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Achieving International Excellence: Unleashing The Potential Of Lean Management In Smes Through Dynamic Capabilities

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Abstract

This article examines the impact of lean management on the performance of exporting SMEs. SMEs play a crucial role in the global economy by fostering economic growth, job creation, and international trade. However, they face challenges such as global competition, financial constraints, and limited resources. Lean management, based on waste reduction and continuous improvement, is a recognized management approach that enhances productivity and quality in businesses. By exploring the experiences of ten SMEs operating in various international markets, this study investigates how the adoption of lean practices has enabled these companies to improve their competitiveness and export success. Inspired by the Toyota Production System, lean management emphasizes the participation of all members within the organization in pursuit of operational excellence. The findings highlight key factors of lean management that strengthen the dynamic capabilities of exporting SMEs and influence their overall performance in international markets. By providing valuable insights, this article aims to assist SME leaders in making informed decisions and developing effective strategies to enhance their export performance.

Index Terms— Lean management, Export SMEs, Export performance, SMEs, Dynamic capabilities.

Introduction

Highlight Small and medium-sized enterprises (SMEs) play an essential role in the global economy by fostering economic growth, job creation, and international trade (Suh and Kim, 2014; Toulova, Votoupalova, and Kubickova, 2015). Specifically, exporting SMEs play a fundamental role in promoting international trade and national competitiveness. They represent a significant portion of the economic fabric at both national and international levels. However, despite their true potential and significant contribution, exporting SMEs often face challenges such as global competition, financial constraints, and limited resources. In this context, it is crucial for these businesses to develop sustainable competitive advantages that enable them to succeed in global markets. This study focuses on lean management, a widely recognized management approach known for its effectiveness in enhancing productivity, quality, and business performance (Singh, J., Singh, H., & Singh, G. (2018) (Jeri

and al; 2022). By examining the experiences of ten SMEs from different sectors and operating in various international markets, we explore how the adoption of lean practices has allowed these companies to improve their competitiveness and export success. Inspired by the principles of the Toyota Production System, lean management emphasizes waste reduction, continuous improvement, and the participation of all members of the organization in the pursuit of operational excellence. The main research question is: How does lean management contribute to improving the performance of exporting SMEs? In other words, what is the impact of lean management on the dynamic capabilities of exporting SMEs and how does it translate into enhanced performance in international markets? The main objective of this study is to explore the relationship between lean management and the performance of exporting SMEs, with a focus on dynamic capabilities as an explanatory framework. We aim to identify key factors of lean management that strengthen the dynamic capabilities of exporting SMEs and understand how these dynamic capabilities influence the overall performance of these businesses in global markets. The first part of this article provides a theoretical overview of lean management, emphasizing its key principles and tools, as well as the literature review on SME export performance. We then discuss the results of our study, examining the main necessities of using lean tools in SMEs and how employees are involved in the adoption and implementation of these practices. Finally, we analyze the impact of lean management on SME export performance and the indicators used to measure this performance. This research aims to provide valuable insights for SME leaders considering adopting lean management to enhance their positioning in international markets. By understanding the potential benefits of this approach and the challenges they may face, leaders will be better prepared to make informed decisions and develop effective strategies to improve their export performance. In the rest of this article, we will explore the results of our study in detail, highlighting the specific experiences of the interviewed SMEs and identifying best practices that have led to their export success through lean management.

Theorical Background: Export SME's Performance and Lean Management

2.1. Export SMEs

Trading SMEs play a crucial role in the global economy by contributing to economic growth, job creation, and the competitiveness of nations. A trading SME can be defined as a small or medium-sized enterprise that engages in business activities abroad by selling its products or services in international markets. These enterprises play a key role in enhancing national economies, expanding markets, and strengthening the competitiveness of countries (OECD, 2019). Trading SMEs face specific challenges that require adaptive management. Firstly, they must contend with constraints related to their size and limited resources. These constraints may include limited financial capabilities, restricted access to international business networks, and limited expertise in exportation. Additionally, these companies must navigate a complex business environment, including tariff barriers, customs regulations, cultural differences, and logistical challenges.

To overcome these challenges, trading SMEs need to develop specific strategies and skills[1]. In this context, lean management can play a vital role by providing trading SMEs with the necessary tools and techniques to improve their performance and competitiveness in international markets. By adopting a lean approach, these companies can reduce waste, enhance operational efficiency, improve their production and operations processes, and increase customer satisfaction (Huang,2022).

2.2 Export performance

For more than fifty years, the internationalization of companies has attracted the interest of researchers and analysts. The initial studies mainly focused on the behavior of exporting companies, without highlighting their performance. Over time, research has evolved to explore topics such as the motivations that influence export decisions (Bilkey & Tesar, 1979), the form of internationalization adopted (Anderson & Gatignon, 1986), and the different stages of the internationalization process.

It was during the 1980s that export performance became a specialized subject of study, with a rich and abundant literature. The concept of "export performance of companies" originates from studies in marketing and strategic management (Maurel, 2009). It is generally studied from

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two aspects: its determination and evaluation, both of which are linked to the definition of this concept and its theoretical foundations.

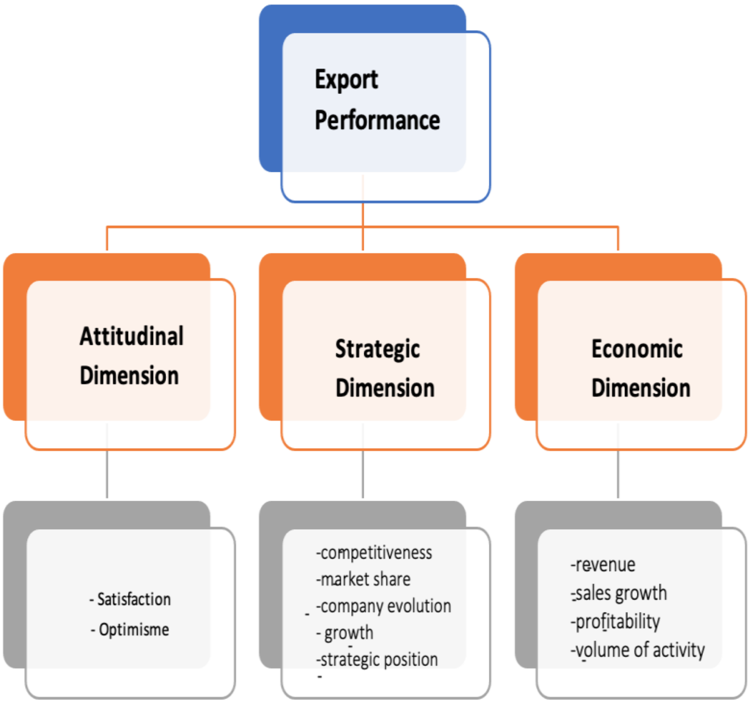
The following points first present the definition of the concept through a literature review, then provide a critical examination of the state of the art on the subject, and finally discuss the main conceptual models proposed by research in this field.

2.2.1. How to define the export performance

There is abundant academic literature supporting the idea of performance export, as evidenced by numerous studies conducted on this subject (e.g., Sousa et al., 2008; Ruppenthal & Beaush, 2009). However, while the vast majority of these research efforts have focused on the organizational, managerial, environmental, and strategic drivers of export success (according to another literature review conducted by Diamantopoulos & Kakkos, 2007), it is evident that the literature has not been able to provide a consensus definition of this term. This situation is surprising given the amount of research that has been published on the topic (as highlighted by Sousa et al., 2008, and Ruppenthal & Beauch, 2009). Thus, faced with this gap in the literature, we propose a definition of the idea based on the universal meaning of the term "performance" as described in Le Nouveau Petit Robert 2014, which defines it as a "quantified result of competitive rivalry."

However, researchers have evaluated this result in various ways, creating a significant challenge in reconciling the many definitions proposed by authors, whose quality and limitations are highly controversial (Katsikeas et al., 2000; Sousa, 2004; Zou et al., 1998). Despite attempts by several authors to grasp this notion, there is no agreement on a single definition. Diamantopoulos (1998) considers export performance as indicating the outcome of a firm's action in response to foreign environmental contingencies, while Cavusgil and Zou (1994: 3) define it as "a strategic response of the firm to the combination of internal and external pressures." These two authors define it as "the extent to which a firm's economic and strategic objectives concerning the export of a product or service to a foreign market are achieved through the planning and implementation of marketing strategy." According to Shoham (1998: 62), export performance is a "result of a firm's sales outside its home territory." Diamantopoulos (1998: 3) agrees with this view, stating that export performance is a "multifaceted" notion that cannot be represented by a single measure. According to Greve (1998), Katsikeas et al. (2000), and Sousa (2004), the conceptualization, operationalization, and specification of export performance measures should be adjusted to the specific characteristics of each firm. Lages et al. (2006) emphasize that managers' perception of export performance and its determinants may sometimes differ from that of researchers. In her doctoral thesis, Allouani (2013) attempted to capture managers' perceptions of export performance in the form of a mental map, which is presented as follows : revenue, sales growth, profitability, volume of activity.

Figure 1



Realized by authors

Figure 1 : Mental representation of export performance dimensions among executives (Kombate, 2018)

The mental map shows that the entrepreneurs interviewed by Allouani have perspectives similar to those of Shoham (op. cit.). The latter defined three aspects of performance (economic, strategic, and behavioral), each having its own set of indicators and allowing for the calculation of a composite result. In any case, export performance remains a multidimensional concept that assesses the ability of a company or country to establish a presence in foreign markets and sell local products (goods and services) over time, whether that ability is weak or strong.

2.2.2. Scales export performance

Due to the heterogeneity and multidimensionality of the concept, researchers such as Diamantopoulos (1998) and Shoham (1998) have emphasized the importance of using multiple indicators to capture the various aspects of export performance. In the table below, we identify four frequently mentioned measurement scales in the literature (two quantitative/objective and two qualitative/subjective).

Table 1:

Author's scale	measurement
Cavusgil et Zou (1994) Scale qualitative/subjective	-Achievement of strategic objectives of the company in export -Growth rate of the company over 5 years -Measurement of the overall profitability of the company over a 5-year period -Perceived satisfaction of executives in export -The perception of export success
Shoham (1998) quantitative/objective Scale	-Improvement in profit -Satisfaction of executives regarding export sales -Improvement in the percentage of export sales to total company sales
Zou, Taylor and ostand (1998) EXPERF Scale Composite Scale	-Executive satisfaction -Perception of export performance -Financial performance in export -Strategic performance in export
Lages and Lages (2004) STEP Scale qualitative/subjective Scale	-Executive perception of improvement in export performance -Executive satisfaction with short-term export performance -Improvement in the intensity of short-term export performance Realized by authors

Table. 1: The measurement scales of export performance

The scale proposed by Cavusgil and Zou (1994) is perceived as qualitative and subjective. This approach diminishes the importance of objective and quantitative criteria in evaluating export performance and instead emphasizes criteria such as managers' satisfaction with their international accomplishments, their perception of the success of their activities, and the achievement of their goals. This scale is particularly relevant as it allows for comparisons across companies from different industries, varying sizes (SMEs or large enterprises), and distinct levels of internationalization (early internationalization, staged internationalization, etc.). In essence, this subjective measure of export success helps determine the extent to which export performance aligns with the company's initial objectives.

On the other hand, the Shoham scale (1998) is a measurement tool for evaluating export performance of companies, developed by researcher Arie Shoham. This scale emphasizes both objective and subjective criteria to assess companies' performance in international markets. Unlike the Cavusgil and Zou scale (1994), which is primarily qualitative and subjective, the Shoham scale (1998) seeks to incorporate a more balanced approach by combining objective indicators such as market share, sales volume, and profitability with subjective indicators such as managers' satisfaction, perception of success, and goal attainment. The Shoham scale (1998) aims to provide a more comprehensive evaluation of export performance by considering both quantitative and qualitative aspects, enabling a deeper analysis of companies' success in international markets.

Next, there is the EXPERF scale (1998), which is a measurement scale of export performance developed by Shaoming Zou, Charles R. Taylor, and William E. Osland. Also known as the Export Performance Index (EPI), this scale was designed to assess companies' performance in international markets using a combination of objective and subjective indicators. The EXPERF scale (1998) encompasses multiple dimensions to measure export performance, including financial performance (such as sales and profitability), strategic performance (such as product and price adaptation), and process performance (such as customer satisfaction and distribution channel efficiency). This multidimensional approach allows companies to better understand and analyze their success in international markets. By integrating objective and subjective indicators, the EXPERF scale (1998) offers a balanced and comprehensive perspective of export performance.Lastly, the STEP scale (2004), developed by Lages and Lages, is qualitative and subjective in nature. It evaluates the perception of short-term improvement in export performance based on variables such as satisfaction with short-term performance improvement and progress made in export performance.

2.2.3 Determinants of export performance

A literature review on the determinants of performance reveals that the primary contributions on this subject have been made by Madsen (1978), Aaby & Slater (1989), Leonidou et al. (2002), Sousa et al. (2008), Ruppenthal & Bausch (2009) and finally Philippe Lamb and al (2021).

Table 2

Auteur	Madsen (1978)	Aaby & Slater (1989)	Leonidou & al. (2002)	Sousa & al. (2008),	Ruppenthal & Bausch (2009)	Philippe Lamb et al (2021)
Période étudiée	1967-1987	1978-1988	1964-1998	1998-2005	1999-2008	1993-2019
Nombre d'études examinées	17	55	36	52	91	231
Type d'étude	Narrative	Narrative	Méta-analysis	Méta-analysis	Narrative	longitudinal
Nature de la recherche	-Empirical findings -Conceptualization synthesis	-Proposed integred model -Classification of research according to the aforementioned model	-relationship between marketing strategy and export performance	-proposed integrated model of export performance	-integrated dynamic conceptual framework studying the relationship between export performance and independent variables	-empirical findings -qualitative study

Realized by authors

Table 2: determinants of export performance

Determinants of export performance identified by Madsen (1987).

In 1987, Madsen conducted a conceptual synthesis based on studies published between 1964 and 1985 and classified the identified determinants following the Strategy-Structure-Performance logic. This approach helped to better understand the factors that influence export performance by examining the links between the strategy adopted by the firm, the organizational structure implemented, and the performance achieved in international markets. By organizing the determinants according to this logic, Madsen contributed to highlighting the relationships between these different elements and providing a more coherent framework for studying firms' export performance.

Figure 2

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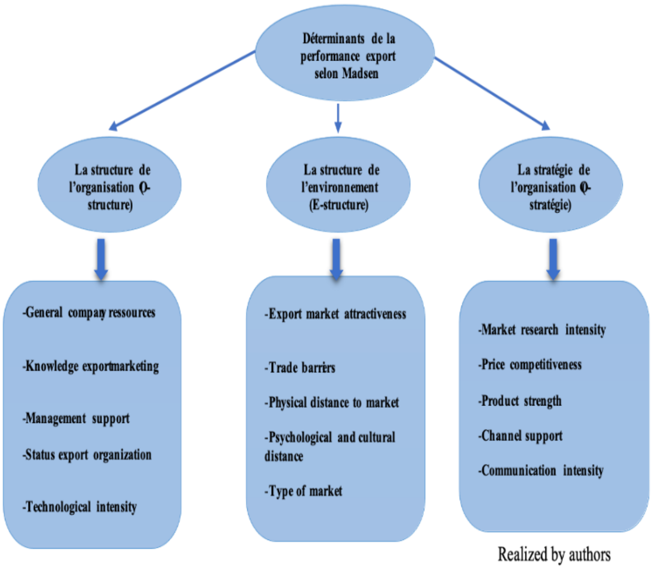

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Figure 3: Determinants of export performance identified by Madsen (1987)

Determinants of export performance identified by Zou & Stan (1998)

Zou and Stan (1998) conducted a review of fifty articles published between 1987 and 1997 to categorize the determinants of export performance based on two criteria. The first criterion is related to the environment, distinguishing between external determinants and internal determinants. The second criterion is related to controllability, distinguishing between variables that are controllable by the firm and those that are not.

According to Zou and Stan (1998), most studies show that the correlation tests between export performance and various variables, including industry characteristics, cannot be confirmed. However, the results of the published studies emphasize positive relationships, downplaying negative relationships such as overall export strategy, export planning, promotion intensity, commitment to export, international orientation, perceived export advantages, management's international experience, and the firm's international competence. The table presented in Zou and Stan's study clearly shows the dominance of uncontrollable determinants, while the cross-table of external determinants and their controllability yields a null result. The authors emphasize that the external environment clearly imposes itself on managers, and they have no choice but to adapt to the constraints it imposes. According to them, the results of their study are relevant as the firm and its managers have some control over export performance. These findings were corroborated by Leonidou, Katsikeas, and Piercy (1998) in their article on the characteristics of managers that can influence the export performance of their firms.

Table 3

	Internal	External
controllable	<u>Export Marketing Strategy</u> General Export Strategy (Export Plan, Export Organization) • Market Research Utilization • Product Quality and Adaptation • Competitiveness, Adaptation, and Price Determination • Intensity and Adaptation of Promotion (Type, Adaptation, and Relationship with Distribution Networks) <u>Attitudes and Perception of Management</u> • Commitment to Export • International Orientation • Perceived Export Advantages • Perceived Export Barriers • Proactive Export Motivation	
Uncontrollable	<u>Characteristics of Management</u> • International Management Experience • Level of Education and Experience of Management <u>Competences and Characteristics of the Firm</u> • Company Size • International Competence • Age of the Firm • Firm's Capacities and Competences	<u>Characteristics of the Industry</u> • Technological Intensity of the Industry • Level of Industry Stability <u>Characteristics of the Foreign Market</u> • Market Attractiveness • Market Competitiveness • Export Barriers

Tableau 3 : Déterminants of export performance according to *Zou & Stan (1998)*

Realized by authors

Determinants of export performance identified by Leonidou, Katsikeas & Piercy (1998)

In 1998, Leonidou, Katsikeas & Piercy conducted a literature review encompassing 40 empirical studies published between 1960 and 1995. This review focused on internal determinants of the firm, particularly management characteristics. The authors grouped the characteristics related to management into two dimensions based on their examination: objective/subjective and general/specific.

The results of their analysis demonstrated that the majority of the examined empirical studies yielded particularly positive results for the variables "manager's level of education" and "foreign language proficiency." The table presented in the article summarizes these determinants, emphasizing the role of management in firms' export performance.

These results highlight the importance of managers' expertise and language skills in enhancing their firm's export performance. Managers with a higher level of education and proficiency in foreign languages can better understand cultural differences and foreign business practices, which can aid in developing effective business strategies for foreign markets.

However, it is important to note that this literature review solely focuses on internal determinants of the firm and does not consider external factors such as the economic, political, and social conditions of foreign markets.

Table 4

	General	Spécific
Objective	Age Level of education Professional experience	Ethnic origin - Language proficiency - Experience - Foreign travel
Subjective	Risk tolerance -Innovation - Flexibility - Commitment - Dynamism	Risk Perception Cost Perception Complexity Perception Profit Perception

Table 4 : *The Determinants of Export Performance According to Leonidouet al. (1998)*

Realized by authors

1.3 Lean management

The concept of lean management, also known as just-in-time management or waste-free management, is based on several fundamental principles aimed at optimizing processes and improving overall performance of a company (Chandarak and Ankur, 2019; Rachh Pratikand al ,2021). Waste elimination, continuous improvement, and employee involvement are essential pillars of lean management.

Waste elimination is at the heart of lean management. According to Womack and Jones (2003), waste can be defined as any activity that does not create added value for the end customer. Commonly identified types of waste include excess inventory, unnecessary movement, delays, quality defects, overproduction, and more. By adopting a lean approach, companies seek to identify and eliminate these wastes to enhance efficiency and productivity of their operations (Liker, 2004).

Continuous improvement is another key principle of lean management. It involves a philosophy of gradual and constant improvement of processes, products, and services. A lean enterprise encourages the participation of all employees in the pursuit of innovative solutions and the implementation of positive changes. This approach fosters a culture of learning, innovation, and adaptability, enabling the company to remain competitive in the long run (Womack and Jones, 2003).

Employee involvement (M. Jobin,2015) is also a central element of lean management. Lean companies recognize that employees are a valuable resource and play a crucial role in the continuous improvement of processes (Mudhafar 2020). Employee involvement translates into their active participation in problem identification, solution finding, decision-making, and change implementation. This approach promotes a collaborative work environment, thereby fostering employee engagement, motivation, and satisfaction (Deming, 1986).

1.3.1 The positive impact of LM on export SMEs

Figure 3

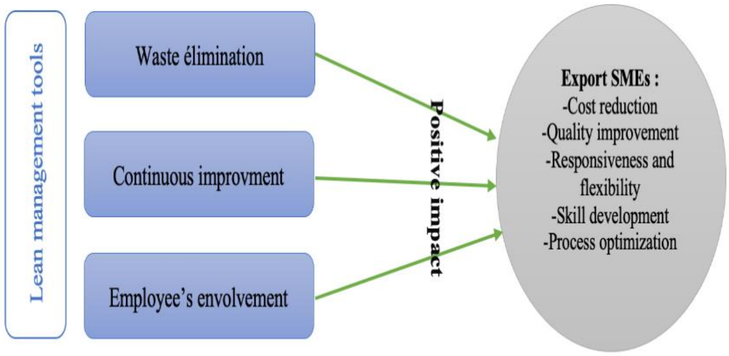


Figure 4: By authors from the literature review (Modranský and al, 2020; Sahoo, S ,2020 ; Azemi and al ,2020)

Realized by authors

The adoption of lean management by exporting SMEs can provide them with a multitude of advantages and benefits. This approach, focused on continuous improvement and waste elimination, can have a significant impact on the overall performance of these companies in international markets. Here are some potential benefits of lean management for exporting SMEs:

Cost reduction: Lean management allows exporting SMEs to identify and eliminate non-productive activities, waste, and inefficiencies in their operational processes. By reducing production, procurement, and logistics costs, these companies can improve their profitability and competitiveness in international markets (Shevtshenko and al ; 2020).

Quality improvement: Lean management emphasizes customer satisfaction and the pursuit of operational excellence. By applying techniques such as total quality control, root cause analysis, and employee engagement, exporting SMEs can enhance the quality of their products or services, strengthen their reputation, and foster customer loyalty (Shingo, 1989).

Responsiveness and flexibility: Lean management encourages exporting SMEs to adopt a more agile and flexible approach to operations management. By reducing cycle times,improving inventory management, and fostering internal collaboration, these companies can be more responsive to changing demands in the international market and better meet the specific needs of customers (D'Andrea, V and al; 2000).

Skill development: Employee involvement is a key aspect of lean management. By encouraging active employee participation in continuous improvement, exporting SMEs can promote skill development and enhance employee motivation. This can lead to improved productivity, greater creativity, and increased innovation within the company (Daily, B.F., & Bishop, J. (2003). Gorondutse, and al ; 2018).

Process optimization: Lean management provides exporting SMEs with tools and methods to analyze, design, and optimize their production, logistics, and supply chain management processes. By eliminating unnecessary steps, delays, and coordination issues, these companies can improve the efficiency and smoothness of their operations (Kajba, M., & Jereb, B. (2022); Valenzuela-Ramos and al ; 2023).

Dynamic capabilities as source of LM

Figure 4

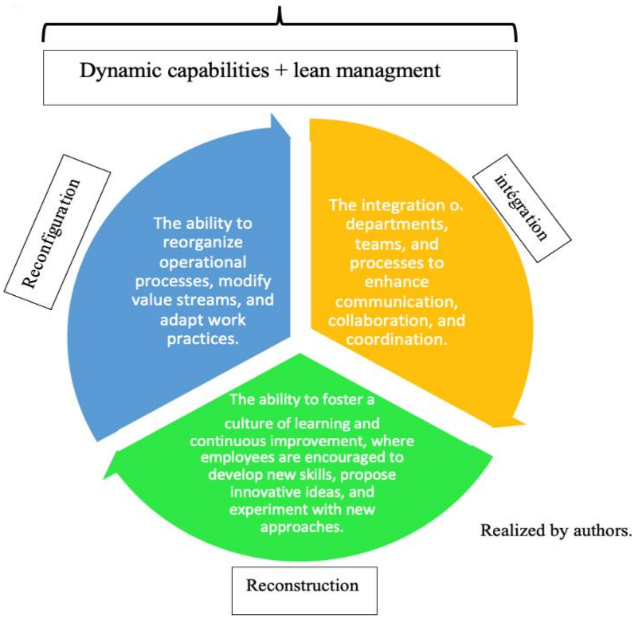


Figure 5: the alliance of lean management and dynamic capabilities

The integration of dynamic capabilities and lean management creates a powerful synergy for organizations. Dynamic capabilities, which involve integrating, building, and reconfiguring internal resources, provide a theoretical framework for understanding how lean management practices can impact the export performance of trading SMEs. Lean management, with its focus on efficiency and waste reduction, complements dynamic capabilities by providing practical tools for process optimization. When combined effectively, this integration leads to improved performance, competitiveness, and long-term success. In the context of trading SMEs, dynamic capabilities play a crucial role in navigating international markets and addressing market-specific challenges. By developing skills such as responsiveness and adaptability, trading SMEs can leverage lean management practices to enhance their export performance. Overall, the integration of dynamic capabilities and lean management offers organizations a powerful approach to achieve sustainable competitive advantage in dynamic business environments.

Méthodologie

This empirical study aims to examine the impact of Lean Management on the performance of exporting SMEs. It utilizes a qualitative approach based on an in-depth case study of multiple exporting SMEs that have adopted Lean Management practices. The main objective is to analyze the effects of Lean Management on various aspects of these SMEs' performance, such as profitability, export sales growth, international customer satisfaction, and competitiveness. To accomplish this, an interview was conducted with the INMAA Center, which was inaugurated in 2011 by His Majesty King Mohammed VI. The INMAA Center is the first model factory in Africa and the Middle East specifically designed for industrial enterprises seeking to implement an operational excellence program known as 'Lean Management.' Through this interview, the sample of SMEs for our study was determined. After that, we conducted an other interview with the selected Moroccan SMEs.

Figure 5

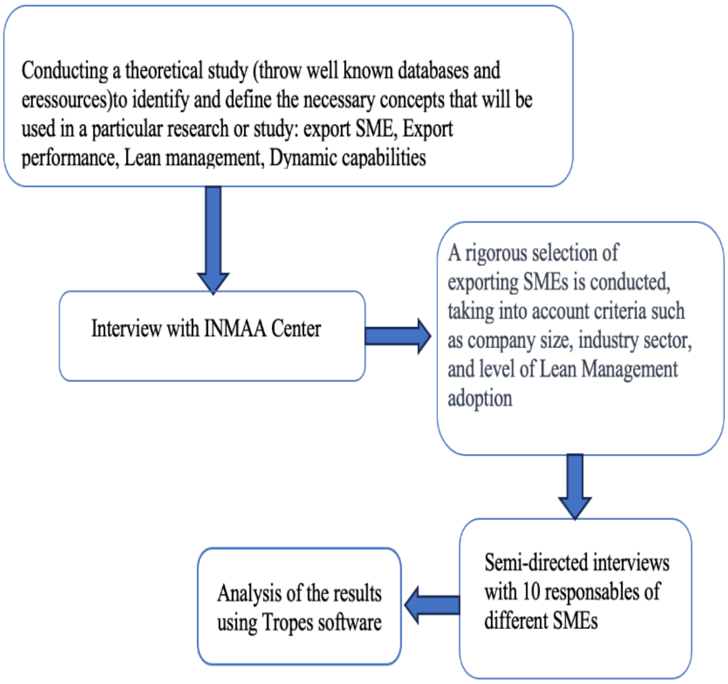


Figure 4: the workload methodology Realized by authors.

- Data Collection: Primary data is collected through semi-structured interviews with executives, operational managers, and key employees of the selected SMEs. The interviews are designed to gather detailed information about the implemented

Lean Management practices, achieved outcomes, encountered challenges, and key success factors.

- Data Analysis: The collected data is qualitatively analyzed using a content analysis approach. Relevant information is extracted from the interviews and grouped into thematic categories to identify specific impacts of Lean Management on the performance of exporting SMEs.

Results and discussion

Before presenting the results of the improvements made within the framework of Lean Management to enhance SME's performance, it is essential to understand the underlying methodological approach. The Plan-Do-Check-Act (PDCA), also known as the Deming cycle or the cycle of continuous improvement, is a widely used methodology within Lean Management. This cycle provides a robust structure to guide businesses in their pursuit of continuous improvement. Here is the PDCA explained:

Figure 6

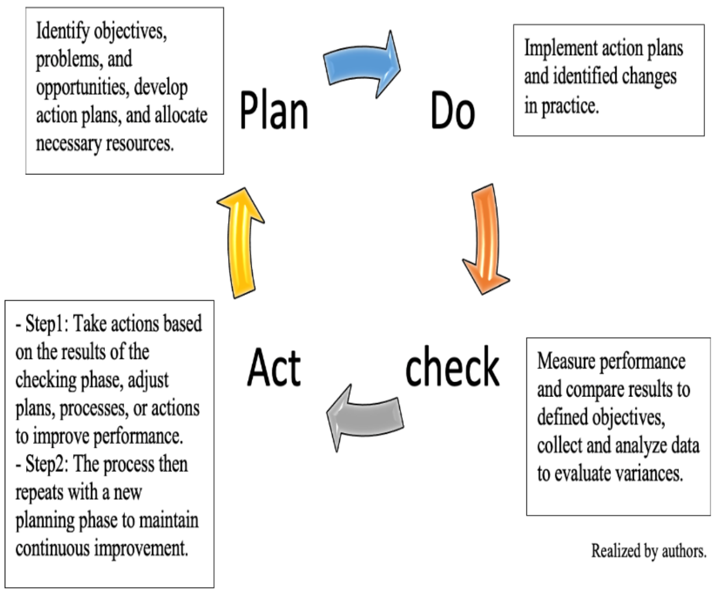


Figure 5: PDCA of implementing lean management tools

The PDCA is a cycle of continuous improvement that allows businesses to identify, implement, verify, and adjust improvements to enhance their operational performance.The PDCA is based on the idea that companies should follow an iterative process of planning, implementing, verifying, and adjusting to achieve sustainable results. It promotes a fact-based and data-driven approach, where decisions and actions are taken based on concrete evidence.

Applying the PDCA in the context of Lean Management enables companies to adopt a systematic approach to identify improvement opportunities, design action plans, implement changes, assess the achieved results, and adjust approaches if necessary. This ensures that the actions taken are aligned with the company's strategic objectives and are in line with the logic of continuous improvement.

Selected SMEs:

Table 5

	ACTIVITY	Age of manager	Exportation's experience	International markets	Main facing exportation problems
SME1	specialized in automotive parts production	55 years	More than 7 years	the North American and European markets	intense competition, meeting international quality standards, and managing delivery timelines.
SME2	specialized in textile manufacturing	49 years	10 years	European markets	increased international competition and fluctuations in exchange rates.
SME3	production of natural cosmetics	38 years	More than 5 years	the Middle East and Asia	product certification according to international standards and managing language and cultural barriers.

SME4	production of electronic goods	52 years	5 years	to Europe and North America	compliance with international safety standards and managing currency exchange rate fluctuations.
SME5	specializing in high-end wooden furniture production	47 years	More than 7 years	North America and Europe	compliance with international sustainability standards for materials and managing fluctuations in exchange rates.
SME6	production of luxury textile products	45 years	More than 10 years	North America and Europe	intellectual property protection and managing differences in quality standards.
SME7	organic food products	39 years	4 years	North America and Europe	navigating complex trade regulations and customs procedures in different countries.
SME8	in renewable energy solutions	48 years	5 years	South American and African markets	navigating complex local regulations and building trust with overseas customers.
SME9	a fashion apparel manufacturer	53 years	5 years	Europe and Asia	staying up-to-date with fashion trends and meeting the quality expectations of international buyers.

SME10	a software development firm	45 years	8 years	North America and Australia	intellectual property protection and building strong relationships with overseas clients.

Realized by authors.

Table 5: the interviewed SMEs.

What is the necessity for using Lean management tools?

Figure 7

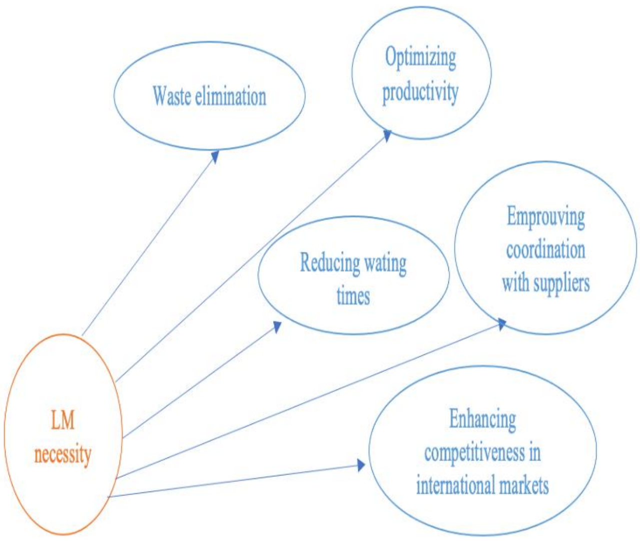
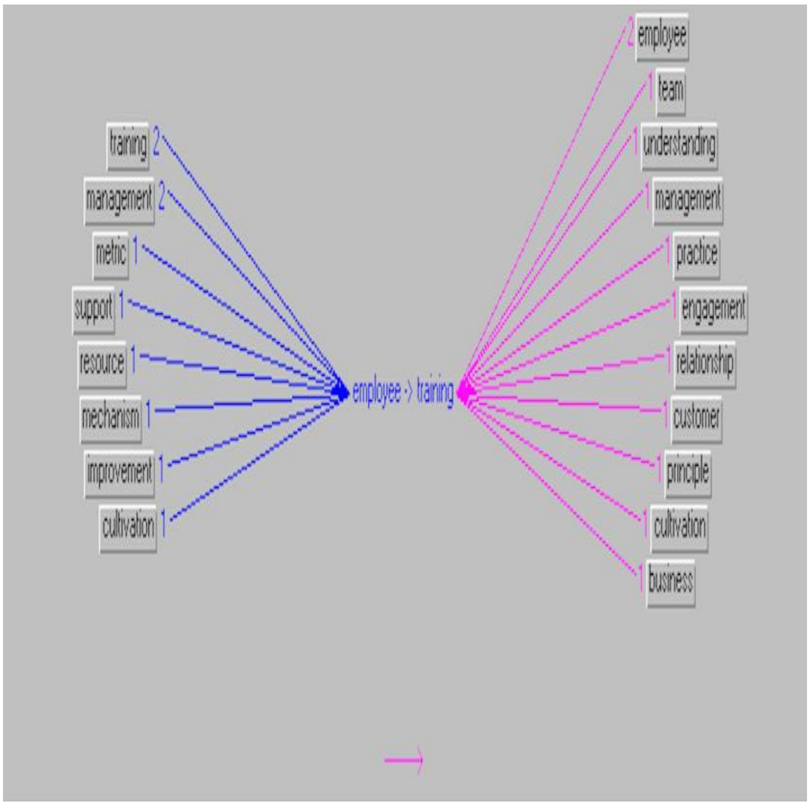


Figure 6: The need for SMEs to use Lean management tools." Realized by authors.

According to our interview with the 10 SMEs, the main necessity of using lean management tools lies in their ability to eliminate waste and optimize various aspects of operations. By implementing these tools, companies are able to successfully optimize production processes, reduce excess inventory, and improve production planning. The introduction of autonomous work cells further enhances productivity while minimizing waste. Just-in-time production methods are implemented to optimize resource utilization and reduce waste in both the production chain and the supply chain. By eliminating non-essential steps and reducing waiting times, the production chain is efficiently optimized. Coordination with suppliers has also improved, and inventory has been reduced in the supply chain. The adoption of just-in-time practices has led to reduced lead times and improved resource utilization. Visual management systems and standardized work processes are implemented, resulting in waste elimination and improved efficiency across all operations. Streamlining production processes, reducing lead times, and implementing continuous improvement initiatives have been essential in increasing the competitiveness of SMEs in international markets. Furthermore, the implementation of lean management promotes collaboration and ensures the timely delivery of high-quality products.

How do you involve your employees in adopting and implementing lean management to support your export activities?

Figure 8: the importance of training for enployees



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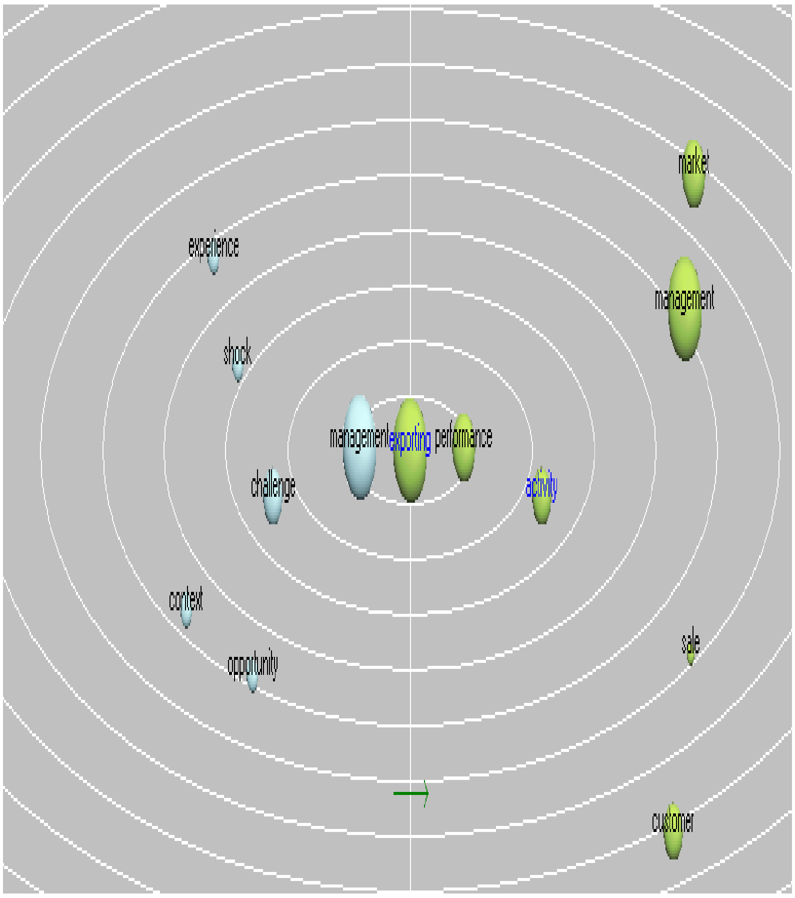
All the interviewees agreed on the importance of training for employees "as a responsible of an SME, we prioritize the active participation of all members of our organization. We achieve this by conducting lean management training sessions, implementing continuous improvement suggestions, and fostering employee involvement and continuous training. We actively involve employees in identifying improvement opportunities, encourage their contributions, and implement an employee suggestion program to recognize and reward valuable input. Our approach includes demonstrating leadership support, providing resources, and setting clear goals and metrics. We foster a culture of continuous improvement through employee feedback mechanisms, collaboration, and regular communication. By aligning lean management with our export strategy, we motivate employees to contribute and achieve positive results."

What is the impact of lean management on export performance?

Figure 9: the relationship between



By authors, Generated by Tropes

After analysing the responses generated by interviews with the ten SMEs, we find that Lean management has had a positive impact on export performance of all of them. The responsible of SME1 said that " By reducing production costs, we have been able to offer competitive prices in the international market. Improving the quality of our products has allowed us to meet the stringent requirements of foreign customers. Our ability to be responsive and flexible to the changing demands of international clients has helped strengthen our competitive position. Through lean management, we have also developed the skills of our employees, enhancing our technical expertise and innovation capabilities."

For the responsible of SME2, he said: “With better planning and greater flexibility, we have been able to effectively meet the specific demands of our international customers.”

The responsible of SME3 said “Lean management has greatly improved our export performance. Our ability to deliver quickly and on time has enhanced our reputation among foreign clients.”

It was actually the same answer that lean management has a positive impact on export performance of their entreprises . as he confirmed the responsible of SME 7 “ Lean management has played a crucial role in enhancing our export performance. By continuously improving our production processes, we have been able to maintain high product quality and meet the stringent requirements of international markets.”

For SME10 specialized on software developpement the manager said that “….particularly in terms of project delivery and customer satisfaction. By focusing on waste reduction and continuous improvement, we have gained a reputation for delivering innovative and reliable software solutions to our international clients.”

How do you measure your export performance?

Figure 10

Realized by authors.

Figure 8: export performance's measurement

To evaluate their export performance, small and medium-sized enterprises (SMEs) closely monitor several key indicators. They measure export revenue, international market share, customer satisfaction rates, and average delivery time. Additionally, they conduct market research to assess their competitive position and identify new export opportunities. SMEs also analyze metrics such as export sales volume, profitability in international markets, and customer complaint rates. By gathering feedback from their international customers, they identify potential areas for improvement. Through this rigorous evaluation, SMEs are able to adapt their products and services to the specific needs of foreign markets and maintain their competitive position in the export field.

Conclusion

The present article about the impact of Lean management on export performance of small and medium-sized enterprises (SMEs) has revealed several strengths and weaknesses while also highlighting certain limitations and suggesting directions for future research. One of the strengths of this study is the valuable insights obtained directly from ten SMEs operating in different sectors and international markets. The findings consistently demonstrated that the adoption of Lean management had a positive impact on the export performance of these SMEs. Process optimization, cost reduction, product quality improvement, flexibility in response to changing demands of international clients, and enhanced competitiveness were identified as the key benefits brought about by Lean management. However, this study also has certain limitations. Firstly, the sample size was relatively small, which may limit the generalizability of the findings to all SMEs. Additionally, the selected SMEs were predominantly based in specific geographical regions, which may restrict the representativeness of the conclusions. Furthermore, the results were based on responses from the interviewed SME managers, which could introduce potential bias in perceptions and interpretations of the findings. For future research, it is recommended to expand the sample by including more SMEs from diverse sectors and geographical regions. The use of mixed methodologies, such as in-depth interviews and quantitative analyses, could also provide a deeper understanding of the impact of Lean management on export performance. Furthermore, it would be valuable to explore specific challenges faced by SMEs during Lean management implementation and offer practical recommendations to overcome these obstacles. Despite these limitations, this study offers valuable insights for SME managers seeking to enhance their export performance through Lean management. The findings suggest that adopting Lean practices can offer significant advantages in terms of competitiveness, operational efficiency, and satisfaction of international customers. Using these findings as a foundation, managers can make informed decisions and implement tailored strategies for success in international markets. Ultimately, Lean management emerges as a promising approach for SMEs aiming to improve their competitiveness and succeed in exports. By furthering research in this area and continuing to share best practices, we can contribute to the advancement of knowledge and the enhancement of SME performance in international markets.

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