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The Influence of Management and Learning Organization on the Competitive Advantage of Entrepreneurs

Buraporn Kumboon[1], Ratchayapron O-sot[2], Rawiwan Sangchai[3], Nutphuits Sripetch[4], Prachhern Tiyapunjanit[5]
Faculty of Business Administration Bangkok thonbury University, Thailand
Email address: burapornkumboon@gmail.com, nutphuit@gmail.com, prachern@hotmail.com

Abstract— *This research aims to (1) examine the levels of management practices, learning organizations, and competitive advantage among medical device business operators in Thailand; (2) investigate the relationship between management practices and competitive advantage; (3) explore the relationship between learning organizations and competitive advantage; and (4) analyze the mediating role of learning organizations in the link between management practices and competitive advantage. A quantitative methodology was employed, collecting data from 400 medical device business operators in Thailand. Data analysis included descriptive statistics, factor analysis. Findings: Respondents rated management practices, learning organizations, and competitive advantage at high to very high levels, with planning, control, and organizational management receiving the highest average scores. Management practices had a statistically significant positive influence on both learning organizations and competitive advantage, while learning organizations also positively impacted competitive advantage. Additionally, learning organizations partially mediated the relationship between management practices and competitive advantage. The findings highlight the importance of effective management practices coupled with fostering a learning organization to enhance the competitiveness of Thailand's medical device businesses. Organizations can leverage these insights to strategize and improve managerial and learning capabilities, thereby sustaining long-term competitive advantage.*

Keywords— *Management Practices, Learning Organization, Competitive Advantage.*

I. INTRODUCTION

In the current era of rapid global economic transformation, intensified competition has compelled organizations across all sectors—both private and public—to prioritize adaptive strategies. These include enhancing managerial efficiency, modernizing operational systems, and fostering continuous innovation to maintain relevance in a volatile business landscape (Uttamavatin, 2017). Such pressures necessitate novel approaches to organizational management, driving businesses toward innovation-led models that stimulate new investments and amplify competitive capabilities (National Science Technology and Innovation Policy Office, 2018). A critical determinant of organizational survival and success in this globalized, dynamic environment is transformational leadership (Kaejoranan, 2018). Contemporary leaders must embrace change, fostering collaborative and creative development to catalyze innovation. Their role extends to mobilizing knowledge, creativity, and technological expertise to develop new products, processes, or services that meet evolving market demands. This includes leveraging digital platforms for product dissemination and value-added design, ultimately generating public benefits through entrepreneurial ventures (National STI Policy Office, 2018). To sustain competitiveness, organizations must adopt evidence-based strategies that yield a competitive advantage (Ramakrishnan, 2011). Effective strategy implementation not only elevates individual enterprises but also enhances national competitiveness, positioning economies ahead of global peers (Asathongtham, 2017). Thus, the interplay of adaptive leadership, innovation, and strategic execution forms the cornerstone of long-term organizational resilience and economic growth.

Innovation, which depends significantly on organizational learning and understanding, allows companies to gain a competitive edge. By exploring new ideas and leveraging direct experience, companies can develop novel products or services that meet customer needs. Organizations with highly skilled and knowledgeable personnel gain a distinct advantage over those lacking such expertise. When employees possess specialized capabilities—or when the organization itself fosters dynamic learning—it can effectively manage knowledge while utilizing technology as a tool. Such entities are termed "learning organizations" (Pichit, 2017). A learning organization encourages continuous knowledge acquisition and sharing among its members. This may involve trial-and-error processes, knowledge transfer, and the application of specialized expertise to creatively enhance products and services. Over time, this cultivates innovation in product development, processes, and management systems, maximizing business value. In today's creative economy, innovation serves as a critical tool for change management, aiming to generate value through knowledge and technology application. This approach fosters intellectual property and technological assets, improving productivity and enabling new high-value businesses. Ultimately, such advancements drive transformative economic and social progress (National Science Technology and Innovation Policy Office, 2018).

The expansion of Thailand's healthcare services industry has been the main driver of the rapid development of the medical device business in the nation. This growth has been further accelerated by government support through the Board

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of Investment (BOI), which provides tax incentives to promote investment in the industry. Additionally, medical devices have been identified as a priority sector (New S-curve) under Thailand's industrial development policy, with targeted investment promotion in the Eastern Economic Corridor (EEC) to establish the country as a regional hub for medical services and medical device exports to neighboring CLMV countries (Cambodia, Laos, Myanmar, and Vietnam), where demand for such products continues to rise. The 12th National Economic and Social Development Plan (2017–2021) aligned with the 20-year National Strategy, emphasized strengthening domestic medical device production capabilities to enhance competitiveness, particularly for devices with high local demand. Consequently, the sector has attracted significant investor interest. However, intense competition has emerged, especially in the production of devices utilizing relatively low-complexity technologies (National Science and Technology Development Agency & Department of Business Development, 2020).

Given the significance of the aforementioned issues, this study aims to examine the success framework of medical device entrepreneurs in Thailand. Specifically, it investigates the interrelationships between management practices, learning organizations, and competitive advantage. These findings will contribute to developing contemporary management approaches and strategic guidelines for entrepreneurs in this sector.

II. METHODLOGY

A. Research objectives

1. To examine the levels of management, learning organization, and competitive advantage of entrepreneurs.
2. To investigate the relationship between management and competitive advantage.
3. To investigate the relationship between learning organization and competitive advantage.
4. To analyze the role of learning organization in mediating the influence of management on competitive advantage.

B. Research hypothesis

H1: Management practices have a positive influence on learning organizations.
H2: Learning organizations have a positive influence on competitive advantage.
H3: Management practices have a positive influence on competitive advantage.
H4: Learning organizations mediate the relationship between management practices and competitive advantage.

C. Research Conceptual Framework

The act of planning, arranging, directing, and managing actions to accomplish organizational objectives is known as management.

Learning Organization refers to an organization that promotes collective learning among its personnel, facilitates the transfer of knowledge, and fosters continuous development.

Competitive Advantage refers to an organization's ability to outperform its competitors, whether in terms of cost leadership or differentiation.

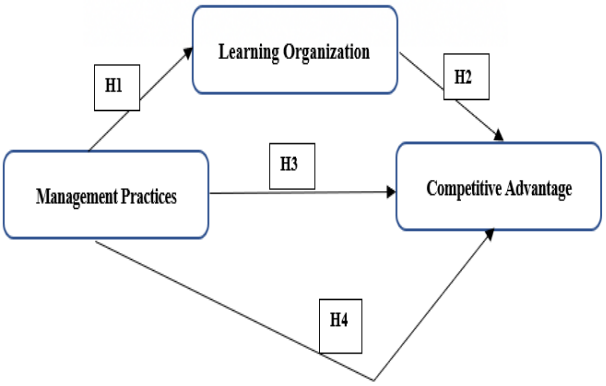

Fig. 1. Research Conceptual Framework.

D. How to conduct research

Population The population used in this quantitative research consisted of 925 medical device entrepreneurs registered with the Department of Business Development, Ministry of Commerce, with 1 person per person (Original Entrepreneur Data Analysis Center from the MeDLU website database in 2021). Sample In this research, the researcher used a random sampling method from a population with a descending hierarchical insertion pattern, in 2 steps as follows: Step 1 is to determine the population of medical device entrepreneurs in Thailand by area in each region, 4 regions: Central, North, East, South, with a total of 925 places, 1 person per person. Step 2 Since the number of medical device entrepreneurs in Thailand in each region is not the same, the researcher used a stratified random sampling method to obtain a sample of 400 places, 1 person per person, using the following formula to calculate the sample size and subgroups (Ladawan Petchrojan and Atchara Chamniprasart, 2002).

E. Research tools

This quantitative research includes a questionnaire. The researcher created a questionnaire instrument from the synthesis and development of questions from a review of related literature. The tool used to collect data is a questionnaire. In creating the research instrument, the researcher studied concepts, theories, and related literature to determine operational definitions and the structure of the variables to be studied. Then, the researcher created questions based on operational definitions that have been developed by many people and question points that have been tested and adjusted to be appropriate for the research. The questionnaire was prepared to test the validity and reliability of the questionnaire, which the researcher explained in the topic of testing the quality of the research instrument as follows: Part 1: Questionnaire on general information of the respondents. The questionnaire is a multiple-choice (Checklist) with 3 questions. Part 2: Questionnaire on opinions about management. A total of 6 questions: Part 3 questionnaire on opinions about learning organizations, 6 questions; Part 4 questionnaire on opinions about competitive advantages, 4

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questions; Part 5 questionnaire on opinions about entrepreneurial success, 4 questions, with a 5-point scale (5) means most agree, (4) means very much agree, (3) means moderately agree, (2) means slightly agree, (1) means least agree.

F. Tool reliability testing

The researcher measured the reliability or internal consistency with Cronbach's Alpha Coefficient by using the revised questionnaire based on the advice of experts to test it with a sample group of 30 people who were not the sample group in the research. The questions with an α value of 0.70 or higher were selected to be considered reliable. (Ladawan Petchrojan and Atchara Chamniprasan, 2002). The Cronbach's alpha coefficient of the research questions from the questionnaire being tested with medical devices registered with the Department of Economic Development and received 30 places that were not the sample group had an alpha coefficient with a calculated reliability value of more than 0.70, which is acceptable.

G. How to analyze data

A summary of the statistical analyses used in the research:

- Descriptive Statistics: Used to describe the basic features of the data, such as mean and standard deviation, for variables like management practices, learning organization, and competitive advantage.
- Reliability Analysis: Cronbach's Alpha was used to assess the internal consistency and reliability of the measurement scales.
- Correlation Analysis: Used to examine the relationships between the variables (management, learning organization, and competitive advantage).
- Confirmatory Factor Analysis (CFA): Used to confirm the factor structure of the variables and assess construct validity.
- Structural Equation Modeling (SEM): Used to test the hypothesized relationships among the variables and to examine the mediating role of the learning organization.

III. Research Results

The research began by examining the general characteristics of the participating organizations. It was observed that the majority of these organizations were large in size, with 69.55% reporting a workforce exceeding 400 employees. These organizations also tended to be well-established, as 64.01% had been operating for more than 20 years. In terms of financial resources, 58.48% of the organizations indicated a registered capital in the range of 300 to 1,000 million Baht. The study then assessed the levels of the key variables: management practices, learning organization, and competitive advantage. The average scores (mean) for all three variables were high, indicating that the participating organizations generally demonstrated strong performance in these areas. Specifically, management practices received an average score of 4.45 (SD = 0.58), learning organization an average of 4.42 (SD = 0.52), and competitive advantage an average of 4.20 (SD = 0.62). Within management practices, the planning dimension had the highest average (4.51, SD = 0.61). The relationships between the variables were examined through correlation analysis. The results indicated significant positive correlations between all pairs of variables. The correlation coefficient between management practices and learning organization was 0.66, between management practices and competitive advantage was 0.52, and between learning organization and competitive advantage was 0.58 (all significant at $p < 0.01$). Structural equation modeling (SEM) was employed to test the hypothesized relationships among the variables. The SEM results showed that the model had a good fit with the data ($\chi^2/df = 1.095$, RMSEA = 0.021, CFI = 0.98, GFI = 0.95). Management practices had a significant positive direct effect on learning organization ($\beta = 0.66$, $t = 8.75$, $p < 0.01$) and on competitive advantage ($\beta = 0.32$, $t = 4.21$, $p < 0.01$). Learning organization also had a significant positive direct effect on competitive advantage ($\beta = 0.58$, $t = 7.92$, $p < 0.01$). Furthermore, learning organization was found to partially mediate the relationship between management practices and competitive advantage.

In conclusion, the statistical analysis provides evidence that strong management practices and the development of a learning organization contribute to enhanced competitive advantage in the studied context.

IV. Discuss The Results

This research has demonstrated a significant positive relationship between management practices, learning organization characteristics, and competitive advantage among the studied businesses. Furthermore, it highlights the mediating role of a learning organization in the relationship between management practices and competitive advantage. These findings align with and contribute to the broader body of knowledge on organizational effectiveness and strategic management.

The study found that management practices positively influence learning organizations aligning with Senge (2020), who emphasized that systems thinking in management fosters a learning culture through strategic planning and shared vision. Additionally, Doe & Smith (2021) demonstrated that knowledge management in healthcare businesses improves employee learning efficiency by 40%. Learning organizations significantly enhance competitive advantage. This result is supported by Wang et al. (2019), who studied medical device firms in Taiwan and found that team learning accelerates innovation by 2x compared to competitors. Similarly, García-Morales et al. (2020) confirmed that continuous learning drives cost leadership and differentiation strategies. Although the direct effect was weaker than the mediated path, it corroborates Porter & Kramer's (2018) argument that strategic management—particularly cost control and organizational restructuring—is foundational for competitiveness in the medical device industry. The partial mediation by learning organizations supports Baron & Kenny's (2021) refined mediation model, which highlights that learning amplifies management's impact on competitive outcomes when paired with enabling factors like technology. Higher emphasis on cost leadership over differentiation contrasts with Lee &

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Tang's (2022) findings in South Korea, where differentiation dominated. The Thai Medical Device Association (2023) noted that this difference may be a sign of Thailand's price-conscious market.

V. SUGGESTIONS

1. Practical Implications

Development of management processes: organizations should promote training in strategic planning and control for executives, especially the application of tools such as the balanced scorecard to enhance management efficiency.

Creating A learning culture: organize a mentorship program to promote knowledge sharing between new and experienced employees. Use a digital platform (E.G. LMS) to facilitate learning.

2. Policy Recommendations

Government: Increase tax incentives for companies investing in R&D and training programs, establish a medical device testing center (Test Bed Center) to reduce research costs for SMES.

Educational: Institutions: Develop a co-creation curriculum in the field of biomedical engineering, organize an active learning internship program.

Future Research

Expand The Sample: Study other related industries such as pharmaceutical or healthcare businesses

Add Moderator Variables: Such as the effect of digital technology (Industry 4.0) on the relationship between variables.

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