



Explicating the mediating role of Outsourcing Strategy: Operations Management Practices affecting Capacity Expansion Decision

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ARTICLE INFO

ABSTRACT

Keywords:

Operation Management Practices, Capacity Expansion Decision, Outsourcing Strategy, Strategic Alignment.

Received: May, 18, 2023

Accepted: June, 12, 2023

Published: July, 22, 2023

Understanding the relationship between operations management practices, capacity expansion decisions, and the mediating role of outsourcing is essential for organizations seeking to optimize their operations in dynamic market environments. Therefore, this study is aimed to empirically evaluate the relationship between operations management practices and capacity expansion decision with mediating role of outsourcing strategy. Pharmaceutical industry was targeted to gather respondent's data in order to statistically evaluate. 175 respondent's data from 18 pharmaceutical companies were incorporated and examined using SmartPLS 4.0. As a result, operations management practices play a crucial role in evaluating the need for capacity expansion, optimizing processes, analyzing risks, and aligning operations with strategic goals. However, the outsourcing strategy acts as a mediating factor that influences the final decision. The outsourcing strategy considers cost-effectiveness, flexibility, core competency focus, risk management, and strategic alignment. By incorporating the outsourcing strategy, organizations can make informed decisions that maximize operational efficiency and support long-term growth objectives.

1. INTRODUCTION

In today's highly competitive business environment, organizations are constantly striving to enhance their operational efficiency and effectively manage their resources. Operations management practices play a critical role in achieving these objectives, as they encompass a wide range of activities aimed at optimizing processes, improving productivity, and ensuring the smooth flow of goods and services. One key

decision that operations managers often face is whether to expand their capacity to meet growing demands and capitalize on new opportunities. The capacity expansion decision holds significant implications for organizations, as it involves substantial investments in infrastructure, technology, and human resources. It requires careful consideration of various factors, including market demand, financial feasibility, technological

advancements, and operational capabilities. Furthermore, the impact of operations management practices on this decision cannot be overlooked, as they directly influence an organization's ability to effectively utilize its resources and meet customer requirements (Hitt et al., 2016).

Operations management practices encompass a broad spectrum of activities, ranging from supply chain management and production planning to quality control and inventory management. These practices help organizations optimize their processes, minimize waste, and improve overall efficiency (Sutawidjaya et al., 2020). By implementing effective operations management practices, organizations can enhance their capacity utilization, reduce costs, and streamline their operations, ultimately positioning themselves for growth and success. (Nawanir et al., 2013)

The relationship between operations management practices and the capacity expansion decision is multi-faceted (Ishizaka et al., 2019). First and foremost, operations management practices enable organizations to accurately assess their current capacity utilization and identify potential bottlenecks or inefficiencies. By analyzing key performance indicators, such as production rates, cycle times, and resource utilization, operations managers can determine whether existing capacity can meet projected demands or if expansion is necessary (Raut et al., 2019).

Furthermore, operations management practices facilitate the identification of process improvements and productivity enhancements that can optimize existing capacity. By implementing lean manufacturing principles, for example, organizations can eliminate waste, reduce lead times, and increase throughput, thus maximizing their current capacity without immediate expansion (Lee and Charles, 2022).

On the other hand, operations management practices can also provide valuable insights into the feasibility and requirements of capacity expansion (Allaoui et al., 2019). By analyzing historical data, demand patterns, and market forecasts, operations managers can estimate the expected increase in demand and determine the additional capacity required to meet it (Ishizaka et al., 2019). Additionally, operations management practices help organizations evaluate the financial implications of expansion, considering factors such

as capital investments, operating costs, and return on investment (Lee and Charles, 2022).

Outsourcing strategy refers to the deliberate decision of an organization to delegate certain operational tasks or functions to external partners or suppliers (Nuseir and Aljumah, 2020). This strategic approach allows organizations to leverage external expertise, access specialized resources, and focus on their core competencies while expanding their capacity. The integration of outsourcing strategy into the capacity expansion decision can significantly influence the overall impact of operations management practices (Edvardsson et al., 2020).

The relationship between operations management practices, capacity expansion, and outsourcing strategy is intricate and interdependent. On one hand, operations management practices enable organizations to assess their current capacity utilization, identify potential inefficiencies, and determine the need for expansion. By analyzing key performance indicators and optimizing existing processes, organizations can maximize their current capacity and potentially postpone or minimize the need for immediate capacity expansion (Battistoni et al., 2013).

Moreover, the impact of operations management practices on the capacity expansion decision is profound. These practices enable organizations to assess their current capacity utilization, optimize existing processes, and evaluate the feasibility of expansion (Kurilova et al., 2019). By implementing effective operations management practices, organizations can make informed decisions regarding capacity expansion, ensuring that they meet customer demands, stay competitive, and achieve long-term growth.

2. THEORETICAL BACKGROUND

2.1. Operations Management

Operations management practices refer to a set of strategies, principles, and activities employed by organizations to effectively and efficiently manage their operations. These practices encompass a wide range of activities involved in the design, planning, execution, and control of various processes and resources within an organization (Alshawabkeh et al., 2021). The primary objective of operations management practices is to optimize productivity, minimize waste, enhance quality, and ensure the smooth flow of goods and services.

Operations management practices cover a broad spectrum of activities, including but not limited to:

1. **Production Planning:** This involves determining the most efficient methods, processes, and resources required to produce goods or deliver services. It includes activities such as capacity planning, material requirements planning, and scheduling.
2. **Supply Chain Management:** This practice focuses on managing the flow of materials, information, and resources from suppliers to the final customers. It involves activities such as procurement, logistics, inventory management, and supplier relationship management (Bawaneh et al., 2023).
3. **Quality Management:** This practice aims to ensure that products or services meet or exceed customer expectations. It includes activities such as quality control, quality assurance, continuous improvement, and the implementation of quality standards or certifications.
4. **Process Improvement:** This involves identifying and implementing strategies to enhance operational efficiency and effectiveness. It may include methodologies such as Lean Manufacturing, Six Sigma, or Total Quality Management, which aim to eliminate waste, reduce defects, and improve overall performance (M. T. Alshurideh et al., 2023a).
5. **Inventory Management:** This practice involves managing the levels of raw materials, work-in-progress, and finished goods to ensure optimal inventory levels. It includes activities such as demand forecasting, stock control, and order management (Kurdi et al., 2022c).
6. **Technology and Innovation:** This practice focuses on leveraging technology and innovation to improve operations. It includes activities such as adopting new technologies, implementing automation or digitization, and fostering a culture of innovation within the organization (Nuseira and Aljumahb, 2020).
7. **Human Resource Management:** This practice involves managing the workforce to ensure that employees have the

necessary skills, training, and motivation to perform their tasks effectively (Khan et al., 2022). It includes activities such as recruitment, training, performance management, and employee engagement (Akour et al., 2023).

By implementing effective operations management practices, organizations can enhance their operational efficiency, reduce costs, improve customer satisfaction, and gain a competitive advantage in the market (Aljumah et al., 2020). These practices are vital for organizations across various industries and sectors, as they provide the foundation for effective resource utilization, process optimization, and strategic decision-making.



Figure 1: Operation Management Practices

2.2 Capacity Expansion Decision

The capacity expansion decision refers to the strategic process undertaken by an organization to increase its production or service delivery capabilities in response to growing demand, new market opportunities, or the need to improve operational efficiency (Al Aljumah et al., 2022a). It involves evaluating the current capacity of an organization's resources, infrastructure, and systems, and making a decision to invest in additional resources or infrastructure to meet future demand requirements (I. Akour et al., 2022). Capacity expansion decisions are critical for organizations as they directly impact the ability to meet customer needs, maintain competitiveness, and support business growth. These decisions typically involve a thorough analysis of various factors such as market demand trends, sales forecasts, production or service delivery capabilities, and financial considerations (Aityassine et al., 2022).

When making a capacity expansion decision, organizations need to assess the feasibility, risks, and potential benefits associated with expanding their operations. This includes evaluating factors such as the availability of financial resources, technological requirements, human resources, potential bottlenecks or constraints, and the impact on overall operational efficiency (M. T. Alshurideh et al., 2023d).

The expansion can take different forms, depending on the specific needs of the organization. It may involve adding physical infrastructure, such as building new facilities, expanding existing ones, or acquiring new equipment and machinery (Aljumah et al., 2021a; Gaytan et al., 2023). Alternatively, it may involve investing in technological advancements, process improvements, or adopting automation solutions to optimize existing capacity. Capacity expansion decisions can also involve outsourcing certain functions or partnering with external suppliers to leverage their resources and capabilities.

2.2. Outsourcing Strategy

Outsourcing strategy refers to the deliberate and strategic decision made by an organization to delegate specific business functions, tasks, or processes to external vendors, suppliers, or service providers. It involves transferring the responsibility of performing these activities to

external entities with specialized expertise, resources, or cost advantages (AlDhaheer et al., 2023).

An outsourcing strategy is driven by the objective of leveraging external capabilities, reducing costs, improving efficiency, and focusing on core competencies (Al-Awamleh et al., 2022; M. T. Alshurideh et al., 2023c). It allows organizations to tap into the expertise and economies of scale offered by external partners, enabling them to streamline operations, enhance quality, and gain a competitive advantage (Gulseven and Ahmed, 2022).

When implementing an outsourcing strategy, organizations typically identify specific functions or processes that can be effectively performed by external entities. These functions may include information technology services, customer support, manufacturing, logistics, human resources, or financial management, among others.

The outsourcing strategy involves a series of steps, including:

Identification of Outsourcing Opportunities: Organizations assess their internal processes and identify functions that can be potentially outsourced to external vendors.

Vendor Selection: Organizations evaluate potential vendors based on their expertise, track record, cost-effectiveness, and ability to meet the organization's requirements (Kurdi et al., 2022b).

Contract Negotiation: Organizations negotiate the terms and conditions of the outsourcing agreement, including service level agreements, pricing, performance metrics, intellectual property rights, and data security (Abudaqa et al., 2022).

Transition and Implementation: Organizations plan and execute the transition of the identified functions or processes to the chosen vendor. This may involve knowledge transfer, training, and establishing communication channels.

Relationship Management: Organizations actively manage the relationship with the outsourcing vendor, ensuring that the agreed-upon services are delivered as per expectations. This includes ongoing performance monitoring, issue resolution, and periodic reviews (Mubeen et al., 2022).

An effective outsourcing strategy can yield several benefits for organizations, including cost savings, access to specialized expertise, scalability, risk mitigation, and increased focus on core business

activities (Al-Marroof et al., 2022b; Amiri et al., 2020). However, it also entails potential risks, such as loss of control, quality concerns, communication challenges, and dependency on external parties.

3. LITERATURE REVIEW

3.1. *Relationship between Operation Management Practices and Capacity Expansion Decision*

Operations management practices encompass a wide range of strategies, principles, and activities aimed at optimizing processes, improving productivity, and ensuring the smooth flow of goods and services within an organization (Aziz et al., 2023). These practices directly impact an organization's ability to effectively manage its resources, meet customer demands, and achieve operational excellence (M. T. Alshurideh et al., 2023b). When it comes to the capacity expansion decision, operations management practices play a crucial role in several ways as presented by (Farrukh et al., 2023; Yasir et al., 2022), Effective operations management practices enable organizations to accurately assess their current capacity utilization and identify potential bottlenecks or inefficiencies (Al-Marroof et al., 2022a). By analyzing key performance indicators such as production rates, cycle times, and resource utilization, operations managers can determine whether existing capacity can meet projected demands or if expansion is necessary (Sakkthivel et al., 2022). Operations management practices provide the tools and techniques to monitor and evaluate the utilization of resources, helping organizations make informed decisions about capacity expansion (Aljumah et al., 2021b). In Addition, operations management practices focus on optimizing processes, eliminating waste, and improving overall efficiency (H. M. Alzoubi et al., 2022b). By implementing lean manufacturing principles, for example, organizations can maximize their current capacity without immediate expansion. These practices help identify process improvements and productivity enhancements that can optimize existing capacity (Ahmed et al., 2022). By streamlining operations, reducing cycle times, and improving resource utilization, organizations can effectively utilize their current capacity and delay the need for expansion (I. A. Akour et al., 2022).

Furthermore, operations management practices assist in forecasting future demand and planning

for capacity requirements. By analyzing historical data, demand patterns, and market forecasts, operations managers can estimate the expected increase in demand and determine the additional capacity required to meet it. These practices provide the analytical tools and methodologies to project future demand, enabling organizations to make informed decisions about capacity expansion (Nuseir et al., 2021). By aligning their capacity with anticipated demand, organizations can avoid underutilization or overutilization of resources (R. S. Al-Marroof et al., 2021b).

Operations management practices facilitate the evaluation of the financial implications of capacity expansion. By considering factors such as capital investments, operating costs, and return on investment, operations managers can assess the financial feasibility of expanding capacity (Ahmed and Nabeel Al Amiri, 2022). These practices help organizations calculate the potential costs and benefits associated with capacity expansion, allowing them to make informed decisions based on financial considerations (T M Ghazal et al., 2023a; M T Nuseir et al., 2022a).

Overall, operations management practices provide the foundation for effective resource utilization, process optimization, and strategic decision-making (M. Alshurideh et al., 2022; Nadzri et al., 2023). They enable organizations to assess current capacity, optimize existing processes, forecast future demand, and evaluate the financial feasibility of capacity expansion (Muhammad Turki Alshurideh et al., 2022c). By leveraging these practices, organizations can make informed decisions regarding capacity expansion, ensuring that they meet customer demands, stay competitive, and achieve long-term growth

3.2. *Relationship between Operations Management and Outsourcing Strategy*

The relationship between operations management and outsourcing strategy is closely intertwined and interdependent (Louzi et al., 2022a). Operations management refers to the set of strategies, principles, and activities aimed at optimizing processes, improving productivity, and ensuring the smooth flow of goods and services within an organization (M T Nuseir et al., 2022b). On the other hand, outsourcing strategy involves the deliberate decision of an organization to delegate certain business functions or processes to external

vendors or service providers (Al-Dmour et al., 2023).

As highlighted by (Lee et al., 2023), operations management and outsourcing strategy should be aligned with the overall strategic objectives of the organization. The decision to outsource specific functions should be based on an understanding of how it fits into the broader operational goals and objectives (El Khatib, 2015). In observation of (M T Alshurideh et al., 2022), operations management practices help identify which functions are suitable for outsourcing and which ones are critical to keep in-house (Abudaqa et al., 2021). This strategic alignment ensures that outsourcing decisions contribute to improving operational efficiency and effectiveness (M. Alshurideh et al., 2023).

While a study by, investigated outsourcing strategy allows organizations to focus on their core competencies and strategic activities by offloading non-core functions to external partners (Nuseir and Aljumah, 2022). Operations management practices help identify core competencies and determine which activities should be retained in-house for better control and alignment with the organization's strengths (El Khatib et al., 2019). By outsourcing non-core functions, organizations can free up resources, streamline operations, and allocate more attention to their core areas of expertise. It enables organizations to tap into the specialized expertise and resources offered by external vendors (Muhammad Turki Alshurideh et al., 2022a; H. M. Alzoubi et al., 2022f). Operations management practices help identify areas where external partners can provide better capabilities or resources, such as advanced technology, specialized skills, or industry knowledge (H. M. Alzoubi et al., 2022a; Blooshi et al., 2023). By leveraging these capabilities through outsourcing, organizations can improve operational efficiency, enhance product/service quality, and gain a competitive advantage.

Flexibility and Scalability is also defined by (Khatib et al., 2016), that explains operations management practices often involve considering the capacity requirements and flexibility needed to meet changing market demands. Outsourcing strategy can provide organizations with the flexibility to scale their operations up or down quickly (Nuseir et al., 2020). By outsourcing certain functions, organizations can access additional capacity and resources as needed, without incurring significant

fixed costs or long-term commitments (A. Al-Marroof et al., 2021; Taher M. Ghazal et al., 2023). This flexibility allows organizations to respond effectively to market fluctuations, seasonal demands, or business expansion opportunities (H. M. Alzoubi et al., 2022e; El Khatib and Ahmed, 2019). Whereas, outsourcing strategy can help organizations mitigate risks associated with certain business functions. Operations management practices can identify areas of potential risk, such as quality control, supply chain disruptions, or regulatory compliance, and determine whether outsourcing can reduce those risks. By partnering with experienced and reliable vendors, organizations can transfer certain risks to external parties who have specialized expertise and established risk management processes.

According to (Alzoubi, H MALhamad et al., 2021; Arshad et al., 2023), effective operations management practices are necessary for monitoring and managing the performance of outsourcing partners. This includes establishing clear performance metrics, setting service level agreements, and maintaining effective communication channels (R. S. Al-Marroof et al., 2021a; Kassem and Martinez, 2022). Operations management practices help ensure that outsourcing partners meet the expected standards of quality, timeliness, and cost-effectiveness. Regular collaboration and feedback between the organization and outsourcing partners are crucial for maintaining alignment and continuous improvement (Al-Kassem et al., 2012).

3.3. Relationship between Outsourcing Strategy and Capacity Expansion Decision

Outsourcing and capacity expansion are two strategies that organizations often consider to optimize their operations and meet customer demands. Let's explore their relationship and how they influence each other:

One of the primary drivers for outsourcing is cost reduction (El Khatib et al., 2020b). By outsourcing certain activities or functions, organizations can benefit from lower labor costs, economies of scale, and reduced capital investment (Ahmad Ibrahim Aljumah et al., 2022b; Alzoubi et al., 2020). When considering capacity expansion, organizations assess the costs associated with expanding their internal operations versus outsourcing to external

vendors. Depending on the cost dynamics, outsourcing may be a more cost-effective option, especially if the required capacity expansion is temporary or uncertain (Al-Kassem et al., 2013).

It has argued by (Akour et al., 2021), outsourcing provides organizations with flexibility and scalability advantages. External vendors can quickly ramp up or down their operations based on demand fluctuations, enabling the organization to respond more efficiently to market changes (M. El Khatib et al., 2021). This scalability can be particularly beneficial in industries with seasonal demand patterns or unpredictable market conditions (Nuseir, 2020). Capacity expansion decisions need to factor in the organization's ability to scale internally and the associated time and resource constraints. If scalability is a priority, outsourcing can be a viable option to quickly meet increased demand without investing in long-term internal capacity (Alzoubi and Ahmed, 2019).

Outsourcing allows organizations to focus on their core competencies while leveraging external expertise for non-core activities (Tariq et al., 2022b). By outsourcing certain functions, organizations can allocate more resources and attention to areas where they have a competitive advantage or specialized knowledge (Louzi et al., 2022b; Nuseir and Elrefae, 2022). When making capacity expansion decisions, organizations need to evaluate whether the expansion aligns with their core competencies or if outsourcing would be a better fit. If the expansion requires expertise outside the organization's core capabilities, outsourcing may be a strategic choice to access specialized knowledge or technology (Al-Kassem et al., 2022).

In addition, it can help organizations mitigate risks associated with capacity constraints or market uncertainties (Almasaeid et al., 2022). By relying on external vendors, organizations can transfer some of the operational risks, such as labor shortages, supply chain disruptions, or regulatory compliance, to the outsourcing partners (Tariq et al., 2022a). Capacity expansion decisions should consider the associated risks and evaluate whether outsourcing provides a more risk-averse approach (El Khatib et al., 2020a; Mat Som and Kassem, 2013). For example, if the organization anticipates a temporary surge in demand or uncertain market conditions, outsourcing can offer a more flexible and less risky solution than investing in permanent

capacity expansion (Al-Kassem et al., 2022).

The relationship between outsourcing strategy and capacity expansion decision ultimately depends on the organization's overall strategic objectives. Both outsourcing and capacity expansion should align with the organization's long-term goals and competitive positioning. Organizations need to assess whether outsourcing or internal capacity expansion supports their strategic direction, customer value proposition, and overall business model. The decision may vary based on industry dynamics, market trends, and the organization's unique circumstances (Kurdi et al., 2022a).

It's important to note that the relationship between outsourcing strategy and capacity expansion decision is not one-size-fits-all. Each organization must evaluate its specific requirements, capabilities, and market conditions to determine the optimal balance between outsourcing and internal capacity expansion (H. M. Alzoubi et al., 2022d; Varma et al., 2023). The decision should consider factors such as cost, flexibility, core competencies, risk management, and strategic decision (H. Alzoubi et al., 2022).

3.4. Relationship between Operations Management Practices and Capacity Expansion Decision through Outsourcing Strategy

The relationship between operations management practices and capacity expansion decisions can be influenced by the mediating role of the outsourcing strategy. It has argued by (Alshurideh et al., 2020), operations management practices directly impact the need for capacity expansion, while the outsourcing strategy acts as a mediating factor that influences the final decision.

(E. Khatib et al., 2021) highlighted the operations management practices, such as capacity assessment, process optimization, risk analysis, supply chain optimization, performance metrics, and continuous improvement, directly influence the decision to expand capacity (T M Ghazal et al., 2023c). These practices help organizations identify the limitations of their existing operations and determine whether capacity expansion is necessary to meet growing customer demands (M. Alzoubi et al., 2021; Nuseir, 2021). By implementing efficient processes and analyzing performance metrics, organizations can assess the need for expansion and the associated

requirements (H. M. Alzoubi et al., 2022c). The outsourcing strategy acts as a mediating factor between operations management practices and capacity expansion decisions (El Khatib and Ahmed, 2018). Once the need for capacity expansion is identified, organizations must evaluate the most effective approach to fulfill the increased demand (Al-Kassem, 2014; Aljumah et al., 2023). The outsourcing strategy comes into play as a potential solution. It mediates the decision-making process by considering whether outsourcing certain activities or functions would be more beneficial than internal expansion (M. El Khatib et al., 2022b; Ramzan et al., 2022). However, the outsourcing strategy mediates the capacity expansion decision by considering factors such as cost-effectiveness and flexibility (Ahmad Ibrahim Aljumah et al., 2022a). Organizations assess the financial implications of both internal expansion and outsourcing. Outsourcing can offer cost advantages through economies of scale, reduced capital investment, and lower labor costs (Al-Kassem, 2017). It provides flexibility by allowing organizations to quickly adjust capacity based on demand fluctuations (T M Ghazal et al., 2023b; M. El Khatib et al., 2022a). The outsourcing strategy helps weigh these cost and flexibility factors against the benefits and limitations of internal expansion (Khatib et al., 2022). (Hani Al-Kassem, 2021) Emphasized another mediating role of the outsourcing strategy lies in the consideration of core competencies and risk management. Operations management practices emphasize focusing on core competencies to drive competitive advantage (Muhammad Turki Alshurideh et al., 2022b; Mohammed T. Nuseir et al., 2022). When evaluating capacity expansion,

organizations must determine whether certain activities are within their core competencies or better suited for outsourcing (El Khatib et al., 2021). By outsourcing non-core activities, organizations can concentrate their resources on areas of expertise. The outsourcing strategy also aids in risk management by transferring operational risks to external vendors, mitigating potential disruptions associated with capacity expansion.

Moreover, the outsourcing strategy mediates the capacity expansion decision by aligning it with the organization's overall strategic goals (El Khatib and Ahmed, 2020). Operations management practices evaluate operational efficiency and performance metrics, but the outsourcing strategy helps ensure that the expansion decision aligns with the organization's long-term objectives (A I Aljumah et al., 2022b; Alzoubi et al., 2019). It considers whether outsourcing supports the organization's strategic direction, enhances its value proposition, and aligns with its business model.

3.5. Hypothesis Development

H1: There is positive relationship between Operation Management Practices and Capacity Expansion Decision

H2: There is positive relationship between Operations Management and Outsourcing Strategy

H3: There is positive relationship between Outsourcing Strategy and Capacity Expansion Decision

H4: There is positive relationship between Operations Management Practices and Capacity Expansion Decision through Outsourcing Strategy.

3.6. Research Model

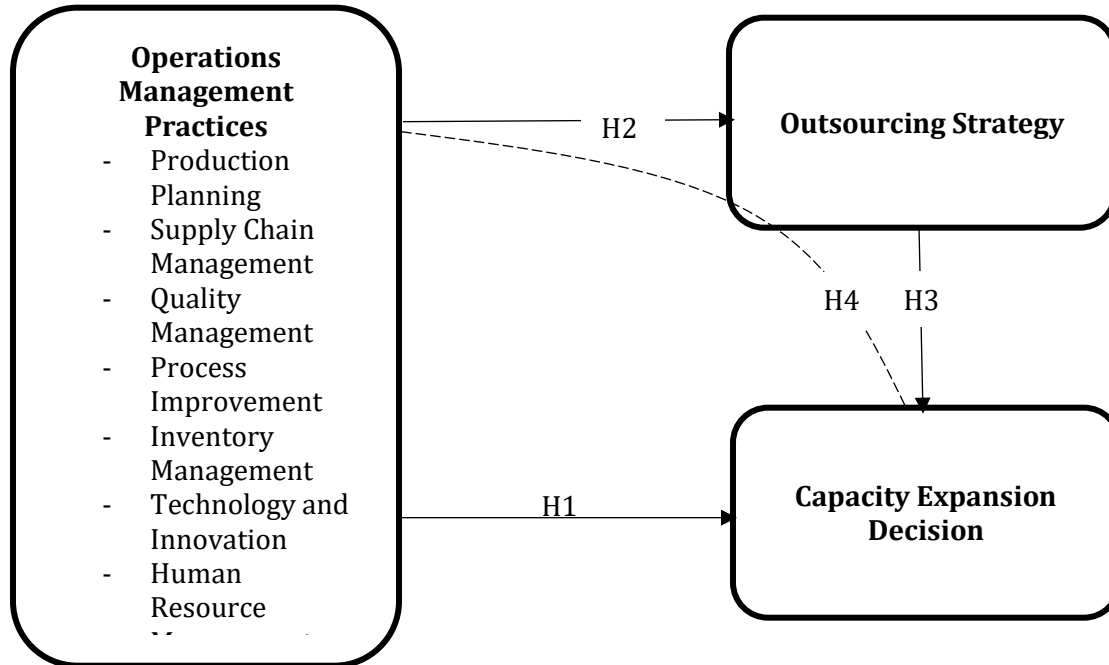


Figure 1 : Research Framework

4. METHODOLOGY

This study combines an empirical, exploratory, and descriptive research approach in an effort to better understand the relationships between operation management practices, outsourcing strategy, and capacity expansion decision. Through outsourcing strategy as a mediator, the study sought to empirically evaluate the direct and indirect implications of operation management practices and capacity expansion decision as viewed by managers on competitive priorities at pharmaceutical industry.

The 18 pharmaceutical companies involved in the UAE's medication production business make up the study's population. All pharmaceutical companies were taken into account as part of the study's full sample. All of the top managers in the examined organisations made up the unit of analysis, and 175 valid questionnaires were used to analyse the data. In order to comprehend the direct and indirect impact of operations management practices on the capacity expansion decision at pharmaceutical

businesses in UAE, data was analysed using the statistical SmartPLS software programme. A five-point Likert-type scale with anchors of "strongly disagree" and "strongly agree" was used in the questionnaire, which was used to measure the study variables.

5. EMPIRICAL ANALYSIS

The findings of the reliability and validity analysis are presented in this section. By calculating Cronbach's alpha (in Table 1), the dependability level of each scale was first assessed (Cronbach, 1951). Each scale displayed a level of reliability that was satisfactory. Then, we assessed the convergent validity and discriminant validity of two different types of validity. The factor loadings of the items should be significant and greater than 0.7; the composite reliability (CR) and Cronbach's alpha should both be greater than 0.7; and the average variance extracted (AVE) of the constructs should be greater than 0.5.

Table 1: Reliability and Validity Test (VIF, CA, CR, AVE)

Variables	Construct	VIF	Cronbach's Alpha	CR	AVE
Operations Management Practices	OMP1	1.784	0.880	0.860	0.519
	OMP2	1.375			
	OMP3	2.045			
	OMP4	2.035			
	OMP5	1.869			
	OMP66	1.588			
	OMP7	1.507			
Capacity Expansion Decision	CED1	1.492	0.890	0.873	0.504
	CED2	2.002			
	CED3	2.013			
	CED4	1.878			
	CED5	1.840			
Outsourcing Strategy	OS1	2.025	0.818	0.829	0.609
	OS2	1.051			
	OS3	1.069			
	OS4	1.232			
	OS5	1.576			
	OS6	1.613			
	OS7	1.331			
	OS8	1.353			

OMP=Operations Management Practices, CED=Capacity Expansion Decision, OS=Outsourcing Strategy, CA=Cronbach's Alpha, CR=Composite Reliability, AVE= Average Variance Extracted, VI= Variance Inflation Factor

Table 2: Hypothesis Assessment

Hypothesis	Paths	β	t-value	R ²	p-value	Decision
H1	OMP→CED	0.507	6.50	0.656	0.000	Supported
H2	OMP→OS	0.605	7.49	0.498	0.001	Supported
H3	OS→CED	0.623	5.03		0.000	Supported
H4	OMP→OS→CED	0.554	11.8		0.000	Partial Mediation

SmartPLS was used to generate the model's path relationships, and the Bootstrapping method was applied to determine the parameters' significance and obtain t-statistics. Table 2 displays the key effects' outcomes. CED and OS were calculated to have respective R² values of 0.65 and 0.49. The R-squared values of 0.19, 0.33, and 0.67 can be categorized as weak, moderate, and substantial, respectively. As a result, the R² values in this study can be categorized as large and moderate. In addition, the results showed a positive relationship between OMP and CED (B=.507, t-value=5.60,

p=0.000) indicating H1 is accepted. The relationship between OMP and OS depicted as positive significant (B=.605, t-value=7.49, p=0.000) H2 is also accepted. OS and CED has revealed a positive significant relationship showing (B=.632, t-value=5.03, p=0.001) H3 is supported in this study. The indirect relationship of OMP with CED through mediating effect of OS is revealed as positive significant that shows partial mediation of OS between the relationship of OMP and CED (B=.55, t-value=11.8, p=0.000) indicating partial mediation in the H4.

6. DISCUSSION

The hypothesized model of the study has revealed positive significant results of the proposed hypothesis. The results declared the impact of operations management practices on capacity expansion decisions, with the mediating role of the outsourcing strategy, presents both opportunities and challenges for organizations. While operations management practices provide a framework for assessing capacity needs and optimizing processes, the outsourcing strategy acts as a crucial mediating factor that influences the final decision.

It has displayed in statistical findings, operations management practices focus on maximizing efficiency and productivity within the organization. Capacity expansion decisions are typically driven by increased demand and the need to meet customer requirements. While operations management practices can identify the need for expansion, they may not provide a comprehensive analysis of whether outsourcing is the most appropriate solution. The outsourcing strategy may introduce complexities such as communication gaps, quality control issues, and dependence on external vendors, which could impact operational efficiency.

The results demonstrate cost considerations play a significant role in capacity expansion decisions. Operations management practices can help assess the financial implications of expanding internally versus outsourcing. However, organizations must critically evaluate the true costs and long-term implications of outsourcing. While outsourcing may appear cost-effective initially, hidden costs such as contract management, coordination efforts, and potential loss of control should be thoroughly evaluated. Organizations should carefully weigh the potential cost savings against the risks and additional management overhead associated with outsourcing.

Moreover, the outsourcing strategy introduces the concept of core competency focus. While operations management practices emphasize focusing on core competencies, the decision to outsource certain activities may compromise organizational knowledge and control. Organizations must critically evaluate whether outsourcing non-core activities aligns with their long-term strategic goals. Outsourcing may provide access to specialized expertise and

technologies, but it could also result in a loss of in-house capabilities and hinder future innovation and competitiveness.

Furthermore, risk management is a critical aspect of both operations management and outsourcing. Operations management practices involve identifying and managing operational risks, while outsourcing can help mitigate risks by transferring them to external vendors. However, outsourcing itself introduces new risks, such as dependency on external partners, potential disruptions, and loss of intellectual property. Organizations need to critically assess the risks associated with outsourcing and develop robust risk mitigation strategies to ensure smooth operations and protect their interests.

The findings suggest strategic alignment is vital when considering the impact of operations management practices on capacity expansion decisions. Organizations must critically evaluate how the outsourcing strategy aligns with their overall strategic objectives and value proposition. Outsourcing should not be seen as a standalone decision but rather as a means to support the organization's long-term growth and competitive advantage. Critical evaluation of whether outsourcing complements the organization's core competencies and enhances its strategic positioning is essential.

Consequently, while operations management practices provide valuable insights into capacity expansion decisions, the mediating role of the outsourcing strategy introduces complexities that require critical evaluation. Organizations must carefully consider factors such as operational efficiency, cost-effectiveness, core competency focus, risk management, and strategic alignment when deciding whether to expand capacity through outsourcing. By critically analyzing these factors, organizations can make informed decisions that optimize their operations and support long-term growth objectives.

4. CONCLUSION

Findings of the study demonstrate, operations management practices directly influence the need for capacity expansion, and the outsourcing strategy mediates the final decision-making process. The outsourcing strategy considers factors such as cost-effectiveness, flexibility, core competency focus, risk management, and strategic

alignment. By incorporating the outsourcing strategy as a mediating factor, organizations can make informed decisions about capacity expansion, considering both internal and external options, and optimizing their operations accordingly.

- Limitations

There are a number of restrictions that researchers should take into account when exploring how operations management practises affect decisions about capacity expansion with the mediation function of outsourcing strategy. These restrictions include, among others:

First, the availability and quality of data on operations management practices, outsourcing strategy, and capacity expansion decisions may pose limitations. Access to relevant and reliable data sources, such as internal company records or industry databases, may be restricted or incomplete. This could potentially impact the accuracy and generalizability of the findings.

Secondly, investigating the mediating role of outsourcing strategy adds complexity to the research design. Identifying and measuring the specific mechanisms through which outsourcing strategy influences the relationship between operations management practices and capacity expansion decisions can be challenging. The study may need to rely on assumptions or simplifications that may not fully capture the intricacies of the mediation process.

Lastly, the study may focus on a specific set of operations management practices, outsourcing strategies, or capacity expansion decisions. However, there may be other relevant factors that influence these relationships but are not included in the research design. These omitted variables could potentially confound the results and limit the comprehensiveness of the study.

Addressing these limitations through rigorous research design, careful data collection, and robust statistical analysis can enhance the validity and reliability of the findings. Researchers should be transparent about the limitations and discuss their implications when interpreting and generalizing the results.

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