring, networking, entrepreneurship competitions, research initiatives, and ongoing program evaluation. This analysis aims to produce graduates with the knowledge, skills, and entrepreneurial mindset needed to thrive in the manufacturing sector and drive economic growth. Consequently, a study focused on assessing the practices of manufacturing companies in Metro Manila to enhance entrepreneurship programs at local universities and colleges is both timely and essential.

This study aims to evaluate the practices of manufacturing companies in Metro Manila to guide the development of an enhanced entrepreneurship curriculum. It aims to explore how management, employees, and clients perceive these companies' practices in key areas such as product development, innovation, technology adoption, marketing, finance, planning, and performance evaluation. Furthermore, the study examines whether there are noteworthy variations in these perceptions among the three respondent groups. The study hypothesizes that there will be no significant difference in the evaluations of manufacturing practices among management, employees, and customers.

II. METHODOLOGY

Research Design

This study employed a descriptive research methodology, which entails gathering data on essential variables and employing statistical methods to analyze the magnitude and direction of their associations, without implying causation. This approach is valuable for generating hypotheses and aiding decision-making processes. The data collection process concentrated on identifying practices associated with product development, innovation, technology, marketing, finance, planning, and monitoring and evaluation, as well as their relationship with key performance indicators. The findings will contribute to the improvement of entrepreneurship curricula, offering pragmatic insights into effective practices within the manufacturing sector.

Population and Sampling

The study focused on the practices of manufacturing companies in Metro Manila, targeting management, employees, and customers of selected firms. Twenty-five manufacturing companies were chosen to represent the sector's diversity. From a total pool of 1,931 potential respondents, 735 were selected for the study, ensuring a representative sample within practical

constraints. The respondents were categorized into three groups: 350 customers (47.62%), 260 employees (35.37%), and 125 management personnel (17.01%).

Data Collection and Analysis

Data collection involved obtaining permissions from relevant authorities and distributing informed consent forms via email to prospective respondents. Following consent, a survey was conducted using Google Forms between March and June 2023. The responses were summarized and analyzed using IBM SPSS version 22, employing rigorous statistical methods to ensure the validity and reliability of the findings. The study was conducted during the second semester of the academic year 2022-2023.

Survey Instrument and Procedure

In gathering the necessary data and draw sound conclusions, this study utilized a researcher-developed survey questionnaire. The survey was central to collecting data on the practices of selected manufacturing companies in Metro Manila. It was meticulously designed and validated by experts in business and entrepreneurship to ensure relevance and accuracy. Using a five-point Likert scale, respondents could express their level of agreement or disagreement, facilitating a standardized and quantitative data collection approach. This structure allowed for comprehensive data collection, ensuring a holistic understanding of the respondents' views. The validity and reliability of the questionnaire were ensured through expert validation and input from the researcher's adviser. Data collection followed a systematic process, including obtaining permissions, distributing the Google Form link, collecting informed consent, and administering the survey in May 2023. Responses were analyzed using IBM SPSS version 22. The statistical treatment involved calculating percentages and weighted means, using Likert scale interpretations, and employing ranking, and ANOVA. This rigorous approach ensured the study's findings were reliable and provided valuable insights into the manufacturing practices and their implications for enhancing entrepreneurship curricula in local universities and colleges.

Limitations and Considerations

The sample size and company selection in the study might constrain the applicability of the findings to the broader manufacturing sector in Metro Manila. Although the study offers valuable insights, it's essential to acknowledge that the results pertain specifically to the selected companies and participants. Future research endeavors could expand the range of companies selected to improve representativeness. The distribution of respondents across different stakeholder groups ensures a comprehensive range of perspectives, contributing to a holistic

understanding of the practices under investigation. Despite its limitations, the study offers significant inputs for enhancing entrepreneurship programs in local colleges and universities, aligning educational initiatives with real-world industry practices.

III. RESULTS AND DISCUSSION

Assessment of the practices of selected manufacturing companies in Metro Manila

Product Development

Table 1 shows the assessment of the entrepreneurial practices of selected manufacturing companies in Metro Manila as to product development rated as Practiced with an overall weighted mean of 3.84. All items rated as Practiced, namely: brainstorm product concepts based on customer needs, concept testing, and market research; and research and document the product by creating a more detailed business plan and constructing the product with both the composite weighted mean of 3.87 as rank 1 and 2; project stakeholders work together to produce a mockup of the product based on the prototype with a composite weighted mean of 3.86 as rank 3; commercialize concept, which involves launching product and implementing it with a composite weighted mean of 3.83 as rank 4; ensure that every part of the product—from development to marketing—is working effectively before it’s released to the public with a composite weighted mean of 3.81 as rank 5; and scoping or concept development and focuses on refining the product strategy with a composite weighted mean of 3.80 as rank 6.

Table 1. Practices of Selected Manufacturing Companies as to Product Development

Indicators	Management		Employee		Customer / Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Brainstorm product concepts based on customer needs, concept testing, and market research.	4.10	P	4.00	P	3.50	P	3.87	P	1.5
2. Scoping or concept development and focuses on refining the product strategy.	3.90	P	4.06	P	3.44	P	3.80	P	6
3. Research and document the product by creating a more detailed business plan and constructing the product.	3.99	P	4.03	P	3.59	P	3.87	P	1.5
4. Project stakeholders work together to produce a mockup of the product based on the prototype.	3.98	P	3.96	P	3.63	P	3.86	P	3
5. Ensure that every part of the product—from development to marketing—is working effectively before it’s released to the public.	3.98	P	3.98	P	3.48	P	3.81	P	5
6. Commercialize concept, which involves launching product and implementing it.	4.00	P	4.03	P	3.46	P	3.83	P	4
Overall Weighted Mean	3.99	P	4.01	P	3.52	P	3.84	P	

Legend: Scale Range Verbal Interpretation Symbol
 5 4.20-5.00 Highly Practiced HP
 4 3.40-4.19 Practiced P
 3 2.60-3.39 Moderately Practiced MP
 2 1.80-2.59 Least Practiced LP
 1 1.00-1.79 Not Practiced NP

As to assessments of the groups of respondents on the entrepreneurial practices of selected manufacturing companies in Metro Manila as to product development rated as Practiced, such as: employee with an overall weighted mean of 4.01, management with an overall weighted mean of 3.99, and client with an overall weighted mean of 3.52.

The findings presented in Table 1 have significant implications for the entrepreneurial practices of selected

manufacturing companies in Metro Manila, particularly concerning product development. The overall assessment of product development practices received a Practiced rating with an impressive overall weighted mean of 3.84. This suggests that the manufacturing companies excel in various aspects of product development, indicating a strong commitment to innovation and meeting customer needs.

The exceptional ratings for certain aspects of the product development process underscore areas of proficiency and excellence within the companies. Particularly, the aspects associated with generating product ideas aligned with customer requirements, conducting concept testing, market research, and crafting comprehensive business plans received the highest scores. This underscores the significance these companies attribute to customer-centric approaches and market research in propelling product innovation.

The high overall weighted mean ratings from different groups of respondents further validate the effectiveness of the product development practices. The employees' assessment received an impressive overall weighted mean of 4.01, indicating their positive perception of the company's product development strategies. Similarly, management and clients also rated the practices highly, with overall weighted means of 3.99 and 3.52, respectively. This alignment across different respondent groups underscores the consistency and effectiveness of the product development practices..

These findings have two main implications. Firstly, the manufacturing companies' emphasis on addressing customer needs and conducting market research reflects a customer-centric approach in product development. Such an approach increases the chances of developing successful and marketable products, thereby strengthening the company's competitive edge. Secondly, the favorable evaluations from employees, management, and clients indicate a robust organizational culture that prioritizes innovation, collaboration, and continuous enhancement. Such a positive workplace atmosphere can lead to increased employee satisfaction, enhanced operational efficiency, and improved customer satisfaction.

The high ratings for product development practices among chosen manufacturing companies in Metro Manila underscore their dedication to innovation and customer-centric approaches. The positive assessments from various respondent groups validate the efficacy of these practices and indicate a resilient organizational culture. Prioritizing a customer-focused approach and conducting thorough market research in product development can contribute to the sustained success and competitiveness of these companies in the dynamic manufacturing landscape.

Data revealed a similar result of the study conducted by Koochang et al. (2023), which emphasized the importance of conducting extensive market research to comprehend consumer preferences, identify market gaps, and tailor products to meet customer demands. Additionally, the challenge of balancing

timely product development with maintaining quality standards and ensuring regulatory compliance emerged as a common issue among manufacturing firms. Moreover, according to Khin and Kee (2022), safeguarding intellectual property rights, such as patents or trademarks, is crucial to prevent unauthorized usage or replication of innovative products.

Innovation

Table 2. Practices of Selected Manufacturing Companies as to Innovation

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Involve a good cross section of the business, utilizing the expertise within the organization, and even extending this to the customer and client network to get the market view.	4.08	P	3.97	P	4.08	P	4.04	P	1
2. Check internal operation of the company to determine what assets, resources and core competencies have within the company that can be explored.	4.16	P	3.97	P	3.95	P	4.03	P	2
3. Develop an ideas portfolio that includes ways could innovate to meet the goals and problems.	4.01	P	4.00	P	4.00	P	4.00	P	3.5
4. Translate the ideas into practical innovation products that could be targeted towards the identified marketplace.	3.98	P	4.02	P	3.95	P	3.98	P	5
5. Require access to production facilities, routes to market, logistics where collaborative working across the business and in industries outside the business, partnerships, and sub-contracting management.	3.98	P	3.96	P	4.07	P	4.00	P	3.5
Overall Weighted Mean	4.04	P	3.98	P	4.01	P	4.01	P	

As stated in Table 2, the assessment of the entrepreneurial practices of selected manufacturing companies in Metro Manila as to innovation rated as Practiced with an overall weighted mean of 4.01. All items rated as Practiced, these are: involve a good cross section of the business, utilizing the expertise within the organization, and even extending this to the customer and client network to get the market view with a composite weighted mean of 4.04 as rank 1; check internal operation of the company to determine what assets, resources and core competencies have within the company that can be explored with a composite weighted mean of 4.03 as rank 2; develop an ideas portfolio that includes ways could innovate to meet the goals and problems; and require access to production facilities, routes to market, logistics where collaborative working across the business and in industries outside the business, partnerships, and sub-contracting management with both the composite weighted mean of 4.00 as rank 3 and 4; and translate the ideas into practical innovation products that could be targeted towards the identified marketplace with a composite weighted mean of 3.98 as rank 5.

As to assessments of the groups of respondents on the entrepreneurial practices of selected manufacturing companies in Metro Manila as to innovation rated as Practiced, namely: management with an overall weighted mean of 4.04, client with an overall weighted mean of 4.01, and employee with an overall weighted mean of 3.98.

The findings presented in Table 2 carry significant implications for the entrepreneurial practices of selected manufacturing companies in Metro Manila, particularly concerning innovation. The overall assessment of innovation practices received a Practiced rating, with an impressive overall weighted mean of 4.01. This indicates that the manufacturing companies actively engage in various aspects of innovation,

demonstrating a commitment to staying competitive and driving growth through innovative strategies.

The high ratings for specific items in the innovation process highlight areas of strength and excellence within the companies. Notably, the items related to involving a cross-section of the business, utilizing expertise within the organization and extending to clients for market views received the highest ratings. This signifies the companies' emphasis on collaboration, internal ideation, and customer engagement to drive innovation.

The high overall weighted mean ratings from different groups of respondents further validate the effectiveness of the innovation practices. Management's assessment received an impressive overall weighted mean of 4.04, indicating their strong endorsement and belief in the company's innovation strategies. Similarly, clients and employees also rated the practices highly, with overall weighted means of 4.01 and 3.98, respectively. This alignment across different respondent groups underscores the consistency and effectiveness of the innovation practices.

The implications of these findings are twofold. Firstly, the manufacturing companies' commitment to innovation and collaborative ideation allows them to tap into diverse perspectives and expertise, fostering a more robust and creative innovation process. This approach can lead to the development of groundbreaking products and solutions, enhancing their market competitiveness. Secondly, the positive assessments from management, clients, and employees indicate a culture of innovation and open communication within the companies. A culture that values and encourages innovation can attract top talent, foster creativity, and drive continuous improvement throughout the organization.

The high ratings for innovation practices among selected manufacturing companies in Metro Manila demonstrate their proactive approach to driving growth through innovation. The positive assessments from different respondent groups affirm the effectiveness of these practices and reflect a culture of collaboration and creativity. Emphasizing collaborative ideation and customer engagement in the innovation process can position these companies for sustained success and resilience in a dynamic market environment.

Results agreed with the results of the study conducted by Peter et al. (2023) where allocating sufficient resources for research and development activities to foster innovation is considered as challenge in manufacturing industry. Moreover, according to Najwa et al. (2022) found that overcoming resistance to change and fostering a culture of innovation within the organization is considered challenges faced by manufacturing companies; and encouraging collaboration with external partners, such as universities, research institutions, or startups, to access new ideas and technologies are considered as issues and challenges faced by manufacturing companies in terms of innovation.

Technology

Table 3. Practices of Selected Manufacturing Companies as to Technology

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Perform an analysis of current systems, reviewing all of current technology systems before considering adding something new.	4.42	HP	3.98	P	3.59	P	4.00	P	3
2. Create optimized schedules balancing production efficiency and delivery performance.	4.50	HP	3.87	P	3.50	P	3.96	P	5
3. Maximize output on bottleneck resources to increase revenue.	4.54	HP	4.02	P	3.58	P	4.05	P	1
4. Maximize output on bottleneck resources to increase revenue.	4.42	HP	3.99	P	3.39	MP	3.93	P	6
5. Provide company-wide visibility to capacity.	4.62	HP	3.93	P	3.49	P	4.01	P	2
6. Enable scenario data-driven decision making.	4.48	HP	3.98	P	3.46	P	3.97	P	4
Overall Weighted Mean	4.50	HP	3.96	P	3.50	P	3.99	P	

As indicated in Table 3, the assessment of the entrepreneurial practices of selected manufacturing companies in Metro Manila as to technology rated as Practiced with an overall weighted mean of 3.99. All items rated as Practiced, such as: maximize output on bottleneck resources to increase revenue with a composite weighted mean of 4.05 as rank 1; provide company-wide visibility to capacity with a composite weighted mean of 4.01 as rank 2; perform an analysis of current systems, reviewing all of current technology systems before considering putting on something new with a composite weighted mean of 4.00 as rank 3; enable scenario data-driven decision making with a composite weighted mean of 3.97 as rank 4; create optimized schedules balancing production efficiency and delivery performance with a composite weighted mean of 3.96 as rank 5; and maximize output on bottleneck resources to increase revenue with a composite weighted mean of 3.93 as rank 6.

The findings presented in Table 3 have significant implications for the entrepreneurial practices of selected manufacturing companies in Metro Manila, particularly concerning technology adoption. The overall assessment of technology practices received a Practiced rating, with an overall weighted mean of 3.99. This indicates that manufacturing companies actively engage in various aspects of technology utilization, demonstrating a commitment to leveraging technology to enhance productivity and decision-making.

The high ratings for specific items in the technology adoption process highlight areas of strength and excellence within the companies. Notably, the items related to maximizing output on bottleneck resources to increase revenue and providing company-wide visibility to capacity received the highest ratings. This signifies the companies' emphasis on optimizing resource utilization and ensuring transparency in operations through technology integration.

The positive assessments from different respondent groups further validate the effectiveness of the technology practices. Management's assessment received an overall weighted mean of 4.05, indicating their strong endorsement of the company's technology adoption strategies. Similarly, employees and clients also rated the practices highly, with overall weighted means of 3.97 and 3.90, respectively. This

alignment across different respondent groups underscores the consistency and effectiveness of the technology practices.

The implications of these findings are twofold. Firstly, the manufacturing companies' proactive approach to technology adoption allows them to streamline operations, optimize resource allocation, and increase revenue. Leveraging technology for scenario data-driven decision-making enhances operational efficiency and supports strategic planning. Secondly, the positive assessments from management, employees, and clients indicate a culture that values technology-driven innovation and continuous improvement. This culture fosters adaptability and resilience, enabling the companies to stay competitive in an increasingly technology-driven market environment.

The high ratings for technology adoption practices among selected manufacturing companies in Metro Manila demonstrate their commitment to leveraging technology for improved productivity and decision-making. The positive assessments from different respondent groups affirm the effectiveness of these practices and reflect a culture of innovation and technology integration. Emphasizing technology utilization for resource optimization and data-driven decision-making can position these companies for sustained success and growth in a technology-driven marketplace.

As to assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila as to technology are as follows: management rated as Highly Practiced with an overall weighted mean of 4.50, employee rated as Practiced with an overall weighted mean of 3.96, and client rated as Practiced with an overall weighted mean of 3.50.

Results support the claim of Mawkhiew and Thangkhiew's (2023) assertion that staying abreast of rapidly advancing technologies and ensuring the modernization of manufacturing processes and equipment are primary challenges for manufacturing companies today. Furthermore, integrating new technologies and digital systems with current infrastructure and operations is identified as another significant challenge. Additionally, as noted by Juergensen et al. (2020), tackling cybersecurity risks and safeguarding sensitive data and intellectual property from cyber threats are also major challenges confronting manufacturing firms in the current era.

Marketing

Table 4. Practices of Selected Manufacturing Companies as to Marketing

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Allow to reach a broad audiences through TV, radio, newspaper, Internet, magazines, and outdoor ads.	4.06	P	4.04	P	3.51	P	3.87	P	1
2. Adapt the platform of customer choice and being able to communicate directly with them, platforms include networking sites such as Facebook, Twitter, and LinkedIn; photo and video sites such as Snapchat, Instagram, and Pinterest; blogs; and news sites.	4.06	P	3.91	P	3.53	P	3.83	P	5.5
3. Highlight in a positive light by contributing as a community player, through newsletters, press conferences, community service, events, sponsorships, press releases, articles, and stories that help entrepreneurs create a positive image and get its name out there.	3.98	P	4.04	P	3.47	P	3.83	P	5.5
4. Connect to consumers via email or through printed, mailed pieces, is also a necessary tool to keep in touch with customers, especially when creating long-term relationships.	4.08	P	4.02	P	3.44	P	3.85	P	4
5. Attract attention and push the customer to take action by providing incentives include discounts, samples, rebates, rewards programs, gifts, and premiums.	3.90	P	3.95	P	3.40	P	3.75	P	7
6. Customer Relationship Management (CRM).	4.12	P	3.99	P	3.46	P	3.86	P	2.5
7. Consider face-to-face interactions to communicate and influence a customer to make a purchase.	4.05	P	4.06	P	3.48	P	3.86	P	2.5
Overall Weighted Mean	4.04	P	4.00	P	3.47	P	3.84	P	

As portrayed in Table 4, the assessment of the practices of selected manufacturing companies in Metro Manila as to marketing rated as Practiced with an overall weighted mean of 3.84. All items rated as Practiced, these are: allow to reach a broad audience through TV, radio, newspaper, Internet, magazines, and outdoor ads with a composite weighted mean of 3.87 as rank 1; attract new customers, but it may also reduce profits because coupons and discounts are offered for trying a product; and consider face-to-face interactions to communicate and influence a customer to make a purchase with both the composite weighted mean of 3.86 as rank 2 and 3; connect to consumers via email or through printed, mailed pieces, is also a necessary tool to keep in touch with customers, especially when creating long-term relationships with a composite weighted mean of 3.85 as rank 4; adapt the platform of customer choice and being able to communicate directly with them, platforms include networking sites such as Facebook, Twitter, and LinkedIn; photo and video sites such as Snapchat, Instagram, and Pinterest; blogs; and news sites; and highlight in a positive light by contributing as a community player, through newsletters, press conferences, community service, events, sponsorships, press releases, articles, and stories that help entrepreneurs create a positive image and get its name out there with both the composite weighted mean of 3.83 as rank 5 and 6; and attract attention and push the customer to take action by providing incentives include discounts, samples, rebates, rewards programs, gifts, and premiums with a composite weighted mean of 3.75 as rank 7.

As to assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila as to marketing rated as Practiced, namely: management with an overall weighted mean of 4.04, employee with an overall weighted mean of 4.00, and client with an overall weighted mean of 3.47.

The findings presented in Table 4 have significant implications for the practices of selected manufacturing companies in Metro Manila, particularly concerning marketing strategies. The overall assessment of marketing practices received a Practiced rating, with an overall weighted mean of 3.84. This indicates that the manufacturing companies actively engage in various marketing activities, demonstrating a

commitment to reaching their target audience and promoting their products effectively.

The high ratings for specific marketing strategies highlight areas of strength and excellence within the companies. Remarkably, the items related to allowing reaching a broad audience through various advertising channels, connecting with consumers via email and social media, and highlighting a positive image through community engagement received the highest ratings. This signifies the companies' emphasis on using multiple marketing channels to effectively communicate with their target market and build a positive brand image.

The positive assessments from management and employees further validate the effectiveness of the marketing practices. Management's assessment received an impressive overall weighted mean of 4.04, indicating their strong endorsement and belief in the company's marketing strategies. Similarly, employees also rated the marketing practices highly, with an overall weighted mean of 4.00. This alignment between management and employees underscores the consistency and effectiveness of the marketing strategies.

However, the lower rating from clients, with an overall weighted mean of 3.47, suggests that there might be a gap in perception between the company's marketing efforts and the client's experiences. This highlights the importance of understanding customer preferences and feedback to fine-tune marketing strategies for better customer engagement.

The implications of these findings are twofold. Firstly, the manufacturing companies' proactive approach to marketing enables them to reach a broad audience and create a positive brand image. Effective marketing strategies can attract new customers and build long-term relationships with existing ones, contributing to business growth and profitability. Secondly, the difference in perception between management/employees and clients emphasizes the significance of customer-centric marketing. Understanding customer preferences and feedback can help tailor marketing campaigns to better resonate with the target audience, leading to increased customer satisfaction and loyalty.

The high ratings for marketing practices among selected manufacturing companies in Metro Manila demonstrate their commitment to effectively reach their target audience and promote their products. The positive assessments from management and employees reflect a culture of proactive marketing and brand building. Emphasizing customer-centric marketing strategies and leveraging customer feedback can enhance the effectiveness of marketing efforts and lead to improved customer engagement and business success.

Results agreed with the claim of Amini and Jahanbakhsh Javid (2023) where developing effective marketing strategies to differentiate products in a competitive market and create a unique value proposition; Engaging customers through targeted marketing campaigns, social media, and personalized experiences to build brand loyalty and increase sales; And

overcoming challenges related to entering and expanding into international markets, including cultural differences, regulatory compliance, and market entry barriers are considered as main challenges faced by manufacturing companies at present time.

Finance

Table 5. Practices of Selected Manufacturing Companies as to Finance

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Budgeting and Financial Planning.	4.07	P	2.97	MP	4.01	P	3.68	P	1.5
2. Reduce inventory space needed and the risk of damaged stock.	4.02	P	3.00	MP	3.94	P	3.65	P	3.5
3. Cost Control and Efficiency Measures.	4.01	P	2.87	MP	3.97	P	3.62	P	5
4. Leverage the good standing relationship by negotiating with the suppliers, vendors and lenders for better payment terms and timelines.	3.92	P	3.03	MP	4.01	P	3.65	P	3.5
5. Cost of Capital Analysis.	4.14	P	2.96	MP	3.95	P	3.68	P	1.5
Overall Weighted Mean	4.03	P	2.97	MP	3.98	P	3.66	P	

As recognized in Table 5, the assessment of the practices of selected manufacturing companies in Metro Manila as to finance rated as Practiced with an overall weighted mean of 3.66. All items rated as Practiced, such as: reduce costs might not be enough to maintain positive cash flow; and understand each type of working capital loan as it may make or break the financial status of the company with both the composite weighted mean of 3.68 as rank 1 and 2; reduce inventory space needed and the risk of damaged stock; and leverage the good standing relationship by negotiating with the suppliers, vendors and lenders for better payment terms and timelines with both the composite weighted mean of 3.65 as rank 3 and 4; and ensure that money keeps coming in and payment is on time with a composite weighted mean of 3.62 as rank 5.

As to assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila as to finance are as follows: management rated as Practiced with an overall weighted mean of 4.03, client rated as Practiced with an overall weighted mean of 3.98, and employee rated as Moderately Practiced with an overall weighted mean of 2.97.

The findings presented in Table 5 have significant implications for the practices of selected manufacturing companies in Metro Manila, particularly concerning financial management. The overall assessment of finance practices received a Practiced rating, with an overall weighted mean of 3.66. This indicates that the manufacturing companies actively engage in various financial strategies, demonstrating a commitment to optimizing their financial health and stability.

The high ratings for specific financial practices highlight areas of strength and excellence within the companies. Notably, the items related to understanding each type of working capital loan and reducing costs to maintain positive cash flow received the highest ratings. This signifies the companies' emphasis on managing working capital effectively to ensure a stable financial position.

The positive assessments from management and clients further validate the effectiveness of the finance practices. Management's assessment received an impressive overall weighted mean of 4.03, indicating their strong endorsement and belief in the company's financial management strategies. Similarly, clients also rated the finance practices highly, with an overall weighted mean of 3.98. This alignment between management and clients underscores the consistency and effectiveness of the financial strategies.

However, the lower rating from employees, with an overall weighted mean of 2.97, suggests that there might be room for improvement in communicating and involving employees in financial management practices. Employees' involvement and understanding of financial decisions can foster a sense of ownership and accountability, contributing to improved financial performance.

The implications of these findings are twofold. Firstly, the manufacturing companies' proactive approach to financial management allows them to optimize working capital, reduce costs, and maintain positive cash flow. Effective financial strategies can enhance the company's ability to weather economic fluctuations and ensure sustainability. Secondly, the difference in perception between management and clients and employees highlights the importance of employee engagement and education in financial matters. Involving employees in financial discussions and providing them with financial literacy training can foster a better understanding of the company's financial goals and enhance overall financial performance.

The high ratings for finance practices among selected manufacturing companies in Metro Manila demonstrate their commitment to optimizing financial performance and stability. The positive assessments from the management and the clients reflect a culture of proactive financial management. Emphasizing employee engagement and financial education can further enhance financial practices and lead to improved financial outcomes and long-term success.

Results agreed with the results of the study conducted by Hota et al. (2023) where accessing sufficient capital for research and development, technological upgrades, and expanding production capacity; maintaining a healthy cash flow to meet operational expenses; invest in innovation, and manage financial obligations; and managing financial risks such as currency fluctuations, interest rate changes, and credit risks associated with clients or suppliers are considered as main challenges faced by manufacturing companies.

Planning

Table 6. Practices of Selected Manufacturing Companies as to Planning

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Estimate which resources are required and how it will be used.	4.05	P	3.44	P	3.97	P	3.82	P	3
2. Focus on the inventory control and inventory management techniques for careful planning.	3.91	P	3.45	P	4.05	P	3.80	P	4
3. Consider what machines and systems are essential for executing production plan.	3.98	P	3.46	P	4.04	P	3.83	P	1.5
4. Monitor how the results compare to the production schedule and resource management projections.	3.89	P	3.43	P	4.00	P	3.77	P	5
5. Reflect on the information gained in steps and strategize what can be done to make the production plan run more smoothly in the future.	3.95	P	3.57	P	3.98	P	3.83	P	1.5
Overall Weighted Mean	3.96	P	3.47	P	4.01	P	3.81	P	

As presented in Table 6, the assessment of the practices of selected manufacturing companies in Metro Manila as to planning rated as Practiced with an overall weighted mean of 3.81. All items rated as Practiced, these are: consider what machines and systems are essential for executing production plan; and reflect on the information gained in steps and strategize what can be done to make the production plan run more smoothly in the future with both the composite weighted mean of 3.83 as rank 1 and 2; estimate which resources are required and how it will be used with a composite weighted mean of 3.82 as rank 3; focus on the inventory control and inventory management techniques for careful planning with a composite weighted mean of 3.80 as rank 4; and monitor how the results compare to the production schedule and resource management projections with a composite weighted mean of 3.77 as rank 5.

As to assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila as to planning rated as Practiced, namely: client with an overall weighted mean of 4.01, management with an overall weighted mean of 3.96, and employee with an overall weighted mean of 3.47.

The findings presented in Table 6 have significant implications for the practices of selected manufacturing companies in Metro Manila, particularly concerning planning strategies. The overall assessment of planning practices received a Practiced rating, with an overall weighted mean of 3.81. This indicates that the manufacturing companies actively engage in various planning activities, demonstrating a commitment to strategic decision-making and resource optimization.

The high ratings for specific planning practices highlight areas of strength and excellence within the companies. Notably, the items related to considering essential machines and systems for executing production plans and reflecting on the information gained to improve future production plans received the highest ratings. This signifies the companies' emphasis on continuous improvement and forward-thinking in their planning processes.

The implications of the assessments from clients and management further validate the effectiveness of the planning practices. Clients' assessment received an impressive overall weighted mean of 4.01, indicating their strong endorsement and

belief in the company's planning strategies. Similarly, management also rated the planning practices highly, with an overall weighted mean of 3.96. This alignment between clients and management underscores the consistency and effectiveness of the planning strategies.

However, the lower rating from employees, with an overall weighted mean of 3.47, suggests that there might be room for improvement in employee involvement and understanding of the planning process. Involving employees in the planning process and communicating the rationale behind decisions can foster a sense of ownership and alignment with the company's goals.

The implications of these findings are twofold. Firstly, the manufacturing companies' proactive approach to planning allows them to optimize resources, streamline production processes, and improve efficiency. Effective planning strategies can lead to cost savings and enhanced productivity, contributing to overall business performance. Secondly, the difference in the perception between clients and employees highlights the importance of employee engagement in the planning process. Engaging employees in the planning discussions and providing them with opportunities for input can lead to better decision-making and a more inclusive planning process.

High ratings for planning practices among selected manufacturing companies in Metro Manila demonstrate their commitment to strategic decision-making and resource optimization. The positive assessments from clients and management reflect a culture of proactive planning and continuous improvement. Emphasizing employee involvement in the planning process can further enhance planning practices and lead to improved business outcomes and long-term success.

Results support the claim of Govindan (2022) that in terms of planning, accurately forecasting market demand to align production levels, inventory management, and resource allocation; Optimizing supply chain processes, including sourcing, procurement, production, and distribution, to ensure timely delivery and minimize costs; And efficiently planning production schedules, managing capacity, and balancing production volumes to meet customer demands are identified as challenges faced in manufacturing industry.

Monitoring and Evaluation

Table 7. Practices of Selected Manufacturing Companies as to Monitoring and Evaluation

Indicators	Management		Employee		Customer/ Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Adhere to manufacturing processes and regulations.	3.94	P	3.53	P	3.02	MP	3.50	P	4
2. Ensure that primary materials including raw products and other components have clear specifications at every phase of production.	3.96	P	3.49	P	3.03	MP	3.49	P	5.5
3. Ensure all employees are complying with the current processes and are meeting the required standards of the organization.	4.10	P	3.45	P	2.91	MP	3.49	P	5.5
4. Processes are properly documented, clear, consistent, and distributed to all employees.	4.03	P	3.52	P	3.05	MP	3.53	P	2
5. A procedure is a set of guidelines for undertaking a critical process or part of a process to achieve a consistent result.	4.02	P	3.47	P	3.04	MP	3.51	P	3
6. Ensure proper equipment placement, regular calibration, and maintenance to produce consistent results and prevent equipment failure.	3.98	P	3.45	P	3.48	P	3.64	P	1
Overall Weighted Mean	4.01	P	3.49	P	3.09	MP	3.53	P	

As presented in Table 7, the assessment of the practices of selected manufacturing companies in Metro Manila as to monitoring and evaluation rated as Practiced with an overall weighted mean of 3.53. All items rated as Practiced, such as: all equipment should be placed or stored properly and calibrated regularly to ensure that they are fit for the purpose of producing consistent results to prevent the risk of equipment failure with a composite weighted mean of 3.64 as rank 1; processes are properly documented, clear, consistent, and distributed to all employees with a composite weighted mean of 3.53 as rank 2; a procedure is a set of guidelines for undertaking a critical process or part of a process to achieve a consistent result with a composite weighted mean of 3.51 as rank 3; adhere to manufacturing processes and regulations with a composite weighted mean of 3.50 as rank 4; and ensure that primary materials including raw products and other components have clear specifications at every phase of production; and ensure all employees are complying with the current processes and are meeting the required standards of the organization with both the composite weighted mean of 3.49 as rank 5 and 6.

As to assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila as to monitoring and evaluation are as follows: management rated as Practiced with an overall weighted mean of 4.01, employee rated as Practiced with an overall weighted mean of 3.49, and client rated as Practiced with an overall weighted mean of 3.09.

The findings presented in Table 7 have significant implications for the practices of selected manufacturing companies in Metro Manila, particularly concerning monitoring and evaluation strategies. The overall assessment of monitoring and evaluation practices received a Practiced rating, with an overall weighted mean of 3.53. This indicates that the manufacturing companies actively engage in various monitoring and evaluation activities, demonstrating a commitment to ensuring quality control and process efficiency.

The high ratings for specific monitoring and evaluation practices highlight areas of strength and excellence within the companies. Notably, the items related to placing and storing equipment properly, documenting processes clearly and

consistently, and adhering to manufacturing processes and regulations received the highest ratings. This signifies the companies' emphasis on maintaining high-quality standards and compliance with industry regulations.

The positive assessment from management further validates the effectiveness of the monitoring and evaluation practices. Management's assessment received an impressive overall weighted mean of 4.01, indicating their strong endorsement and belief in the company's monitoring and evaluation strategies.

However, the lower ratings from employees and clients, with overall weighted means of 3.49 and 3.09, respectively, suggest that there might be room for improvement in involving employees and clients in the monitoring and evaluation process. Involving employees and clients in the evaluation process can provide valuable insights and feedback, leading to continuous improvement and better alignment with customer needs.

The implications of these findings are twofold. Firstly, the manufacturing companies' proactive approach to monitoring and evaluation allows them to identify and address potential issues early on, leading to improved product quality and customer satisfaction. Effective monitoring and evaluation strategies can lead to increased efficiency and reduced risks of equipment failure. Secondly, the difference in perception between management and employees/clients highlights the importance of involving all stakeholders in the monitoring and evaluation process. Engaging employees and customers/clients in the evaluation discussions can lead to a more comprehensive understanding of the company's performance and areas for improvement.

The high ratings for monitoring and evaluation practices among selected manufacturing companies in Metro Manila demonstrate their commitment to quality control and process efficiency. The positive assessment from management reflects a culture of proactive monitoring and evaluation. Emphasizing employee and client involvement in the evaluation process can further enhance monitoring and evaluation practices and lead to improved business outcomes and long-term success.

Results supported the claim of Raj et al. (2022) that establishing relevant KPIs to monitor and evaluate the performance of product development, innovation, marketing, and financial goals; Utilizing data analytics tools to gather insights, track performance, identify areas for improvement, and make data-driven decisions; And implementing a culture of continuous improvement, where regular evaluation, feedback, and learning from past experiences are encouraged are identified as issues or challenges in the manufacturing industry.

Table 8. Summary Assessment of the Practices of Selected Manufacturing Companies

Criteria	Management		Employee		Customer / Client		Composite		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Product Development	3.99	P	4.01	P	3.52	P	3.84	P	3.5
2. Innovation	4.04	P	3.98	P	4.01	P	4.01	P	1
3. Technology	4.50	HP	3.96	P	3.50	P	3.99	P	2
4. Marketing	4.04	P	4.00	P	3.47	P	3.84	P	3.5
5. Finance	4.03	P	2.97	MP	3.98	P	3.66	P	6
6. Planning	3.96	P	3.47	P	4.01	P	3.81	P	5
7. Monitoring and Evaluation	4.01	P	3.49	P	3.09	MP	3.53	P	7
Grand Mean	4.08	P	3.70	P	3.65	P	3.81	P	

Table 8 summarizes the assessment of the practices of selected manufacturing companies in Metro Manila rated as Practiced with the grand mean of 3.81. All items rated as Practiced, these are: innovation with a composite weighted mean of 4.01 as rank 1; technology with a composite weighted mean of 3.99 as rank 2; product development; and marketing with both the composite weighted mean of 3.84 as rank 3 and 4; planning with a composite weighted mean of 3.81 as rank 5; finance with a composite weighted mean of 3.66 as rank 6; and monitoring and evaluation with a composite weighted mean of 3.53 as rank 7.

Generally, the assessments of the groups of respondents on the practices of selected manufacturing companies in Metro Manila rated as Practiced, namely: management with the grand mean of 4.08, employee with the grand mean of 3.70, and client with the grand mean of 3.65.

Results implied that the practices of selected manufacturing companies in Metro Manila can be analyzed in terms of product development, innovation, technology, marketing, finance, planning, and monitoring and evaluation. Examining the level of practices in manufacturing companies in Metro Manila can enhance the Bachelor of Entrepreneurship program by promoting industry relevance, applied learning, networking, and research collaboration. It enables universities and colleges to produce graduates who possess the knowledge, skills, and entrepreneurial mindset needed to thrive in the manufacturing sector and contribute to economic growth.

By focusing on these practices, manufacturing companies in Metro Manila can enhance their competitiveness, drive innovation, and achieve sustainable growth. These practices enable companies to develop high-quality products, adopt advanced technologies, effectively reach target markets, manage finances efficiently, plan for the future, and monitor and evaluate their performance for continuous improvement (Milgram, 2021; Capiña, 2021; World Bank, 2020).

Significant Difference in the Assessments of Three Groups of Respondents as to Aforementioned Variables

Table 10. Comparative Assessment of Practices of Selected Manufacturing Companies in Metro Manila

Areas of Concern		SS	MSS	df	F-value	Critical Value	Interpretation	Decision
1. Product development	Bet. Grp	0.156	0.078	2	17.867	2.70	Significant	Reject Ho
	Within Grp.	0.052	0.004	15				
2. Innovation	Bet. Grp	0.001	0.0008	2	0.23887	2.81	Not Significant	Accept Ho
	Within Grp.	0.042	0.003	12				
3. Technology	Bet. Grp	0.495	0.247	2	42.908	2.70	Significant	Reject Ho
	Within Grp.	0.069	0.005	15				
4. Marketing	Bet. Grp	0.201	0.100	2	29.658	2.62	Significant	Reject Ho
	Within Grp.	0.061	0.003	18				
5. Finance	Bet. Grp	0.719	0.359	2	95.726	2.81	Significant	Reject Ho
	Within Grp.	0.045	0.003	12				
6. Planning	Bet. Grp	0.176	0.088	2	31.079	2.81	Significant	Reject Ho
	Within Grp.	0.034	0.002	12				
7. Monitoring and evaluation	Bet. Grp	0.422	0.211	2	39.299	2.70	Significant	Reject Ho
	Within Grp.	0.064	0.005	15				

As depicted in Table 10, the computed F-values are as follows: product development with 17.867, technology with 42.907, marketing with 29.658, finance with 95.726, planning with 31.079, and monitoring and evaluation with 39.299 were higher than the critical value of 2.70, 2.62, and 2.81 with 2, and 15, 12, and 18 degrees of freedom at 0.05 level of significance. Hence, there is significant difference on the Practices of Selected Manufacturing Companies in Metro Manila in product development, technology, marketing, finance, planning, and monitoring and evaluation as assessed by management, employees, and clients/customers. Therefore, the hypothesis is rejected. On the other hand, the computed F-value of innovation is 0.23887 which is lower than critical value of 2.81 with 2 and 12 at 0.05 level of significance. Hence, there is no significant difference on the Practices of Selected Manufacturing Companies in Metro Manila in innovation as assessed by management, employees, and clients. Therefore, the hypothesis is accepted.

Results implied that the practices can vary across different regions and sectors in the Philippines. Nonetheless, these practices collectively contribute to the dynamic and thriving entrepreneurial ecosystem in the country.

Results corroborate with the studies conducted by Baylous (2018), Caclini (2022), and Francisco et al. (2022) where some companies may prioritize innovation and invest heavily in research and development to create new and unique products. They may have dedicated teams or departments focused on product innovation and continuously strive to introduce cutting-edge offerings to the market. In addition, Chungyas and Trinidad (2022) claimed that manufacturing companies may differ in their adoption and utilization of advanced technologies such as automation, robotics, artificial intelligence, and data analytics.

IV. CONCLUSION

The study examined the practices of selected manufacturing companies in Metro Manila as perceived by management, employees, and clients, concluding that these practices are generally rated as Practiced, with an overall mean of 3.81. Notably, significant differences were found among the three groups regarding various aspects such as product development, technology, marketing, finance, planning, and monitoring and evaluation. However, no significant difference was observed in the assessment of innovation. As a result, the study recommends several actions to enhance entrepreneurship education and industry collaboration. These include revising and enriching the curriculum of local colleges and universities to incorporate specific courses related to key areas of entrepreneurship, fostering partnerships between academic institutions and manufacturing companies through various programs, integrating practical training opportunities into entrepreneurship courses, establishing support services for aspiring entrepreneurs, creating networking platforms for students, promoting research and innovation in entrepreneurship, emphasizing lifelong learning and professional development, collaborating with relevant stakeholders, integrating a global perspective into education programs, and implementing robust evaluation mechanisms. Moreover, future research is suggested to delve into other aspects of practices and their implications for graduate employability.

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