SCIENTIFIC OASIS

Decision Making: Applications in Management and Engineering

Journal homepage: www.dmame-journal.org
ISSN: 2560-6018, eISSN: 2620-0104

Enhancing Business Performance through Operational Planning, Exploratory Innovation and Manufacturing Strategy"

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ARTICLE INFO

Article history:
Received 18 November 2024
Received in revised form 09 February 2025 Accepted 7 March 2025
Available online 29 March 2025

Keywords:
Business performance, Operational planning, Innovations, Manufacturing companies.

ABSTRACT

Business performance is an integral factor because it helps organizations to achieve a competitive advantage. Therefore, the study aimed to test the influence of operational planning, exploratory innovation, exploitive innovation, environmental competitiveness, external environment, and manufacturing strategy on the business performance of manufacturing companies. For this purpose, a quantitative research approach and cross cross-sectional research design were employed to collect the data through a self-administered questionnaire. Collected data analyzed using SPSS and Smart-PLS 4. The PLS-SEM results shown that operational planning has a positive and significant influence on business performance. At the same time, innovation factors also have a significant positive influence on business performance. Environmental factors also have a significant positive influence on business performance. In addition, manufacturing strategy also has a positive and significant impact on business performance. The study with the specific results highlighted that organizations must invest in strengthening strategic planning, raising a culture of innovation, and continuously adapting to external environmental changes to improve overall business performance, which could lead to companies achieving a competitive advantage.

1. Introduction

Currently, performance improvement has become an integral strategic goal for the organization to gain a competitive advantage [17]. It is also need for the time that companies should compete in the volatile market, and this is only possible when the companies are unique in their resources [39]. In contrast, if the companies have traditional approaches, where companies focus on cost reduction and compromise on their production quality, then it could reduce the success of the business [50]. This issue raises the growing importance of business performance, which emphasizes the need for organizations to integrate strategic, operational, and environmental factors to raise their competitiveness [20; 51]. Therefore, understanding of the multidimensional drivers of business performance has become crucial [31]. Firms must not only optimize internal operations but also

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https://doi.org/10.31181/dmame8120251384

invest in innovative activities and maintain agility in responding to external environmental changes [76]. In this regard, to address these complexities study focused on testing the influence of operational planning, innovation factors, environmental factors, and strategic manufacturing on business performance.

The above factors are important for business performance. Among those, operational planning is an important foundational element to increase the business performance [75]. An effective operational plan consists of allocating resources effectively along with clear objectives [48], which leads to improved business performance. It is also further emphasized that operational planning leads to improved business performance through providing a proper strategic plan [28]. Equally, innovational factors like exploratory and exploitative innovations are also important factor which also leads to improved business performance [56]. Exploratory innovation enables firms to experiment with new technologies to develop new products, which helps to increase business performance [53]. Conversely, exploitative innovation focuses on enhancing existing products, services, and processes, thus improving efficiency and customer satisfaction [20]. Other studies also suggest that exploitative innovation ensures a balanced pursuit of short-term efficiency and long-term strategic renewal to increase business performance [28].

Beyond internal capabilities, external environmental factors also exert a significant influence on business performance [19]. From the external environmental competitiveness, environmental competitiveness is enforced on the companies to generate a continuous innovative environment that helps to improve the business performance through survive and thrive [58]. Organizations that operate in highly competitive environments are often more motivated to develop unique value propositions and adopt proactive market strategies [89]. Similarly, responsiveness to the external environment, including technological, regulatory, and socio-economic changes, is critical for organizational sustainability [21]. Firms that can swiftly adapt to external trends and risks are better positioned to exploit emerging opportunities and mitigate potential threats [40]. On the other hand, Bhat and Parvez [16] also enforced that organizations' manufacturing strategy played an integral role in supporting the organizational goals through the efficient production which leads to improve business Thus, the external and competitive environment, combined with robust manufacturing strategies, critically shapes the strategic choices and performance trajectories of modern businesses [26]. These previous studies highlighted that internal capabilities, innovation factors, environmental factors, and manufacturing strategies are important factors to improve business performance. Hence, this study focused on how these factors can improve the business performance of manufacturing companies?

Despite the significance of previous studies on operational planning, innovation, competitiveness, and manufacturing strategy, various gaps that need to be addressed in this study. Firstly, previous literature examined these factors separately by Adomako and Tran [1] and [22; 41; 47], rather than looking at how they impact together to influence business performance. This disjointed approach limits a complete understanding of their combined effect. Secondly, most studies have primarily focused on specific economies with limited attention to more general or emerging national contexts [90]. As a result, the findings may not be fully generalizable across different institutional and industrial environments. Lastly, existing research has shown inconsistent findings, especially when comparing different countries and industries [5; 83]. Therefore, this study addresses these gaps by examining the effect of operational planning, exploratory innovation, exploitive innovation, environmental competitiveness, external environment, and manufacturing strategy on the business of manufacturing companies in one model. The study with the specific objective methodologically contributed that through employing Smart PLS, it allows for rigorous analysis of both measurement and structural models. The use of Smart PLS enhances the

methodological study's ability to assess complex relationships among latent variables, ensuring robustness in construct validation and predictive relevance.

With the theoretical and methodological contributions, the findings of this study also hold significant practical implications. The study shows that combining effective planning, innovative practices, and strong manufacturing strategies can boost business performance, highlighting the importance of a unified approach for long-term success. The study offers useful insights to help manufacturing companies improve efficiency and adapt to shifting market conditions. Furthermore, findings give valuable direction to decision-makers in developing countries, showing how strategic planning and innovation can improve industrial efficiency. This research can guide national development strategies and industrial transformation efforts, helping countries diversify and modernize their manufacturing bases. Further research parts segregated into four chapters, literature review, methods of research, analysis, and discussion.

2. Literature Review

2.1 Operational Planning and Business Performance

Operational planning is the process of translating strategic goals into short schemes, specific tasks, resource allocation, deadlines, and performance matrix [18]. Effective operating planning increases the coordination between departments, adapts resource use, and facilitates timely decision-making [13]. By setting clear expectations and benchmarks, it makes organizations to monitor progress, identify deviations early, and implement corrective actions immediately [65].In a dynamic business environment, a strong operating plan allows companies to change, maintain efficiency, and achieve the desired results quickly [75].In addition, it promotes the culture of responsibility and continuous improvement, as employees understand their roles and their contributions to the overall performance [33]. Thus, the operational plan not only a tool of management but it helps to provide a strategic imperative that increases the organizational success [40].

Alaqeel and Masrom [4] empirical research found that strategic plan, including operating elements, significantly affects both economic and non-economic performance measurements. This study stated that components such as environmental and management participation play an important role in increasing organizational results integrated for operational schemes. Similarly, Ramirez [75] confirmed that a systematic operating plan improves service quality and operating efficiency. In addition, Hassan and Abdelkader [40] emphasized that companies that practice structured operating plans are better equipped to navigate external uncertainties and internal challenges, which promotes flexibility and growth. These findings show that the operational plan is about internal efficiency and coordinating organizational abilities with market requirements and opportunities. Therefore, investment in extensive operating planning processes can lead to better performance, and the study has the following hypothesis below,

H1: Operational planning significantly improves business performance.

2.2 Exploratory Innovation and Business Performance

Exploratory Innovation involves the discovery of new ideas, technologies, and processes leading to the development of new products or services, and often comes into new markets [25]. This type of innovation is characterized by experimentation, risk taking and existing knowledge and desire to distract from practice [67]. This allows companies to be ahead of technical trends, respond to the needs of new customers, and seize new market opportunities [73]. Organizations can generate reproductions of industry standards by promoting a culture that encourages creativity and learning

[27]. Searching in industries with rapid technological progress is especially important, and the transfer of consumer preferences [84]. In addition, it contributes to long-term development by creating a portfolio of different offers and reducing dependence on existing products [15]. Thus, organizations must embrace innovation to promote progress and maintain success.

Various empirical studies support a positive relationship between exploratory innovation and business performance. Radziwon et al. [73] found that a positive innovation setting among entrepreneurs improves business performance. The study insisted that entrepreneurs are open to new ideas and are willing to invest in unsafe companies, which motivates their companies to develop innovative offers. In addition, Tseng et al. [86] study also found that R&D cooperation with universities and large companies affects the exploratory innovation, which promotes innovative performance. Similarly, Arzo and Hong [8] confirmed that environmental mobility strengthens the effect of detected innovation on organizational success. Previous studies highlighted that promoting exploration and innovation by supporting approaches and strategic partnerships can be a significant improvement in trade results, which leads to improved business performance, and hence, the study has the following research hypothesis below,

H2: Exploratory innovation significantly improves business performance.

2.3 Exploitative Innovation and Business Performance

The exploitive innovation is being focused on refining and increasing existing products to increase the efficiency, reduce costs, and also to enhance customer demands [3]. It consisted of leveraging existing knowledge for the incremental improvements [6]. Such types of innovations are important for maintaining competitiveness in the markets where customer expectations are well-defined [64]. Other authors also suggested that through the quality improvements from various innovations, the productivity of the firms also increases, which leads to improved business performance [85]. Exploitative innovation also allows the organization to respond swiftly to the market requirements, which increases the business performance [23]. Moreover, it provides a stable foundation for revenue generation, which can fund more exploratory initiatives [64]. Therefore, while it may not lead to radical breakthroughs, exploitative innovation is essential for sustaining business performance [41].

Héraud [44] empirically also found that companies that have a proper innovative attitude are not only engaged in exploratory activities but also help to excel in exploitative innovations. They also found a significant relation between exploitative innovations and business performance. Similarly, Bucaioni et al. [20] observed that exploitative collaborations, particularly with large firms and positive impact on innovative performance by supporting continuous product improvements. Zhang et al. [95] study also emphasized that the alignment of exploitative capabilities with strategic goals strengthens firm performance. Van den Buuse et al. [87] also support that firms balancing exploitative innovation with exploration are more resilient and successful over time. These findings highlighted that exploitative innovation significantly improves business performance and have the following hypothesis below,

H3: Exploitative innovation significantly improves business performance.

2.4 Environmental Competitiveness and Business Performance

Environmental competition is the competition of companies with other companies, which is influenced by market saturation, technological progress, and regulatory changes [93]. A very competitive environment forces companies to innovate, improve, and reduce the costs of maintaining or increasing the market status [30]. External environment acts as an important factor to improve the business performance [62]. In such settings, which can be compatible with companies' quickly competitive mobility, they are more likely to achieve better performance [52]. In addition, environmental competition promotes the culture of continuous improvement and

customer focus [10]. Therefore, while intensive competition faces challenges, it also motivates companies to adapt and innovate their abilities, and eventually contributes to increased business results [59]. Adomako and Tran [1] study explored and found that environmental competitiveness has a significant influence on business performance. They also highlighted that a competitive environment increases the focus on innovation and operational excellence. AlAbri et al. [3] findings also indicated that engaging in explorative and exploitative collaborations responds effectively to competitive pressures, enhancing innovative performance. Santos-Vijande et al. [80] also confirmed that firms practicing strategic flexibility in competitive environments experience better performance. All above studies are highlighting that environmental competitiveness is an integral factor to increase the business performance of the organizations, and the study has the following research hypothesis,

H4: Environmental competitiveness significantly improves business performance.

2.5 External Environment and Business Performance

Furthermore, the external environment also significantly improves the organization's performance through improving economic conditions and the regulatory framework [11]. The external environment shapes the environment where companies accept the market dynamics and competitive challenges, which increases the business performance [77]. Companies with favorable environments lead to enhanced opportunities, which help to increase the company's growth, innovations, and market expansions [63]. In contrast, an unfavorable environment may pose threats that require strategic mitigation [74]. Organizations that actively monitor and respond to environmental changes are better positioned to capitalize on emerging trends [9]. By aligning their strategies with external realities, firms can enhance their resilience, agility, and overall performance [35]. In this regard, understanding and adapting to the external environment becomes crucial for sustaining business success in the complex market environment [72]. Makhloufi et al. [60] highlighted that external environmental factors increase the positive impact on business performance when companies have stronger environmental regulations. They also argued that supportive external conditions, such as favorable regulations and market demand for sustainable products, enhance firm performance. In the same vein, Nguyen and Nguyen [66] results also highlighted that companies that are engaged in strategic R&D collaborations were more resilient in changing external environments. YahiaMarzouk and Jin [94] also confirmed that firms emphasizing environmental scanning practices achieved superior adaptive performance. These studies highlighted that proactive engagement of companies with the external environments increases the business performance and sustainability and hence the study has the following hypothesis below,

H5: The External environment significantly improves the business performance.

2.6 Manufacturing Strategy and Business Performance

A production strategy includes the construction and implementation of schemes related to production processes, technologies, and resources to achieve alignment goals with business goals [42]. This process covers decisions on design, capacity scheme, quality management, and supply chasing coordination [69]. An efficient production strategy ensures operational efficiency, product quality, and responsibility for market requirements [75]. Strategic production decisions increase the cost competition and flexibility [78]. In industries facing technical and demanding changes, a strong production strategy becomes necessary to maintain the relevance of the market [71]. In addition, the adjustment of production skills with business strategies promotes innovation and continuous improvement [88]. Therefore, a dynamic production strategy is important to achieve operational skill and maintain better commercial performance [2].

Empirical studies highlight the important role of production strategy in increasing professional performance. Oladimeji and Owoade [70] found that SMB improved its innovative production and competition by using collaborative production strategies with technical partners. Similarly, [69]

revealed that companies that integrate green production practices received permanent competitive benefits. Research from Ghasemi et al. [34] showed that coordinating production priorities with market needs leads to better operations and financial results. Ramirez [75] also emphasized that a clear production strategy serves as a foundation stone for effective business results. These conclusions confirm that strategic production practices operate innovation, efficiency, and long-term development in competing industries, and hence, the following hypothesis is proposed below,

H6: Manufacturing strategy significantly improves business performance.

3. Research Approach and Design

The study aimed to test the influence of operational planning, exploratory innovation, exploitive innovation, environmental competitiveness, external environment, and manufacturing strategy on the business of manufacturing companies. Researchers used the quantitative research approach for the study objective, which is appropriate for employing statistical methods to measure the study variables [24]. In other words, Data was gathered using a cross-sectional research technique since the self-administered questionnaire at one time is thought to be appropriate for the current study [24]. In this regard, the study employed the cross-sectional research design. Data was collected from employees of manufacturing companies, which is the population of the current study. Researchers employed the convenient sampling strategy to gather data. Convenient sampling is thought to be a suitable method when the study requires individuals with particular traits that support its objectives [29]. Under the assumption of convenient sampling techniques, there were 350 questionnaires were distributed to the employees of manufacturing companies. Of those, 280 survey instruments were returned. This response is enough for the Partial Least Squares (PLS)-Structural Equation Modeling (SEM) [45]. More than 60 percent response rate is considered to be sufficient for the findings' credibility and enhances generalizability within similar demographic and market settings. In this regard, this response rate is enough for the study.

3.1 Research Instrument and Research Framework

The study instrument was taken from the extant literature, where it had already been tested. From the innovation factors, exploitative innovation was measured from 3 items, and exploitative innovation was measured from 3 items. Each item of the variable was composed from [49]. These items were further modified by [55]. From the environmental factors, environmental competitiveness comprises 4 items [49], and the external environment comprises 8 items [92]. Operational planning is measured by 5 items [47]. Manufacturing strategy comprises four dimensions, namely cost, quality, flexibility, and delivery, which were adopted from [54]. Lastly, business performance comprises 6 items, and these items were compiled from [92]. These items were further modified by [55]. Every question was measured on a five-point Likert Scale. The above items are included in Table 1, and variables are predicted in Figure 1.

Table 1
Measurement Scale

Variable	Number of Items	Source	Scale
Exploitative Innovation	3	[49]	5-point Likert Scale
Explorative Innovation	3	[49]	5-point Likert Scale
Environmental Competitiveness	4	[49]	5-point Likert Scale
External Environment	8	[49]	5-point Likert Scale
Operational Planning	5	[47]	5-point Likert Scale
Manufacturing Strategy		[54]	5-point Likert Scale
Quality	3		
Flexibility	3		
Deliverty	3		
Cost	3		
Business Performance	6	[92]	5-point Likert Scale

Fig.1. Conceptual Framework

4. Data Analysis and Results

Collected data analyzed from two software namely SPSS and Smart PLS 4. Smart PLS was selected for hypothesis testing utilizing the PLS-SEM technique, which looks for and elucidates causal relationships across components, while SPSS was utilized for data screening and demographic analysis [81].

4.1 Demographic Analysis

Demographic characteristics of the employees have been discussed in the current section. Among the 280 respondents, 60.7% are males and 39.3% are females. This shows that manufacturing companies are a male-dominated society. On the other hand, the majority of employees fall within the 30–39 age group (40%), followed by 20–29 years (25.7%) and 40–49 years (23.2%), indicating a relatively young to middle-aged workforce. Regarding education, over half hold a Bachelor's degree (51.8%), while 27.9% have a master's degree, 12.5% possess a high school diploma, and 7.9% have attained a Doctorate, reflecting a well-educated employee base. Job positions are mainly distributed across mid-level (43.6%), entry-level (28.6%), and senior/managerial roles (27.9%). In terms of experience, the majority have between 1–5 years (37.5%) or 6–10 years (32.9%) of work experience, followed by those with more than 10 years (22.5%), and a small group with less than one year (7.1%), indicating a mix of both experienced and relatively new employees in the organization. Table 2 depicts the above results.

Table 2:
Demographic Results

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	170	60.7
	Female	110	39.3
Age Group	20–29 years	72	25.7
	30–39 years	112	40
	40–49 years	65	23.2
	50 years and above	31	11.1
Education Level	High School Diploma	35	12.5
	Bachelor's Degree	145	51.8
	Master's Degree	78	27.9
	Doctorate	22	7.9
Job Position	Entry Level	80	28.6
	Mid-Level	122	43.6
	Senior-Level/Managerial	78	27.9
Experience (Years)	Less than 1 year	20	7.1
	1–5 years	105	37.5
	6–10 years	92	32.9
	More than 10 years	63	22.5

4.2 Validity and reliability of the Questionnaire

For the construct acceptability, it is necessary to test the study's reliability and validity using a measurement model through the evaluation process. For the internal consistency, composite reliability (CR) and alpha both are important, where threshold values should be greater than 0.70 [36; 68]. On the other hand, convergent validity was examined using factor loadings and average variance extracted (AVE). Among these, all factor loadings are above the benchmark, and AVE values are also above the benchmark that exceeding the values of 0.50 [32]. These results mentioned above satisfy the measurement model's criteria, demonstrating that each construct accurately conveys the intended idea and enhancing the structural model's overall credibility [37]. Measurement model results are depicted in Table 3 and Figure 2, which fulfills the requirements of convergent validity.

Table 3
Convergent Validity Results

Construct	Item Code	Mean	α	CR	AVE
Exploratory Innovation	EI1	3.681			
	EI2	3.742	0.881	0.911	0.721
	EI3	3.731			
Exploitative Innovation	EXI1	3.912			
	EXI2	3.883	0.892	0.922	0.752
	EXI3	3.921			
Environmental Competitiveness	EC1	3.933			
	EC2	3.951	0.921	0.932	0.762
	EC3	3.921			
	EC4	3.943			
External Environment	EE1	3.771			
	EE2	3.793	0.891	0.912	0.683
	EE3	3.761			
	EE4	3.821			
	EE5	3.782			
	EE6	3.812			
	EE7	3.831			
	EE8	3.821			
Operational Planning	OP1	3.871			
	OP2	3.921	0.882	0.912	0.664
	OP3	3.893			
	OP4	3.853			
	OP5	3.943			
Manufacturing Strategy – Cost	MSC1	3.852			
	MSC2	3.94	0.882	0.912	0.724
	MSC3	3.884			
Manufacturing Strategy - Quality	MSQ1	4.423			
	MSQ2	3.925	0.892	0.922	0.734
	MSQ3	3.927			
Manufacturing Strategy - Flexibility	MSF1	3.725			
	MSF2	3.728	0.882	0.913	0.714
	MSF3	3.248			
Manufacturing Strategy - Delivery	MSD1	3.932			
	MSD2	3.829	0.872	0.896	0.743
	MSD3	3.941			
Business Performance	BP1	3.925			
	BP2	3.923	0.832	0.863	0.753
	BP3	3.884			
	BP4	3.912			
	BP5	3.943			
	BP6	3.922			

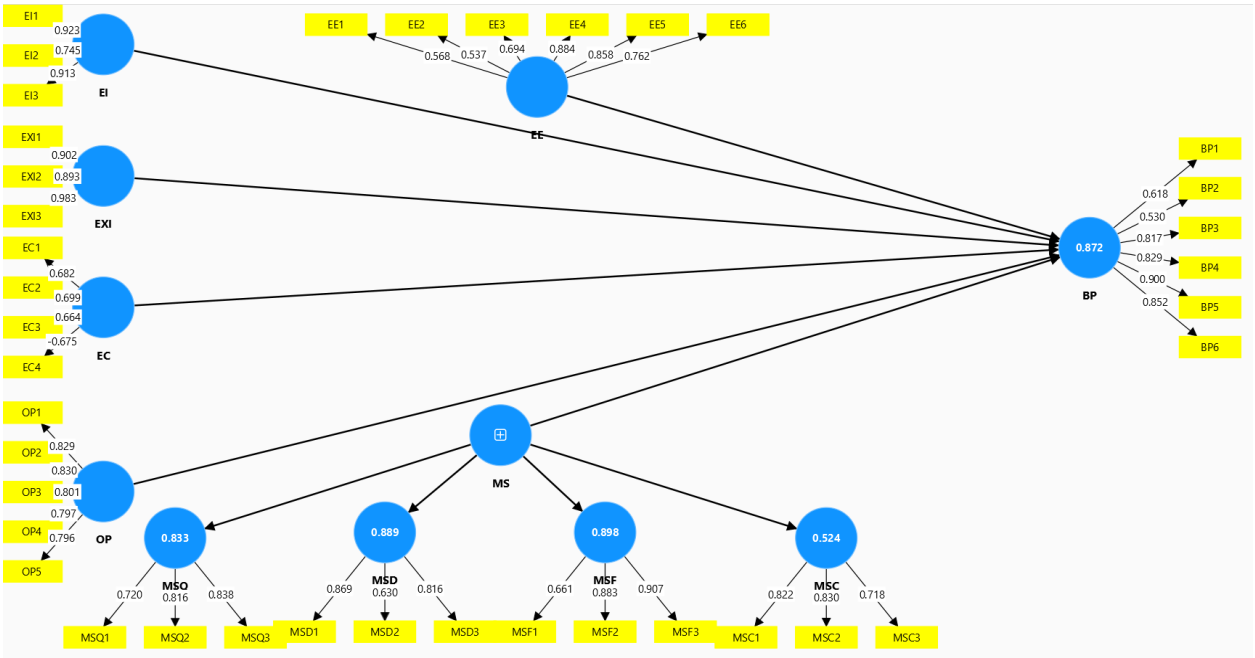

Fig.2. Factor Loadings

The discriminant validity in the Smart PLS is considered to be important to ensure that the model is different from others. Three criteria's used for discriminant validity, namely, Fornell and Larcker, heterotrait monotrait correlation, and cross loadings. One widely used method to assess discriminant validity is the Fornell and Larcker criterion, which compares the square root of the AVE of each construct with its correlations with other constructs, and it should be higher [38; 43]. Each AVE value is greater than the value below, which indicates that the construct has discriminant validity. Discriminant validity outcomes are shown in Table 4.

Table 4
Discriminant validity

Construct	EI	EXI	EC	EE	OP	MSC	MSQ	MSF	MSD	BP
EI	0.849									
EXI	0.342	0.867								
EC	0.239	0.334	0.873							
EE	0.605	0.236	0.723	0.826						
OP	0.321	0.233	0.637	0.348	0.815					
MSC	0.346	0.341	0.342	0.346	0.328	0.851				
MSQ	0.508	0.346	0.323	0.345	0.237	0.239	0.857			
MSF	0.505	0.538	0.329	0.343	0.322	0.325	0.372	0.845		
MSD	0.347	0.529	0.231	0.324	0.323	0.236	0.65	0.336	0.862	
BP	0.236	0.341	0.342	0.235	0.327	0.437	0.349	0.345	0.638	0.868

4.3 Hypothesis Results

Furthermore, in the Smart PLS model, fitness could be evaluated from the coefficient of determination, which has been denoted by R-squared, which indicates the proportion of variance in the dependent variable explained by the independent variables. A higher R^2 value suggests better predictive accuracy of the model. In general, R^2 values of **0.75**, **0.50**, and **0.25** can be described as substantial, moderate, and weak, respectively [38]. Therefore, examining R^2 helps determine how well the structural model explains the constructs' outcomes, supporting the model's overall explanatory power. The R-squared value for the current study is 87.2%, which shows that independent variables have a substantial impact on BP. Structural model used employing a 5000

resampling technique. Structural model results highlighted that exploratory innovation (β = 0.770, p = 0.009) and exploitative innovation (β = 0.639, p = 0.008) demonstrate the strongest positive effects on business performance. Operational planning (β = 0.425, p = 0.033) and environmental competitiveness (β = 0.559, p = 0.008) also contribute significantly to increasing the business performance. This shows that strategic foresight and responsiveness to market dynamics are essential for organizational success. The external environment also showed a significant (β = 0.294, p = 0.013) effect on the business performance, which emphasizes the need for companies to adapt to external pressures and opportunities.

Table 5
Hypothesis Results

Hypothesis	Beta	Standard Error	t-value	p-value
OP→ BP	0.425	0.056	7.59	0.033
EXI→ BP	0.77	0.137	5.62	0.009
EI→ BP	0.639	0.11	5.81	0.008
EC → BP	0.559	0.121	4.62	0.008
EE→ BP	0.294	0.052	5.65	0.013
MS→ BP	0.294	0.147	2	0.021
R Square Value	87.2%			

Lastly, manufacturing strategy positively affects business performance (β = 0.294, p = 0.021), which confirms the significance of aligning operational capabilities with strategic goals. Such results highlight that internal planning and innovations, along with the external and competitive forces, are vital for enhancing performance in the manufacturing sector, and these results are predicted in the Table 5 and Figure 3.

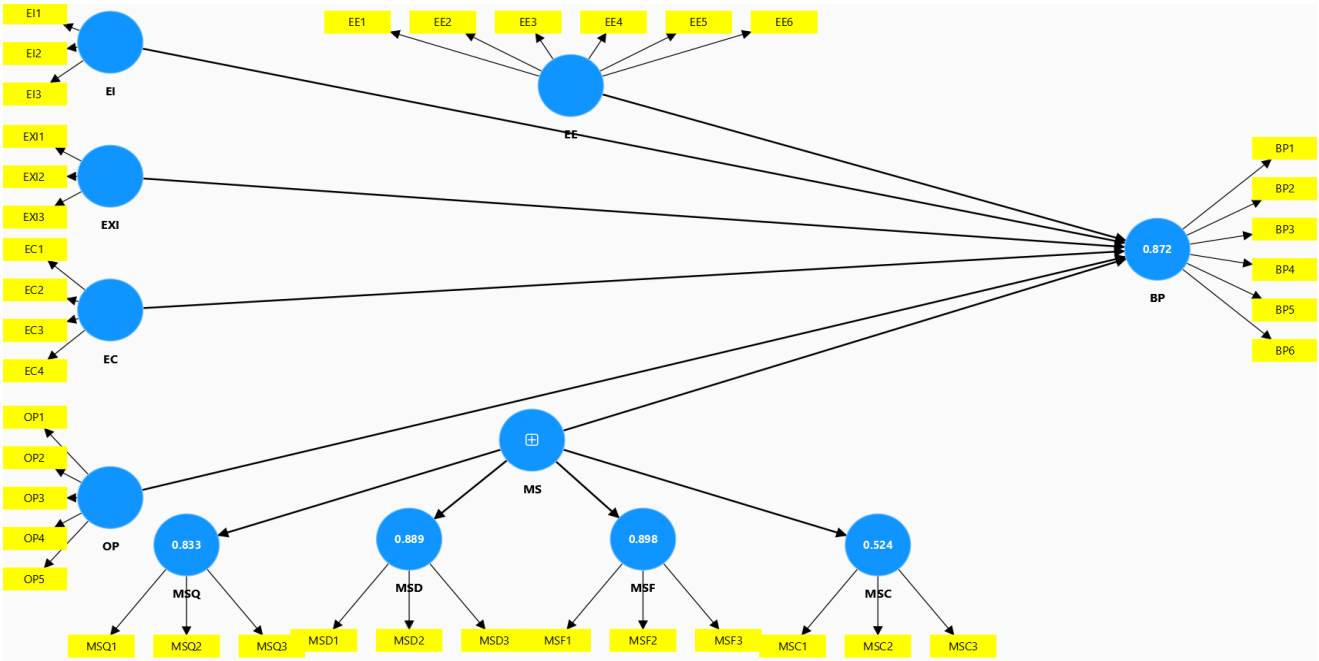

Fig.3. R Square Values

5. Discussion

The results provide a significant positive impact of operational planning on the business performance of manufacturing companies. These results show that operational planning plays an integral role in the clear production goals and streamlining internal processes, which leads to enhanced business performance. In this regard, this result emphasizes the significance of a

structured operational framework for increasing the company's performance. Historically, the manufacturing companies adopted a mechanism that is more data-driven, which has become better positioned to handle the production challenges. In the same vein, Bednarek et al. [14] also found that companies that are applying the more predictive planning system then they demonstrated a substantial reduction in production downtime and a better alignment between capacity and demand. The enhancement of production through effective planning can increase firms' outputs, reduce waste, and ultimately support broader economic growth through consistent industrial performance. Moreover, as operational planning integrates forecasting and budgeting techniques with enterprise resource planning (ERP) systems, it allows for more accurate alignment between strategic intentions and operational execution. This connection ultimately strengthens the responsiveness and sustainability of manufacturing activities, supporting national productivity objectives. Therefore, it is enforced that manufacturing companies should have a proper planning system that could lead to improving the performance of making companies more sustainable.

Further study also highlighted that exploratory innovation significantly increases the business performance of manufacturing companies. These results show that exploratory innovation in manufacturing companies is enabling firms to adapt quickly to evolving market demands and differentiate themselves through cutting-edge offerings. Ramirez [75] highlighted the same results, where they found that firms that are engaging in higher levels of exploratory innovation experienced stronger market growth and customer satisfaction. Andruscavage [7] also demonstrated that firms that dedicated substantial resources to open innovation and technology scouting outperformed their industry peers in terms of agility and revenue growth. These findings highlight that companies are increasingly establishing innovation departments and collaborating with tech firms and universities to explore emerging technologies. These strategies not only lead to unique product innovations but also enhance firms' competitiveness and ability to enter new markets, and this could contribute to increasing the production volume. In it regard, it could be explained that exploratory innovation drives long-term sustainability by allowing firms to create entirely new markets, reduce reliance on outdated technologies, and position themselves as industry leaders in technological transformation. This creates a cycle where innovation leads to growth, reinvestment, and broader economic contribution. Therefore, it emphasizes the necessity for manufacturing firms to invest in novel product development, R&D, and technology adoption that could lead to an increase the business performance.

Other findings highlight a significant positive relation between exploitative innovations on a manufacturing company’s performance. These findings highlight that refining existing products, processes, and capabilities can significantly boost efficiency and market responsiveness. Wang et al. [91] found the same results where they found that firms who are emphasizing on the innovations and learnings from the previous experiences then they are consistently improved output and customer retention. Sabillon [79] also highlighted the view where they documented that manufacturing firms that focused on process optimization and incremental innovations achieved notable gains in throughput and defect reduction. Such improvements can lead to enhanced firm performance, contributing to industrial sustainability and supporting economic stability through increased export potential and productivity. Additionally, exploitative innovation is often less resource-intensive than exploratory innovation, making it a practical strategy for manufacturing companies to pursue cost-effective performance improvements while remaining competitive. Over time, these marginal gains accumulate, enhancing operational effectiveness and facilitating expanded contributions to national economic output. These studies highlight that companies should focus on explosive innovation to increase the company’s performance.

In addition to previous findings, environmental competitiveness also positively and significantly

improves business performance. These results highlighted that manufacturing firms are proactively assess competitor strategies, customer expectations, and industry trends, which enables them to get a better position to achieve a competitive market. This result is highlighted by the previous studies Bashir [12], which highlighted that maintaining a strong competitive intelligence and investing in benchmarking outperform their peers in profitability and innovation responsiveness. Mata et al. [61] also found the same results, where they highlighted that firms that are engaged in competitive analytics and strategic agility significantly enhanced their market share and revenue growth. These findings enforced that manufacturing companies should adopt real-time analytics and market sensing tools to refine their strategies and align production with consumer demand. These approaches could increase output efficiency, minimize overproduction or stockouts, and help stabilize firm revenues, which could increase the company's business performance, which could increase competitive advantage. The companies that want to stay long-term in the competitive market should raise a culture of continuous improvement and innovation, which can elevate a firm's brand reputation and attract more skilled labor, further supporting production scalability. In the long term, competitive responsiveness strengthens the industrial base, facilitating more resilient and growth-oriented economic structures.

In other words, the external environment also leads to an increase in the business performance of manufacturing companies. These results show that manufacturing companies are using the risk manufacturing framework to anticipate and mitigate external shocks. Such practices ensure production continuity, reduce downtime, and safeguard revenue streams. Over time, this adaptability strengthens the industry's resilience and supports sustained contributions to GDP and industrial employment. This relationship emphasizes the importance of adapting regulatory changes for those firms that want to remain agile and flexible in the face of external pressures that could better sustain their operations and capitalize on emerging opportunities. Liu et al. [57] had the same outcomes, where they highlighted that adaptive manufacturing firms that monitored external dynamics experienced more consistent performance and innovation outcomes.

At last, manufacturing strategy also positively and significantly improves the business performance of manufacturing companies. These results show that manufacturing companies are now embracing lean manufacturing, automation, and continuous improvement programs to align operations with strategic goals. These efforts are leading to making it more efficient resource utilization and higher production volumes. Enhanced manufacturing strategies help firms scale up their operations, increase their market share, and boost their contributions to national economic performance through increased industrial output and innovation-driven growth. Sharma et al. [82] also supported the view that emphasized that firms with well-defined manufacturing strategies showed higher productivity, better supply chain coordination, and superior product quality. Hermundsdottir and Aspelund [46] also supported the same view, where they highlighted that strategic manufacturing decisions significantly impact a firm's profitability. These results highlighted that companies should have a proper manufacturing strategy because a well-executed strategy also improves workforce engagement, reduces cycle times, and fosters integration with supply chain partners, all of which further enhance sustainable industrial development and macroeconomic advancement.

6. Implications

Based on the findings from the study, many theoretical implications increase the understanding of business performance in manufacturing companies. First, the operational plan, innovation, both of exploratory and exploitative, environmental factors, and integration of strategic production decisions in an integrated structure emphasize the multi-dimensional nature of performance

management. The results supported and expanded resource-based and dynamic capacity principles by demonstrating that companies can create a competitive advantage not only through internal capacity but also through the external environment and technical changes. In addition, the study contributes to the theory of innovation on how both radical and old innovation play an additional role in increasing the results. This theoretical insight can serve as a basis for the future model that assesses fixed performance in the unstable industrial landscape. Further, the study also contributed to helping researchers conduct their research with the extended model that could increase their understanding to know the scope of the current study model. At the practical level, conclusions provide clear guidance to production companies intending to improve performance and contribute to extensive economic development. Organizations are encouraged to invest in structured operating plan systems that include forecasts, budgets, and ERP equipment to increase decision-making and resource allocation. In addition, to promote an innovative culture that balances the discovery and utilization of approaches, let the companies remain both flexible and efficient. Researchers should place more emphasis on competitive analysis and risk management to navigate external uncertainty.

7. Conclusion and Future Directions

The research aimed to test the influence of operational planning, exploratory innovation, exploitive innovation, environmental competitiveness, external environment, and manufacturing strategy on the business of manufacturing companies. A quantitative research approach and cross-sectional research design were employed to collect the data through a self-administered questionnaire. The PLS-SEM results show that operational planning has a positive and significant influence on business performance. Innovation factors also have a significant positive influence on business performance. Environmental factors also have a significant positive influence on business performance. In addition, manufacturing strategy also has a positive and significant impact on business performance. The study with the specific results highlighted that organizations must invest in strengthening strategic planning, raising a culture of innovation, and continuously adapting to external environmental changes to improve overall business performance, which could lead to companies achieving competitive advantage. Furthermore, theoretical insight of the study could also serve as a basis for the future model that assesses fixed performance in the unstable industrial landscape. Further, the study also contributed to helping researchers conduct their research with the extended model that could increase their understanding to know the scope of the current study model. With these contributions, the study still have limitations that could be focused on in future research. For instance, study focused on direct effect while ignored the moderating or mediating effect. Therefore, further research could explored on moderating influence to increase research scope. In addition, study limited on manufacturing companies which results could not generalized on other sector. Therefore, further research could be explored on service sector in increasing study scope.

Funding:

This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant Number KFU251188]'.

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