STRUCTURAL EQUATION MODELING FOR THE BUSINESS PERFORMANCE OF PRIVATE HOSPITALS IN THAILAND: MANAGEMENT PERSPECTIVE

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Abstract

This research aimed to study the causal factors affecting the business performance of private hospitals in Thailand from a management perspective. The sample consisted of 411 executives from private hospitals in Thailand, selected through purposive sampling. Data were collected via questionnaire, with SEM being used for analysis. The results indicated that the development of an enterprise resource system, including the competency and capability of entrepreneurs, positively influenced the focus on competitive differentiation. In turn, this focus had a positive effect on customer relationship management. Customer relationship management positively impacted brand loyalty, which subsequently enhanced business performance. In contrast, the competency and capability of entrepreneurs did not have an effect on business performance.

The findings suggest that the growth and sustainability of business performance in private hospitals depends on various supportive factors. These range from policy formulation and the development of technological systems in services to strategies for building customer relationships, all contributing to competitive advantages, service loyalty, and success in achieving set goals.

Keywords: Structural Equation Modeling (SEM), AMOS, Business Performance, Private Hospital, Management Perspective.

1. INTRODUCTION

The service industry, particularly in healthcare, medicine, and public health, plays a pivotal role in bolstering a nation's economy and income generation, addressing fundamental needs for quality of life. Given the persistent global health challenges, the government has prioritized the establishment of robust public health service systems, with a specific focus on Thailand's potential to become a prominent medical hub in Asia. The exceptional competitive advantages of Thai private hospitals, encompassing adherence to national and international healthcare standards, robust tourism resources, well-trained personnel, and a commitment to service excellence, underscore this emphasis. Examining the recent five-year period (2017-

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2021) reveals a noteworthy average annual revenue growth of over 7.7% in private hospitals, notwithstanding the challenges posed by the COVID-19 pandemic. A survey conducted by the Department of Health Service Support (2023) projects a 15% revenue growth for Thai private hospitals from 2021, reaching a market value of 320 billion baht, meeting the demands of both domestic and international markets. Private hospitals play a crucial role in alleviating the constraints faced by government healthcare centers, addressing issues such as high bed occupancy rates, overcrowding, and extended waiting times for outpatients. These challenges impede patients' access to convenient and timely healthcare services, prompting private hospitals to strategically invest in areas where government facilities fall short, ensuring comprehensive and expeditious service provision (Yoovidhya et al., 2021). Consequently, individuals with social status and financial readiness prefer private hospitals to receive quality services tailored to their preferences regarding location and timing.

Customer selection of private hospitals is primarily influenced by service-related factors, which include aspects such as convenience, speed, cleanliness, attentiveness, and the friendliness of healthcare personnel at all levels (Subongkod, 2019). Additionally, factors such as hospital location, overall environment, and cleanliness, are crucial, demanding attention from hospital executives due to their significant role in the success of hospital management. Another decisive factor prompting customers to choose private hospitals is the appropriateness of expenses, which should align with the perceived value of services and be competitive with government hospital charges. To enhance competitiveness, private hospitals must focus on quality, care standards, service speed, and the reputation of medical professionals. Beyond product or service differentiation, a customer-centric approach is advocated, urging hospitals to prioritize customer service from the initial encounter through to follow-up treatments. To improve their competitive edge, private hospital businesses in Thailand should adopt diverse strategies and methods to attract customers. Customer relationship management (CRM) emerges as a vital aspect of operations, contributing to organizational excellence and peak business performance (Umniyatun et al., 2023). Business executives are encouraged to continually analyze changing external situations and employee demands, giving due importance to customer demands in allocating organizational resources for enhanced customer satisfaction (Sah et al., 2020). A comprehensive understanding and implementation of CRM practices are deemed essential for organizational success, empowering business executives to effectively leverage customer relationships for sustained success and optimal business performance.

Organizational leaders are tasked with formulating strategies and policies to cultivate strong relationships between customers and the organization, optimizing the use of organizational resources. Success in this endeavor relies on the leaders' ability to analyze both external and internal organizational situations, integrating business strategies with technology to efficiently guide organizational management. The continual pursuit of new customers and the retention of existing ones is paramount, focusing on placing customers at the core of management. Understanding customer needs, differentiating products and services, and effectively communicating through diverse organizational channels, are critical processes in developing products or services that align with customer demands (Amer et al., 2022). Furthermore, creating a positive customer attitude towards products and services fosters recommendations and word-of-mouth, thereby building credibility and customer loyalty, and enhancing overall business performance (Burlea-Schiopoiu & Ferhati, 2020).

The purpose of this research is to elucidate the causal factors influencing business performance, in relation to private hospitals in Thailand by empirically evaluating the concordance between the hypothesized causal model and the observed data. This will contribute to the performance of other organizations in readiness to fulfill consumers' demands

in order to assist in the development of an effective service delivery for private hospitals in Thailand.

2. LITERATURE REVIEW

2.1 Theoretical Background

The Resource-Based View (RBV) framework, initially introduced by Barney (1986) and further expounded upon by Hamel & Prahalad (1996), offers a comprehensive analysis of organizational resources to elucidate the mechanisms through which organizations attain a sustainable competitive advantage. This theoretical perspective centers on discerning the challenging-to-imitate attributes inherent in a firm, positing them as pivotal sources of superior performance and instilling a competitive edge. Resources that are non-transferable, non-purchasable, and require a lengthy learning curve or significant shifts in organizational culture are considered unique to the organization, thereby making them resistant to imitation by competitors (Barney, 1986; Hamel & Prahalad, 1996). According to Conner (1991), the differences in performance among firms can be attributed to their possession of distinct inputs and capabilities.

Barney (1991) categorizes resources into three primary types: physical capital resources, human capital resources, and organizational capital resources. The Resource-Based View highlights that a company's competitive advantage comes from its internal pool of resources and capabilities. How these resources and capabilities are combined uniquely influences the company's position in the market. Hence, the RBV theory serves as a valuable tool for identifying the pertinent variables in the context of this research, illuminating the interplay between a firm's internal resources and its competitive advantage in the marketplace.

2.2 Development of Enterprise Resource System (DERS)

The imperative for resource management development in today's highly competitive business landscape underscores the significance of enterprise resource systems. These systems leverage technology to enhance operational capabilities, streamline organizational resources, and expedite decision-making processes, constituting a pivotal element in digital transformation (Shohet & Nobili, 2016; Stoel & Havelka, 2021). Comprising standard modules catering to organizational needs, including management, sales, marketing, human resources, and warehouse management, these systems facilitate efficiency and organizational growth (Mosweu & Ngoepe, 2021). Simultaneously, organizational capabilities are continually enhanced through the integration of technologies such as data processing efficiency tools, e-commerce systems, mobile platforms, and cloud-based software-as-a-service (Salur & Kattar, 2021; Barros & Marques, 2022). The introduction of a requirements planning system, supported by executive and organizational backing, further contributes to effective project management and competitive advantages (Petroni, 2002). The evolution of enterprise resource systems is integral to organizational functioning, establishing a comprehensive framework for resource planning. This encompasses the efficient utilization of products, infrastructure, personnel, and trade affiliations, guided by internal resource planning guidelines (Anaya & Qutaishat, 2022). Emphasizing the intersection between resource planning and customer relationship management, technology-driven communication ensures operational success (Smolander et al., 2021). The overarching objective is to create value from business resources, aligning them with customer demands and optimizing overall resource management efficiency (Zendehdel Nobari et al., 2020).

In summary, the deployment of enterprise resource systems serves as a strategic business management tool, addressing organizational challenges, facilitating investment planning, and enhancing resource management efficiency. It fosters seamless connectivity between procurement, production, and marketing processes, promoting judicious resource use. The successful integration of these systems requires internal support for resource planning, aligning resources with customer demands, and acting as a guiding framework for overall business development, thereby driving work efficiency and quality (Mamoghli & Cassivi, 2019). The prior literature leads to the formulation of hypotheses 1 and 3:

H1: The development of an enterprise resource system has a direct positive effect on focusing on competitive differentiation.

H3: The development of an enterprise resource system has a direct positive effect on business performance.

2.3 Focusing on Competitive Differentiation (FCD)

In response to a dynamic environment, businesses must cultivate a competitive advantage through focused differentiation. This strategic capability involves possessing valuable and distinct resources, such as innovative competency, serving as a pivotal channel for business operations and contributing to long-term organizational success and survival (Yuleva, 2019). Focused competitive differentiation prompts organizations to scrutinize changes in the external environment alongside shifts in organizational resources, ensuring preparedness for seamless changes in business operations (Chaudhuri et al., 2022). Research indicates that competitive differentiation, functioning as a channel for business activities, encompasses a comprehensive system from product development to after-sales service, creating a value chain in business operations (Eid et al., 2020). Organizations distinguished by exceptional business features gain competitive advantages, turning these advantages into an organizational strength and identity. This strategic approach fosters continuous business growth (Liang et al., 2022; Li et al., 2022). Moreover, focused competitive differentiation enables organizations to create unique products by strategically analyzing the business operation channel to lower production costs and provide greater benefits to customers (Abdelmoety et al., 2022). Prioritizing reliable communication channels is crucial for ensuring quick and accurate information responsiveness. Additionally, involving customers in understanding information and providing a variety of communication channels is essential. Focused competitive differentiation influences customer relationship management, serving as a key channel for the success of business operations (Gyemang & Emeagwali, 2020), leading to the formulation of Hypothesis 5:

H5: Focusing on competitive differentiation has a direct positive effect on customer relationship management.

2.4 Competency and Capability of Entrepreneurs (CCE)

Entrepreneurial capability is increasingly recognized as a crucial aspect of effective business management, enabling businesses to navigate economic downturns and fierce competition by leveraging organizational knowledge and management skills (Blattner, 2021). Successful entrepreneurs, as identified by Blattner (2021), exhibit key traits such as independence in management, innovation, risk-taking, competitiveness, and proactive work, all contributing to enhanced competitive advantages. According to Clough et al. (2019), entrepreneurs must possess innovation, risk exposure, and proactive work to thrive in competitive markets. These characteristics, combined with independence in management and innovation creation, contribute to focused differentiation in business (Morrish & Jones, 2020).

Additionally, entrepreneurs must cultivate qualities such as being opportunity seekers, risk-takers, creative thinkers, knowledge seekers, visionary leaders, and effective networkers, for business success (Baptista et al., 2023). The competency and capabilities of entrepreneurs encompass cognitive and intellectual abilities, verbal and negotiation skills, as well as moral and ethical aptitudes, courage, effort, and awareness of opportunities (Lafortune et al., 2018). Equipped with these competencies, entrepreneurs can identify marketing opportunities, and overcome obstacles related to product quality, documentation, labor, risk, and goods delivery, contributing to business growth and success (Oesterreich et al., 2022).

Furthermore, entrepreneurs with well-honed competencies and capabilities demonstrate readiness to confront moderate levels of risk, aligning with the findings of Hamilton et al. (2019). This is consistent with the study of Bamidele et al. (2017), which underscored that highly talented entrepreneurs achieve greater success in terms of profit, sales, and customer numbers, compared to their less-talented counterparts. These observations led to the formulation of Hypotheses 2 and 4:

H2: The competency and capability level of entrepreneurs has a direct positive effect on focusing on competitive differentiation.

H4: The competency and capability level of entrepreneurs has a direct positive effect on business performance.

2.5 Customer Relationship Management (CRM)

Customer Relationship Management serves as a strategic framework employed by organizations to effectively oversee and enrich their engagements with customers across the entire customer lifecycle. This approach integrates technology, processes, and data analysis to gain deeper insights into customer needs, preferences, and behaviors, ultimately aiming to cultivate enduring and mutually advantageous relationships (Winer, 2001; Ngai, 2005; Kumar & Reinartz, 2018).

In contemporary industrial and service business operations, cultivating relationships with customers through quality services and prompt responsiveness to customer demands is recognized as a critical success factor, with a strong emphasis on achieving the highest level of customer satisfaction (Cao et al., 2021). Establishing a relationship between customers and the organization serves as a means of exchanging customer demands for outstanding services, influencing customer satisfaction, and fostering loyalty to the services. This, in turn, contributes to the seamless functioning of business operations. The resultant outcome of effective customer relationship management is the development of brand loyalty (Sameeni et al., 2022). Key characteristics of brand loyalty include responsive behavior toward a specific product or service, a decision-making bias, consistent brand expression, and a lack of interest in other products (Ma, 2020; Le, 2021). Factors influencing the service quality of private hospital businesses include the precision of treatments, adherence to ethical standards, prompt service responses, and the provision of comprehensive treatment information. Exceptional services and quality treatments significantly contribute to gaining a competitive edge and improving overall business performance. According to research by Ibrahim & Yesiltas (2021), effective customer relationship management, particularly through focused service quality, is evident in customer satisfaction and the creation of value in the delivered products or services. This process, spanning from the initial to the final stages of product or service selection, is integral to creating a value chain that guarantees customer satisfaction, loyalty, and repeated service use, discouraging customers from seeking similar services elsewhere (Li et al., 2023). Research by Magatef et al. (2023) emphasizes that organizations creating value in a product or service leave a lasting impression on customers, transforming them into regular customers and fostering loyalty to the organization's offerings. This led to the formulation of Hypothesis 6:

H6: Customer relationship management has a direct positive effect on brand loyalty.

2.6 Brand Loyalty (BLY)

Brand Loyalty signifies the degree of customers' allegiance and dedication to a specific brand or product, reflecting their consistent preference over alternatives. This commitment is evident through repeat purchases, a positive brand attitude, and a reluctance to switch to competing brands. Keller and Lehmann (2006) highlight the pivotal role of brand loyalty in long-term success and the formation of a competitive advantage within brand management. The current literature stresses the importance of cultivating brand loyalty by creating positive brand associations, maintaining consistent and superior quality, and establishing emotional connections with customers (Mellens et al., 1996; Yin & Jeon, 2003).

Brand loyalty reflects business performance, emphasizing the importance of building a relationship between customers and the organization, thereby leading to higher success and efficiency in business performance. A study by Pham & Vu (2019) identified that customer experience of service quality and brand loyalty impacts business performance. Frasquet et al. (2023) determined that when an organization fosters customer loyalty to its brand or service, it results in greater business performance. Thus, customer service that makes customers feel loyal to the product or service they receive must be improved to become more convenient and responsive to customer demands, thereby generating greater customer trust and confidence (Timoumi et al., 2022). Research on the relationship between brand loyalty and business performance, as reflected through customer relationship management, shows that CRM which utilizes resource databases in organizational management to increase market value, leads to success in business operations (Cui et al., 2022). Organizations must consistently enhance services, maintain resource readiness, and prioritize personnel development for customer satisfaction (Hongsakul & Subongkod, 2023; Tang et al., 2023). Satisfied customers foster faith in products and services, which is crucial for organizational operations. Private hospitals must focus on precise and standardized treatments, emphasizing skilled personnel and continual improvement to boost customer confidence, leading to increased income and profit. Attaining customer loyalty is a pivotal business goal for sustained superiority over competitors (Kuosmanen et al., 2023), forming the basis for Hypothesis 7:

H7: Brand loyalty has a direct positive effect on business performance.

## 2.7 Business Performance (BP)

Business Performance refers to the overall effectiveness and success of a business in realizing its defined objectives and goals. This comprehensive evaluation encompasses various facets, including financial results, operational efficiency, customer satisfaction, and market competitiveness. A business's performance is a reflection of its ability to excel in these diverse dimensions. Kaplan and Norton (1996) introduced the Balanced Scorecard framework as a method to understand and manage business performance holistically. The framework includes four main viewpoints: financial, customer, internal processes, and learning and growth. The financial perspective looks at the economic results, the customer perspective focusses on customer satisfaction and loyalty, the internal processes perspective evaluates how well operations are running in terms of efficiency and effectiveness, and the learning and growth perspective concentrates on the development of both individuals and the organization. Effectively measuring and managing these perspectives enables organizations to attain a well-rounded and integrated comprehension of their overall performance. This approach goes beyond financial metrics alone, considering the broader aspects that contribute to a company's success and sustainability (Franco-Santos et al., 2007; Morgan, 2012).

In summary, Business Performance is a multidimensional concept, as outlined in the Balanced Scorecard framework by Kaplan and Norton (1996). The evaluation and optimization of a company's performance across various critical areas, encompassing financial, customer, internal processes, and learning and growth perspectives, are essential for achieving sustained success and competitiveness in the market. This process considers an array of crucial areas and four perspectives, including financial, customer, internal processes, and learning and growth, to ensure business success. A well-balanced business performance will allow organizations to discover the full repercussions of their strategies (Muensriphum et al., 2021; Khongsawatkiat & Agmapisarn, 2023). This approach ensures a balanced and comprehensive understanding of a business's performance beyond just financial indicators. Including the perspectives and perceptions of corporate executives in various businesses is an important factor (Analoui & Karami, 2002).

2.8 Theoretical Framework and Hypotheses

In the current study, a research model was developed to investigate the relationships between the development of enterprise resource systems, focusing on competitive differentiation, the competency and capability of entrepreneurs, customer relationship management, brand loyalty, and business performance, in private hospitals in Thailand, as shown in Figure 1.

Figure 1 . Conceptual Framework of this Study and the Research Hypotheses
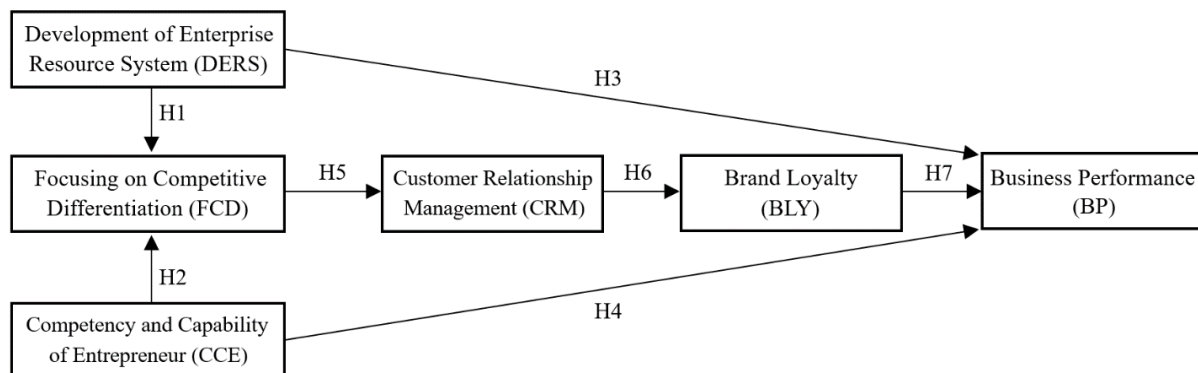
3. RESEARH METHODOLOGY

3.1 Population and Sample

The unit of analysis for this research was at the organizational level, focusing on data from 425 private healthcare operators with overnight care (hospitals), as reported by the Department of Health Service Support, Ministry of Public Health (Department of Health Service Support, 2023). The sample size was calculated using an analytical calculator, an online software tool utilized for structural model analysis (Soper, 2022). According to causal structural models with latent variables, a suitable sample size is approximately 10 – 20 times the number of observable variables. In this study, with 6 latent variables and 31 observable variables, the minimum sample size required would be 310 (Hair et al., 2019). To avoid any potential data errors, the entire sample of 425 hospitals was utilized. Data were collected from top executives, marketing managers, and individuals responsible for customer relations in private hospitals in Thailand.

3.2 Measurement and Questionnaire Design

The research instrument was a questionnaire comprised of 31 question items. These items included measurements for the development of a resource management system, focusing on competitive differentiation, the competency and capability of entrepreneurs, customer relationship management, brand loyalty, and business performance. All measurements were in the form of a 5-point Likert scale. The developed research questions for the 6 variables are shown in Table 1.

For the validity measurement of the research instrument, 3 experts were consulted to assess the congruence between the question items and the research objectives using the index of item objective congruence (IOC). Each item had an IOC value greater than 0.5, therefore, the questionnaire passed the research validity test. The reliability of the questionnaire was evaluated by using a trial questionnaire with a sample of 30 individuals. The Cronbach's alpha coefficient was calculated to be 0.875, indicating that the questionnaire was highly reliable (Hair et al., 2019).

Table 1 Source of Measurement Items Used in the Questionnaire

Variables	Measurement Items	Source
DERS	The hospital adeptly handles departmental budgets.	Oesterreich et al., (2022)
	The hospital allocates high-quality and modern medical equipment.	Torres et al., (2018)
	The hospital assigns qualified personnel for each aspect of the workload.	
	The hospital has a plan to use resources wisely.	
	The hospital has transparency and fairness in the procurement system.	
FCD	The hospital has specialized doctors for challenging and complex diseases.	Distanont & Khongmalai, (2020)
	Nurses and staff are proficient and ready to provide attentive patient care.	Quach & Thaichon, (2017)
	The hospital treats specific diseases differently from other healthcare centers.	
	The hospital can create its own identity, giving patients and patients' relatives confidence and trust to always use its services.	
	The hospital prioritizes quality development in alignment with certification standards from various institutions.	
CCE	The hospital management team is experienced and skilled in running a successful business.	Donkor et al., (2021)
	The hospital management team can swiftly analyze and adapt to situations.	Ren et al., (2021)
	The hospital management team can make decisions and is willing to take on business risks.	
	The hospital management prioritizes innovative integration for enhanced operational efficiency.	
	The hospital management team is self-assured, trusts its members, and encourages team input.	
	The hospital management team proactively manages, consistently creating favorable opportunities for departments.	

Table 1 (Continued)

Variables	Measurement Items	Source
CRM	You trust caregivers and relatives to receive the best care at the hospital.	Intayos et al., (2021)
	You trust patients and relatives to have confidence in physicians' expertise and reputation for treatments.	Magatef et al., (2023)
	Patients and relatives can visit treating physicians for advice at any time.	
	Patients and relatives will receive feedback, and suggestions in all instances.	
	Patients will receive corrections in all instances where errors may arise from hospital services.	
	The hospital fully supplies patient facilities, communication devices, and instruments.	
BL	You're confident that customers will choose your hospital for medical treatment when they have health issues.	Ibrahim & Yesiltas, (2021)
	Satisfied patients and relatives are likely to recommend your hospital's services to others.	Chaisuwan (2021)
	Patients and relatives consistently speak positively about your hospital.	Jung et al., (2021)
	You trust that patients recall distinct features of the hospital.	Hongsakul & Subongkod, (2023)
	You trust that your hospital instills confidence in the quality of medical treatments for service recipients.	
BP	Your hospital consistently attracts a growing number of new service recipients.	Al-Dmour et al. (2019)
	Your hospital achieves revenue goals as planned.	Berberoglu (2018)
	Your hospital commands a significant market share.	
	Your hospital earns credibility and maintains a positive image in society.	

Note. DERS = Development of enterprise resource system, FCD = Focusing on competitive differentiation, CCE = Competency and Capability of Entrepreneur, CRM = Customer Relationship Management, BLY = Brand Loyalty, BP = Business Performance

3.3 Data Analysis

Structural Equation Modeling (SEM) was used, allowing for simultaneous measurement of the measurement model and the structural model. Confirmatory factor analysis (CFA) was employed with the measurement model to validate the congruence between the model and the empirical data. This process confirms the relationship of observable variables to latent variables by examining discriminant validity. The square root of the mean of the extracted variance must be greater than the internal correlations. This includes investigating the structural validity of the measurement model (Convergent Validity). Factor loadings should be 0.50 or higher, composite reliability (CR) should be greater than 0.70, and the average variance extracted (AVE) should be greater than 0.50 (Fornell & Larcker, 1981; Hair et al., 2019). Once the measurement model passed the structural validity precision criteria, the suitability of the measurement model was assessed by confirming the relationship between the observed variables and latent variables using goodness of fit criteria, which included: the relative Chi-square ($\chi2/df$) being less than 5, the root mean square error of approximation (RMSEA) being less than 0.08, the comparative fit index (CFI) being greater than 0.90, the

Tucker Lewis Index (TLI) being greater than 0.90, and the root mean square residual being less than 0.80 (Hair et al., 2019). The structural model was analyzed to test the research hypotheses based on the research conceptual framework and empirical data, using the same goodness of fit criteria. SPSS software was used for general data analysis, and AMOS software was employed for analyzing the structural equation model.

4. RESULTS

4.1 Preliminary Data Analysis

4.1.1 Respondents' Descriptive Analysis
In this study, a total of 425 questionnaires were collected, of which 411, constituting 96.70%, were complete. The analysis of demographic information revealed that the greatest proportion of respondents were female (57.70%), aged between 45 - 50 years (69.60%), and held educational qualifications beyond a bachelor's degree level (76.90%). Furthermore, 56.40% of the respondents possessed over 10 years of work experience, and 92.00% held positions as department managers.

4.1.2 Discriminant Validity
According to the Fornell-Larcker criterion, a specific variable should demonstrate greater variability with its own items compared to other variables. The correlation between any two constructs should be less than the square root of the Average Variance Extracted (AVE), as detailed in Table 2.

Table 2 Discriminant Validity with the Fornell-Larcker Criterion

	Fornell-Larcker criterion					
	DERS	**FCD**	**CCE**	**CRM**	**BL**	**BP**
DERS	**.80**					
FCD	.569**	**.76**				
CCE	.666**	.575**	**.73**			
CRM	.326**	.355**	.475**	**.71**		
BLY	.598**	.473**	.593**	.420**	**.79**	
BP	.554**	.475**	.563**	.429**	.741**	**.81**

Note. p<.01
DERS = Development of enterprise resource system, FCD = Focusing on competitive differentiation, CCE = Competency and Capability of Entrepreneur, CRM = Customer Relationship Management, BLY = Brand Loyalty, BP = Business Performance

As shown in Table 2, it was found that the Pearson correlation coefficient for each latent variable ranged from 0.326 to 0.741, indicating that the relationships between variables were quite good (Fornell & Larcker, 1981). The results of the discriminant validity for latent variables revealed that the square root of the average variance extracted (AVE), shown in the diagonal results of the table, was greater than the internal correlation for each latent variable. This suggests that the discriminant validity criterion was met, and the issue of multicollinearity (a high degree of internal correlation between two or more independent variables) was not detected (Hair et al., 2019).

4.1.3 Reliability and Validity Analysis
The measurement model was analyzed using confirmatory factor analysis (CFA) to investigate its structural validity (Convergent Validity). Consideration was given to factor

loadings. To ensure the reliability and validity of the constructs, the first step involved evaluating internal consistency using composite reliability (CR), Cronbach's alpha (α), and the average variance extracted (AVE). The results of the Reliability, and Validity of Construct Indicators are presented in detail in Table 3.

Table 3 Confirmatory Factor Analysis (CFA), Reliability and Validity of Construct Indicators

Type	Constructs	Indicators	Factor Loading	Indicators Reliability	Cronbach's alpha	CR	AVE
Composite	Development of Enterprise Resource ystem (DERS)	DERS1	0.75	0.88	**0.89**	**0.90**	**0.64**
		DERS2	0.83	0.86			
		DERS3	0.83	0.86			
		DERS4	0.78	0.87			
		DERS5	0.79	0.87			
Composite	Focusing on Competitive Differentiation (FCD)	FCD1	0.67	0.85	**0.87**	**0.87**	**0.58**
		FCD2	0.68	0.87			
		FCD3	0.85	0.82			
		FCD4	0.91	0.82			
		FCD5	0.74	0.84			
Composite	Competency and Capability of Entrepreneur (CCE)	CCE1	0.70	0.87	**0.88**	**0.88**	**0.54**
		CCE2	0.81	0.85			
		CCE3	0.65	0.87			
		CCE4	0.77	0.86			
		CCE5	0.76	0.85			
		CCE6	0.72	0.86			
Factor	Customer Relationship Management (CRM)	CRM1	0.70	0.77	**0.83**	**0.81**	**0.51**
		CRM2	0.72	0.79			
		CRM3	0.66	0.80			
		CRM4	0.76	0.79			
		CRM5	0.69	0.81			
		CRM6	0.66	0.79			
Composite	Brand Loyalty (BLY)	BLY1	0.78	0.88	**0.89**	**0.89**	**0.62**
		BLY2	0.87	0.87			
		BLY3	0.83	0.86			
		BLY4	0.76	0.87			
		BLY5	0.72	0.88			
Factor	Business Performance (BP)	BP1	0.78	0.86	**0.89**	**0.88**	**0.65**
		BP2	0.91	0.84			
		BP3	0.80	0.83			
		BP4	0.73	0.89			

$\chi^2 107.017 = $; df = 87; p =0.072; CFI =0.995; GFI = 0.972; AGFI =0 .945; RMSEA = 0.024; Chi-square/DF =1.230

4.2 Structural Equation Model

The SEM analysis was conducted to investigate the influence of various factors on the business performance of private hospitals in Thailand. The final results show that the model is consistent with the empirical data: It was observed that the variables could indeed be

components of latent variables. Factor loadings ranged from 0.65 to 0.91, all of which were greater than the threshold of 0.50 (Hair et al., 2019). The validity test results of the question items, as indicated by Cronbach's alpha coefficients, ranged from 0.83 to 0.89, exceeding the 0.70 threshold. Composite reliability (CR) values ranged from 0.81 to 0.90, and were also above the minimum of 0.70, while the average variance extracted (AVE) ranged from 0.51 to 0.65, surpassing the 0.50 threshold. The model's goodness of fit indices were as follows: $\chi 2$ = 107.017; df = 87; p = 0.072; CFI = 0.995; GFI = 0.972; AGFI = 0.945; RMSEA = 0.024; Chi-square/DF = 1.230, indicating that the test results for congruence between the measurement model and the empirical data met the established criteria.

4.3 Hypothesis Testing Results and Path Analysis

The structural equation modeling analysis was executed to assess the hypotheses, with particular attention given to the path coefficients. The findings of the hypothesis testing, as presented in Table 4 below, reveal the substantiation of 6 significant hypotheses. All paths demonstrated significance at the 0.01 and 0.05 levels, with the exception of the path coefficients associated with the competency and capability of entrepreneurs, which did not exert a statistically significant influence on business performance (ß = 0.02, p > 0.05).

The results from the examination of the research hypotheses indicate that the development of enterprise resource systems has a positive impact on focusing on competitive differentiation (ß = 0.58, p < 0.01). Moreover, the competency and capability of entrepreneurs exhibits a positive influence on focusing on competitive differentiation (ß = 0.44, p < 0.01). Additionally, the development of enterprise resource systems exerts a positive influence on business performance (ß = 0.19, p < 0.01). The hypothesis asserting that focusing on competitive differentiation positively influences customer relationship management (ß = 0.76, p < 0.01) was supported. Furthermore, customer relationship management demonstrates a positive impact on brand loyalty (ß = 0.89, p < 0.01), and brand loyalty, in turn, positively affects business performance (ß = 0.70, p < 0.01). Consequently, hypotheses H1–H3 and H5–H7 found support, while H4 lacked support based on the test results.

Table 4 Hypothesis Testing Results

	Direct influence			β	b	S.E.	t-test	Result	
H1:	DERS	→	FCD	0.58***	0.43	0.06	7.396	Significant	Accept
H2:	CCE	→	FCD	0.44***	0.25	0.04	6.301	Significant	Accept
H3:	DER	→	BP	0.19**	0.18	0.06	3.080	Significant	Accept
H4:	CCE	→	BP	0.02	0.01	0.04	0.336	Not Significant	Reject
H5:	FCD	→	CRM	0.76***	0.55	0.07	7.631	Significant	Accept
H6:	CRM	→	BLY	0.89***	1.53	0.20	7.800	Significant	Accept
H7:	BLY	→	BP	0.70***	0.72	0.07	10.368	Significant	Accept

Note **p<0.05, ***p<0.01
DERS = Development of enterprise resource system, FCD = Focusing on competitive differentiation, CCE = Competency and Capability of Entrepreneur, CRM = Customer Relationship Management, BLY = Brand Loyalty, BP = Business Performance

Moreover, Figure 2 presents the results of the hypothesis tests, which were used in the Path Analysis. This analysis reveals that factors corresponding to hypotheses H1-H3 and H5-H7 exhibited direct effects at the significance levels of 0.01 and 0.05, respectively. The study also considered factors exerting an indirect influence on the business performance of private hospitals in Thailand. Notably, it identified that the development of an enterprise resource system has an indirect impact on business performance through variables focusing on com-

Figure 2 Results of the Structural Equation Model (Path analysis)
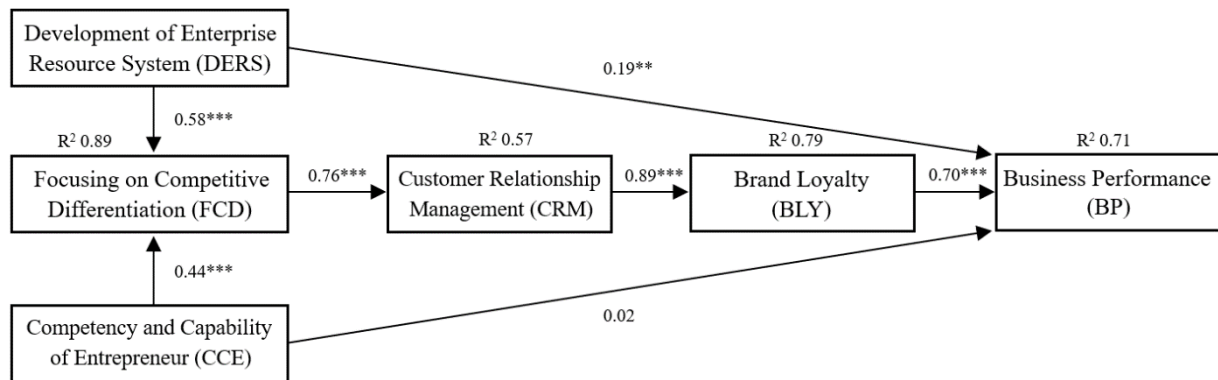
petitive differentiation, customer relationship management, and brand loyalty, resulting in a total effect value of 0.46 at a significance level of 0.01.

While factors related to the competency and capability of entrepreneurs did not demonstrate a direct effect, a detailed analysis of their indirect effects revealed that these factors influence business performance through variables focusing on competitive differentiation, customer relationship management, and brand loyalty. This influence was quantified with a total effect value of 0.23 at a significance level of 0.01, as outlined in Table 5.

Table 5 Coefficients for the direct effect, indirect effect, and total effect

	FCD (R^2 = .89)			**CRM** (R^2 = .57)		
	DE	**IE**	**TE**	**DE**	**IE**	**TE**
DERS	0.58***	-	0.58***	-	0.44***	0.44***
CCE	0.44***	-	0.44***	-	0.33***	0.33***
FCD	-	-	-	0.76***	-	0.76***
CRM	-	-	-	-	-	-
BLY	-	-	-	-	-	-
	BL (R^2 = .79)			**BP** (R^2 = .71)		
	DE	**IE**	**TE**	**DE**	**IE**	**TE**
DERS	-	0.39***	0.39***	0.19**	0.27**	0.46**
CCE	-	0.30***	0.30***	0.02	0.21**	0.23**
FCD	-	0.67***	0.67***	-	0.47***	0.47***
CRM	0.89***	-	0.89***	-	0.62***	0.62***
BLY	-	-	-	0.70***	-	0.70***

Note **p<0.05, ***p<0.01
DERS = Development of enterprise resource system, FCD = Focusing on competitive differentiation, CCE = Competency and Capability of Entrepreneur, CRM = Customer Relationship Management, BLY = Brand Loyalty, BP = Business Performance

5. DISCUSSION

Based on hypothesis 1, DERS had a positive effect on FED, and the study results confirmed this hypothesis. The development of an enterprise resource system reflects an organization's capability to establish a system and formulate plans for resource utilization, encompassing the business operations of private hospitals. The creation of an organizational

resource database contributes to the formulation of policies aimed at fostering competitive differentiation within each organization. This aligns with the findings of Mosweu & Ngoepe (2021), highlighting that a well-developed resource management system utilizing technology enhances service business operations, providing management excellence over competitors. Shohet & Nobili's (2016) study further supports this, emphasizing that the implementation of a resource management system using information technology enables the integration of customer data, facilitating analysis and product creation tailored to customer demands based on available resources. In conclusion, an enterprise resource planning system, by leveraging technology to connect diverse resources and systematically analyze customer demands, facilitates the streamlined production of varied products and services.

Based on hypothesis 2, CCE had a positive effect on FCD, and the study confirmed this hypothesis. The competency and capability of entrepreneurs plays a significant role in influencing the transformation of the healthcare business, necessitating an understanding of environmental analysis to create business opportunities. This is in line with Clough et al.'s (2019) research, which highlights that individuals with entrepreneurial competence exhibit traits such as independence in management, innovation, risk-taking, competitiveness, and proactive work. These competencies confer competitive advantages, foster new business strategies, and promote competitive differentiation within the organization. Blattner et al.'s (2021) study further supports this notion, emphasizing that entrepreneurs with diverse competencies, particularly in innovation, introduce new products or services, showcasing adept planning and decision-making in investments. By adopting innovative knowledge and technology to mitigate risks, entrepreneurs contribute to business advantages, positioning themselves as leaders committed to differentiation over competitors.

Based on hypothesis 3, DERS had a positive effect on BP, and the study findings supported this hypothesis. The results indicate that effective assets management in private hospitals, focusing on planning and organizing information flow and communication with stakeholders, in addition to enterprise resource planning, facilitates the utilization of shared foundational computing across the organization. Anaya & Qutaishat (2022) emphasize that implementing a well-organized system and wisely planning resource utilization enhances organizational efficiency significantly. The establishment of a data storage system emerges as a critical resource for precisely analyzing customer demands, ensuring that customers perceive the exceptional features of products and services. Sislian & Jaegler (2020) underscore the significance of resource planning systems in increasing agility within organizational processes by utilizing information technology to link data on resource utilization across various divisions. Proper resource utilization leads to enhanced business operation efficiency, thereby gaining advantages and increasing organizational competitiveness. This, in turn, contributes to stable business performance in terms of profitability, customer base, and business expansion, supporting future growth.

Regarding hypothesis 4, CCE was not found to affect BP, and such a relationship was not supported by the study findings. The research rejected this hypothesis, emphasizing the rapidly changing business landscape and the continual need for entrepreneurs to adapt. Miller (1983) identifies three essential characteristics and capabilities for entrepreneurs-innovation creation, risk-taking, and proactive work-contributing to organizational success. However, the study results align with Nongyao et al.'s (2020) research, indicating that certain aspects of entrepreneurs' competency and capability, such as attention to learning, do not significantly impact business performance. Some entrepreneurs may be averse to taking risks or making decisions in uncertain situations, adversely affecting business operations. Moreover, the study found that the positive effect of entrepreneurs' competencies and capabilities on business performance was not observed, while other factors such as focused competitive differentiation,

customer-centric approaches, competitor-focused strategies, and the adoption of suitable strategies to impress customers were deemed essential for achieving business success.

Regarding hypothesis 5, FCD was shown to have a positive effect on CRM, as supported by the study's results. Focused competitive differentiation serves as a comprehensive business channel, integrating services from initial customer interaction to post-sales service. This resonates with Chaudhuri et al.'s (2022) research, highlighting that quality services upstream create distinctive business operations, evolving into a strength or identity for the organization. Focused competitive differentiation enhances product or service value, emphasizing development based on customer relationship management to elicit emotions and values through customer experiences. The utilization of customer data facilitates strategic analysis and planning across diverse communication channels. Gyemang & Emeagwali (2020) stress the significance of reliable communication channels and accessible product and service information. Swift and accurate responses, coupled with customers actively participating in understanding information, contribute to differentiated communication, establishing a noteworthy distinction to impress customers. This approach informs the creation of an effective customer relationship management strategy.

Regarding hypothesis 6, the positive effect of CRM on BLY, received support in the study's findings. CRM emerges as a crucial strategy for fostering relationships between customers and organizations, emphasizing service quality improvement to attain a competitive advantage. This strategic process encompasses planning, cultivating customer relationships, crafting experiences, and instilling value in products or services. Cao et al.'s (2021) study underscores that, in the current business landscape, successful businesses hinge on factors such as building customer relationships, delivering quality services, and promptly addressing customer demands. The emphasis is on achieving the highest level of customer satisfaction. Establishing and nurturing relationships between customers and organizations fosters an exchange of demands and the provision of excellent services, in turn fostering sustainable brand loyalty (Sameeni et al., 2022). Consequently, CRM stands as a pivotal process and strategy, instrumental in creating a competitive advantage and achieving profitability aligned with organizational goals.

In line with hypothesis 7, the positive effect of BLY on BP, was confirmed by the study's results. The research revealed that customer satisfaction and positive impressions, encompassing aspects such as medical treatments, pricing, personnel competence, technology, and communication accessibility, significantly influenced customer decisions in selecting services. This, in turn, leads to word-of-mouth promotion and the establishment of repeat customers. Pham & Vu (2019) emphasized the critical role of customer experiences in service quality and brand loyalty, where excellent services contribute to sustained business performance, customer retention, an expanded customer base, business growth, and increased revenue. Tang et al., (2023) further support this, highlighting the pivotal nature of customer loyalty in successful business operations, instilling confidence and faith in services, thereby ensuring continuous revenue generation, customer base expansion, increased revenue, and enhanced market share. Thus, brand loyalty serves as a crucial determinant influencing customer satisfaction, positive impressions, faith in service quality, and, subsequently, word-of-mouth promotion, organizational loyalty, business expansion, augmented customer base, higher revenue, and heightened market share, collectively ensuring sustained business operations.

5.1 Theoretical Contributions

The present study contributes significantly to theoretical advancements in the field by examining the relationships between various organizational factors. The theoretical

underpinning of the research is primarily grounded in the Resource-Based View (RBV) theory, shedding light on how organizations attain and sustain competitive advantages through the strategic utilization of resources. The study synthesizes empirical findings across multiple hypotheses, offering insights that enhance our understanding of key strategic elements.

In summary, the research makes significant theoretical contributions by extending and integrating various concepts into the RBV framework. By exploring the strategic roles of ergonomics, enterprise resource systems, competitive differentiation, entrepreneurial competency, customer relationship management, brand loyalty, and multidimensional business performance, the study enriches our understanding of how organizations leverage resources for sustained competitive advantage in dynamic business environments.

5.2 Practical Implications

Even though Thailand is a developing country, it boasts significant public health capabilities, especially in maintaining and providing excellent service. The country is home to medical personnel with high potential, modern tools, and certified standards in private hospitals, making it attractive for patients seeking quality care. Consequently, private hospitals in Thailand are highly competitive and have evolved to meet consumer needs. This research presents four important points for policymakers in the business operations of private hospital businesses in Thailand:

First, organizational executives should prioritize setting service quality standards, focusing on developing medical personnel with specific expertise, ensuring sufficient patient beds, and providing modern care tools. Second, there should be an emphasis on using information technology in patient treatment and care. Implementing an integrated information system will facilitate ease of work and efficiency. Third, private hospitals should establish policies targeting new customer groups, such as those with high purchasing power or foreign customers, by promoting new treatment and healthcare programs and focusing on quality treatment at appropriate prices. Fourth, organizations must use strategies to build customer relationships, emphasizing effective and empathetic communication processes and rapid response to needs, thereby creating satisfaction and a lasting impression for service recipients. Lastly, executives must demonstrate leadership, with the ability to plan and formulate new strategies, set clear goals, make courageous decisions, and focus on differentiating from competitors.

6. CONCLUSION

The study highlights key factors influencing the business performance of private hospitals in Thailand. Effective resource management systems, encompassing information technology, medical treatment procedures, appointment systems, and skilled personnel, are able to respond to public health system needs. Competitive differentiation efforts, offering utility, distinctiveness, cost-effectiveness, and diverse service channels, are crucial for success. Business success relies on entrepreneurial competency and capability in policy formulation, strategic planning, and organizational activities. Personnel must possess knowledge of meeting customer demands, necessitating tailored marketing models and customer relationship management strategies to enhance experiences, satisfaction, and impressions, fostering loyalty and repeat customers. Private hospitals, crucial for the country's economic development, have growth opportunities tied to both global and domestic economies. To capitalize on this, they must uphold medical standards, personnel expertise, and service speed to ensure customer retention and repeated utilization of services. Efficient resource planning and continuous differentiation efforts are essential, emphasizing the utilization of the competency and

capability of business operators to enhance profitability and gain the trust, confidence, faith, and loyalty of customers, for sustained business performance.

The study underscores several limitations that warrant consideration in subsequent research endeavors. This investigation employed a structural equation model (SEM) utilizing AMOS to ascertain the alignment of the conceptual framework with empirical data. This analytical process involved validating the theoretical proposition that the observed phenomenon adheres to the prescribed model through a conventional factor-based approach. However, a notable drawback stemming from this methodology is the susceptibility to overfitting bias, primarily arising from iterative model adjustments to optimize fit indices. The risk lies in the potential incongruity between a well-fitted model, as affirmed in the study, and its applicability to alternative datasets. Consequently, this undermines the generalizability and predictability of the proposed model. Furthermore, a noteworthy discrepancy exists between the methodology employed and the corresponding measurement models. Specifically, a factor model should align with factor-based SEM tools such as AMOS, while a composite model should be paired with composite-based SEM tools such as PLS or GSCA. Yet, only PLSc and IGSCA can effectively manage mixed constructs in a model, as they serve as unbiased estimators. It is imperative for future studies to address or control for this potential bias to enhance the robustness and validity of the findings.

Although the study contributes valuable insights into the relationships between various factors within the context of private hospitals, it is important to acknowledge certain limitations that may affect the generalizability and depth of the findings. The study recognizes the necessity for further exploration of the impacts of the actual performances of companies. The reliance on perceptual data provides a starting point, but a more comprehensive understanding would require an investigation into the tangible, measurable aspects of organizational performance. Future research endeavors should incorporate data sources that directly assess and quantify the real-world outcomes of the studied factors. Future research should consider other factors that may affect the business performance of private hospitals, such as external environmental factors, management system factors, organizational value factors, etc. A study should be conducted on the business performance models of private hospital businesses in Thailand by making an in-depth analysis and classification of hospital characteristics; for example, an analysis of the factors for success, healthcare service management classified by the size of hospitals, or the classification of hospitals by focused target groups. A qualitative research study should be conducted by interviewing a group of executives to confirm the qualitative data and to serve as a guideline for developing healthcare service businesses in Thailand accordingly.

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