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***Research Paper***

# The effect of institutional pressures and dynamic managerial capability on strategic renewal: The case of strategic agility and digital readiness as mediators in healthcare industry

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## Abstract

This research investigates the role of institutional pressures, dynamic managerial capabilities, strategic agility and digital readiness as mediating factors in the gap of the healthcare sector's post-pandemic digital transformation. This study employed strategic and managerial questionnaires involving 308 medium-sized private hospitals in Indonesia and LISREL 6.0 was used for the analysis. Findings indicated that strategic agility did not mediate dynamic managerial capability for strategic renewal. Moreover, the private healthcare sector was found to be influenced by pressures to imitate other hospitals and competitors, and digital readiness had a stronger mediating effect than strategic agility. The study enriches organization theory by investigating institutional pressures driving strategic renewal. It also enhances the literature on strategic management by exploring the mediating role of strategic agility and digital readiness in strategic change. Lastly, it highlights the association between digital readiness and managerial and organizational aspects resulting from strategic change and further emphasizes the need for integrated teams and digital health services in hospitals to achieve strategic renewal.

**Keywords:** Competitive Pressures, Strategic Agility, Digital Readiness, Strategic Renewal, Asian Healthcare, Hospitals

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# Introduction

Digital technology is reshaping businesses, especially with the COVID-19 pandemic accelerating its adoption across different sectors, even though the healthcare industry is lagging in embracing digital transformation (Iyanna et al., 2022). Within the Indonesian healthcare sector, the pandemic has fueled the adoption of telemedicine, prompting providers to innovate with contactless services, operational efficiency enhancements, and technologies like telehealth, virtual visits, chatbots, and healthcare applications (Hillyer, 2020; Hollander and Carr, 2020). In healthcare, digital technology is deemed crucial as it necessitates hospitals to actively pursue strategic renewal for competitiveness (Warner and Wäger, 2019). Yet, there is still a demand for cultivating flexibility by strategic agility and digital readiness (Doz and Kosonen, 2010; Gfrerer et al., 2021).

Hence, with strategic agility and digital readiness as the mediating factors, this study explores the interplay between institutional pressures, dynamic managerial capability, and strategic renewal in the Indonesian healthcare sector. Strategic renewal, as defined by Agarwal and Helfat (2009), involves the long-term refreshment of organizational attributes, and is crucial in the evolving healthcare industry (Mamduh, 2023; Warner and Wäger, 2019). Institutional pressures, as outlined by Dimaggio and Powell (1983), significantly shape healthcare organizations' responses and operations in Indonesia, compelling them to undergo digital transformation for enhanced accessibility and efficient medication deployment (Indonesia, 2024; Lin et al., 2020). Stakeholders' influence further underscores the impact of institutional pressures on organizational renewal (Nilsen et al., 2020).

Dynamic managerial capability, which is essential for effective leadership (Adner and Helfat, 2003; Hsieh et al., 2015), plays a pivotal role in driving strategic renewal within the Indonesian healthcare sector (Hodgkinson and Ferguson, 2023). This study introduces strategic agility and digital readiness as mediating variables, defining strategic agility as the ability to adapt strategy to changes in the business environment (Kale et al., 2019) and digital readiness as the willingness to create and apply new digital technology (Pirola et al., 2019). These factors act as mechanisms in healthcare organizations to navigate external pressures (Almas, 2022) and enhance managerial capability for achieving strategic renewal (Khan et al., 2021).

In particular, this study explores the impact of the resource-based view, dynamic managerial capability, and institutional theories on strategic renewal within a developing country during a pandemic (Gupta et al., 2020). The study emphasizes that dynamic managerial capability positively influences strategic agility by going through essential requirements like strategy management, resource orchestration, and critical decision-making (Acciarini et al., 2020; Heubeck and Meckl, 2021). Additionally, it extends prior research by utilizing the variable of digital readiness, and emphasizing the need for further exploration of digital transformation in the healthcare industry beyond traditional assessments of digital maturity in healthcare companies (Iyanna et al., 2022; Liu et al., 2022).

This study seeks to provide a comprehensive understanding of the interaction between institutional pressures and dynamic managerial capabilities within the private healthcare sector of an under-researched country like Indonesia by focusing on its

digital readiness and strategic agility on strategic renewal, as highlighted by Juliana (2022). The study focuses on Indonesia's private healthcare sector due to its decision-making autonomy, independence from government funding, and adaptability to evolving patient preferences (Febriani, 2024). As digital startups add complexity (Kurniawan, 2022), the study further emphasizes the importance of private hospitals using their resources to offer patient autonomy amid digital advancements (Rachman, 2023).

## Literature Review

This study focuses on hospitals due to the Indonesian Private Hospital Association's initiative, which urges private hospitals to address healthcare system transformation amidst regional disparities (Kurniawan, 2022). However, they face challenges like fragmented information systems, inaccurate data recording, and a lack of standardization (Teramedik, 2022). This study explores how digital readiness and strategic agility influence private hospitals' transformation success.

Data from CEIC, a provider of business information, indicates a notable annual rise in the number of hospitals in Indonesia. (Putri, 2023). Consequently, research on digital transformation challenges becomes compelling, especially given issues like capability unpreparedness and poorly managed data systems. Private hospitals dominate the healthcare landscape, comprising 56.37% of total units, with Type B and C hospitals being the most prevalent (Kusnandar, 2019; Rizaty, 2024). Therefore, the study concentrates on Type B (200 beds) and Type C (100 beds) hospitals to investigate the influence of institutional pressure, dynamic managerial capabilities, strategic agility, and digital readiness on strategic renewal.

### Institutional Pressures

New institutionalism is utilized and rooted in the economic studies of organizations to explain how firms strategically respond to societal principles and avoid penalties (DiMaggio and Powell, 1983; Meyer and Rowan, 1977). It emphasizes the influence of internal factors on strategic behavior within firms, as well as the impact of normative, coercive, and mimetic pressures on organizational responses (Lewis et al., 2019; Lin et al., 2020). Normative pressures stem from associations within firms like the media and trade unions. Meanwhile, coercive pressures come from external stakeholders such as the government. Mimetic pressures arise from competition between firms (Latan et al., 2018).

### Dynamic Managerial Capabilities

Drawing from Teece et al. (1997), dynamic capabilities encompass strategic changes within firms (Helfat and Winter, 2011). Adner and Helfat (2003) further articulate dynamic managerial capabilities (DMC) as the capacity for leaders to build, integrate, and reconfigure organizational resources and competencies (Helfat et al., 2007). The pivotal role of dynamic managerial capabilities in the firms' strategic renewal is emphasized by Agarwal and Helfat (2009). Additionally, Adner and Helfat (2003), have identified three foundational elements for dynamic managerial capabilities: managerial cognition, managerial social capital, and managerial human capital. All

three elements are interlinked and crucial for directing strategic change (Helfat and Martin, 2015a).

## Strategic Agility

Within organizations, agility requires a collection of meta-capabilities (Doz and Kosonen, 2008) and involves effective resource utilization and capability reconciliation (Chen and Chiang, 2011). This strategic agility strengthens commitment to strategy and helps leaders and executive teams achieve their objectives, which involves strategic sensitivity, leadership unity, and resource fluidity (Doz & Kosonen, 2010). The rise of digital technologies, globalization, and government deregulation has created a hypercompetitive environment, enabling strategic agility to potentially drive business model transformation and foster technological capabilities and innovation within firms (Zhou and Wu, 2010).

## Digital Readiness

Strategic change is often associated with the literature on change readiness, which includes organizational capacity changes. Digital readiness is an extension of change readiness and involves technology-related challenges, behaviors, and capabilities, as well as the implementation of digital technologies and developments (Gfrerer et al., 2021). It encompasses individual and organizational levels, impacting employees, organizational structures, and operations (Schnasse et al., 2021). Individual levels involve personal beliefs and competence, while organizational levels involve shared beliefs and capabilities. Digital readiness involves leveraging technology to impact operational capabilities and behaviors by aligning human resources and digital business models with digital technologies and their capabilities (Parasuraman and Colby, 2015).

## Strategic Renewal

The concepts of 'strategic change' and 'strategic renewal' are closely related, presenting a challenge to delineate their boundaries. While previous studies often view strategic renewal from the perspective of strategic direction, strategic renewal should be considered as a separate research stream (Burgelman, 1991; Floyd and Lane, 2000). Strategic renewal involves the replacement or refreshment of critical organizational attributes with long-term implications (Agarwal and Helfat, 2009). This encompasses the renewal of the business model, collaborative approaches, and organizational culture. Firms innovate their business models through incremental investments and learning, establishing clear objectives and relationships tied to top leaders' strategic planning, and formulating strategic processes within the firms for application in daily routines (Müller and Kunisch, 2018).

## Institutional Pressures and Dynamic Managerial Capabilities

In Indonesia's private healthcare sector, organizations are driven by coercive, mimetic, and normative institutional pressures to adapt for survival, with neglect carrying severe consequences (Amalia et al., 2022; Lin et al., 2020). This aligns with theoretical perspectives emphasizing the role of dynamic managerial capabilities in navigating external influences (Fabregà et al., 2017; Nguyen et al., 2019). Shaped by institutional pressures, dynamic managerial capabilities actively influence strategic renewal and

foster innovative decision-making, echoing theoretical propositions on the dynamic nature of managerial capabilities in response to external pressures (Helfat and Martin, 2015a; Martin and Bachrach, 2018). These principles collectively underpin the study's hypothesis:

**H1** Institutional pressures have a positive impact on the dynamic managerial capabilities of an organization.

**Institutional Pressures and Strategic Agility**

In the context of Indonesia's private healthcare sector, the institutional theory posits that organizations experience normative, coercive, and mimetic pressures (DiMaggio and Powell, 1983), insulating their processes from individual influence (Amalia et al., 2022). Complementary to these institutional pressures, strategic agility is of paramount significance as it becomes crucial for adapting to evolving business circumstances and seizing opportunities amid changes in business models (Doz and Kosonen, 2010; Weber and Tarba, 2014). Strategic agility enables organizations to swiftly detect emerging threats and opportunities, adapting proactively to evolving external conditions (Gerald et al., 2020). Given the interplay of institutional pressures and strategic agility, it is essential to explore their dynamic relationship, and this has led to the following hypothesis:

**H2** Institutional pressures positively affect the strategic agility of the organization.

**Institutional Pressure and Digital Readiness**

This study enhances theoretical frameworks within Indonesia's private healthcare sector, focusing primarily on institutional theory. Drawing from DiMaggio and Powell (1983), the study explores the interplay of institutional pressures, showcasing their substantial impact on shaping the organizational environment within Indonesia's private healthcare setting (Hsia et al., 2019; Handayani et al., 2016). Additionally, organizational capabilities' insights are integrated, highlighting their role as inherent preparedness and structural foundations within the digital readiness paradigm (Gfrerer et al., 2021). Recognizing the significance of dynamic managerial capabilities in contributing to the sector's adaptability and strategic renewal, this study introduces a hypothesis extending to digital readiness and intertwining with strategic renewal (Cummings et al., 2016). Through this theoretical lens, the study posits the following hypothesis:

**H3** Institutional pressures positively affect individual and organizational digital readiness.

**Dynamic Managerial Capability and Strategic Agility**

As emphasized by Fabregà et al. (2017), organizations that are facing dynamic market challenges must swiftly adapt to survive. Dynamic managerial capabilities (DMC) are pivotal in assisting managers to navigate the evolving market landscape (Adner and Helfat, 2003; Helfat and Martin, 2015b). In Indonesia's private healthcare sector, the role of DMC is critical which is influenced by technological advancements and competitive pressures (Widyawan, 2022). Social capital, essential for resource

acquisition and integration (Blyler and Coff, 2003), is highlighted in this ever-changing landscape. Aligning established business models with new paradigms is critical for healthcare innovation. Strategic agility (SA) enables adept responses to digital challenges, informed decisions, and resource procurement for behavioral shifts, enhanced capabilities, and knowledge development (Cunha et al., 2020; Khan et al., 2021). Grounded in these specific challenges of Indonesia's private healthcare sector, we posit the following hypothesis:

**H4** Dynamic managerial capabilities positively affect organizational strategic agility.

**Dynamic Managerial Capabilities and Digital Readiness**

In Indonesia's private healthcare sector marked by technological advancements and competitive pressures (Widyawan, 2022), digital readiness, as elucidated by Nguyen et al., (2019), signifies a dedicated commitment to reconfigure existing assets for enduring outcomes (Jöhnk et al., 2021). Digital readiness is viewed as integral to organizational resources, encompassing both tangible and intangible elements within the evolving landscape of healthcare. Particularly pertinent is the role of a digital culture, highlighted by Hartmann, (2006), in shaping the adoption of digital technologies by organizational members. In this context, the proposed hypothesis is made:

**H5** Dynamic managerial capabilities positively affect organizational digital readiness.

**Strategic Agility and Strategic Renewal**

Building upon the foundations of organizational agility theories on strategic management, our hypothesis posits that strategic agility, encompassing elements of strategic sensitivity, leadership unity, and resource fluidity, plays a pivotal role in shaping organizational responses to dynamic environments. Strategic agility is essential for organizations to swiftly adapt to changing circumstances, particularly in the digital era where responsiveness to emerging opportunities and challenges is crucial (Akgün et al., 2012; Troise et al., 2022). In the context of Indonesia's private healthcare sector, Muhajir et al. (2023) emphasize the indispensability of strategic agility for effective digital transformation, aligning with the theoretical tenets of agility in organizational settings. Thus, our hypothesis is formed:

**H6** Strategic agility positively affects the strategic renewal within an organization.

**Strategic Agility and Digital Readiness**

The critical role of strategic agility in organizational transformation is underscored by Doz and Kosonen (2010) and Arbussa et al. (2017). As organizations confront strategic disruptions, continuous adaptation of business models becomes imperative, positioning strategic agility as a pivotal element (Doz and Kosonen, 2010). Strategic agility facilitates business model innovation and orchestrates strategic revitalization (Warner and Wäger, 2019). In the specific context of Indonesia's private healthcare sector marked by technological advancements and competitive pressures (Widyawan, 2022), strategic agility emerges as a key driver for strategic renewal. It is closely linked to

collaborative innovation capability (Agarwal and Selen, 2009). Although it is not directly intertwined with collaborative innovation capability, strategic agility influences collaboration dynamics (Lee, 2004) and innovative capabilities (Cai et al., 2019) in isolation. Additionally, it impacts the revitalization of digital culture by fostering a robust digital adoption culture within organizations (Carvalho et al., 2019). Building on these considerations, the following hypothesis is proposed:

**H7** Strategic agility positively affects digital readiness within an organization.

**Digital Readiness and Strategic Renewal**

Digital transformation success relies on organizational readiness and legitimacy through belief systems (Hinings et al., 2018). Leadership is crucial in cultivating readiness and aligning stakeholders (Sainger, 2018). It drives organizational adaptability and anticipates trends, resource use, and business model innovation (Guo et al., 2016), while also being linked to strategic renewal (Warner and Wäger, 2019). With the technological advancements and competition within Indonesia's private healthcare sector (Widyawan, 2022), adaptability is pivotal for strategic renewal, and digital readiness is deemed crucial. Digital readiness influences collaborative renewal and fosters trust and motivation (Fawcett et al., 2012). Trust in digital readiness relies on shared beliefs and individual convictions, evaluating skills and motivation in digital adoption (Gfrerer et al., 2021). Consequently, we propose the following hypothesis:

**H8** Digital readiness positively affects organizational strategic renewal.

**Strategic Agility as a Mediator**

As a transformative mediator, strategic agility is vital for organizations to navigate dynamic environmental pressures and achieve strategic renewal (Cunha et al., 2020). This capability enables rapid adaptation, resource reconfiguration, and cost reduction, which in turn ensures organizational health (Humaidan and Sabatier, 2017; Xing et al., 2020). Framed within institutional theory, strategic agility serves as the central conduit for organizations to transform structures and actions in response to dynamic environmental forces. Strategic agility mediates between organizations and their dynamic environments (AlNuaimi et al., 2022; Reed, 2021). In the context of Indonesia's private healthcare sector, Muhajir et al. (2023) emphasize the indispensable role of strategic agility in facilitating an effective digital transformation amidst external pressures like the government's digital blueprint (Indonesia, 2024) and uncertainties from digital disruptions (Baderi, 2018). Furthermore, dynamic managerial capabilities involving human resource management (Barahma et al., 2021) and collaboration are vital. This can be seen from successful partnerships like the collaboration with Schneider Electric for real-time electricity monitoring in Indonesian private hospitals. This context leads to the following hypothesis:

**H9** Strategic agility positively mediates the relationship between institutional pressures and strategic renewal.

**H10** Strategic agility positively mediates the relationship between dynamic managerial capabilities and strategic renewal.

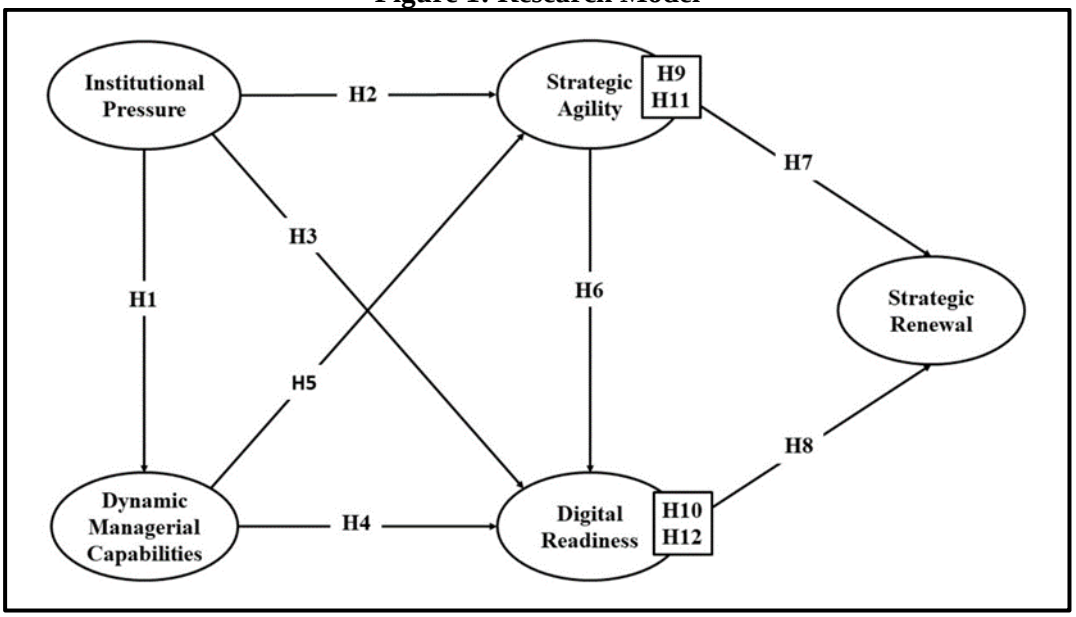
## Digital Readiness as a Mediator

Institutional theory highlights normative, coercive, and mimetic pressures as influential factors in the organizational environment (DiMaggio & Powell, 1983; Hsia et al., 2019). Through an institutional lens, digital readiness focuses on individual preparedness, including beliefs and competencies, which brings an impact on the organizational readiness for technology adoption (Gfrerer et al., 2021). Dynamic managerial capabilities provide a link between digital readiness and strategic renewal by assessing an organization's ability to adapt existing resources to evolving digital landscapes (Teece, 2018; 2015). For Indonesia's healthcare sector, dynamic managerial capabilities are crucial as they enable organizations to effectively influence digital readiness while preserving essential resources for strategic renewal. As reported in the Kompas newspaper, Arlinta (2021) stated that human resources is a crucial element in ensuring digital readiness in Indonesian hospitals. Moreover, the adept management of human capital, social capital, and managerial cognition enhances the likelihood of success in strategic renewal by digital readiness. This aligns with the assertion of Zia et al. (2023) that social capital is pivotal for success in this endeavor. This context-rich theoretical foundation leads to the following hypothesis:

**H11** Digital readiness positively mediates the relationship between institutional pressures and strategic renewal.

**H12** Digital readiness positively mediates the relationship between dynamic managerial capabilities and strategic renewal.

**Figure 1: Research Model**



# Methodology

## Measurement and Pre-test

A six-point Likert scale, ranging from "strongly disagree" to "strongly agree," was employed to gauge responses to all items in the questionnaires. This choice aimed to mitigate the inclination of respondents to opt for the midpoint (i.e., Scale 3) and enhance the reliability of gathered data (Chomeya, 2020; Leung, 2011). Moreover, treating ordinal variables with five or more categories as continuous was deemed appropriate for the study (Rhemtulla et al., 2012).

The scales used in this research were devised based on previous studies and subsequently adapted to the specific healthcare context in Indonesia. Institutional pressure was measured using nine items developed by Lin et al. (2020). It includes three components which are coercive pressure, mimetic pressure, and normative pressure. Dynamic managerial capabilities were measured using the 19 items adopted from Heubeck and Meckl (2021). It consists of three components managerial human capital, social capital, and managerial cognitions. Strategic agility was measured using the 13 items adopted from Reed (2021). It includes three components resource fluidity, leadership unity, and strategic sensitivity.

Meanwhile, the indicator of digital readiness was marked through the 15 items from Gfrerer et al. (2021). It includes four components: individual belief, competence, shared belief, and organizational capabilities. Lastly, the variable of strategic renewal has a scale of measurement with 15 items. It consists of three components which are renewal of the business model, collaborative approach, and digital culture. To measure the renewal of the business model, Bhatti et al. (2021) were used through the concept of business model innovation. For the renewal of the collaborative approach, Wang et al. (2017) measurement items were used by using the concept of collaborative innovation capability (Agarwal and Selen, 2009). As for the renewal of digital culture, Caro et al. (2020) measurements were employed by using the concept of digital organizational culture. The resulting questionnaire comprised 107 indicators derived from twelve dimensions across five variables.

Before the main study, these scales underwent rigorous evaluation by academic experts. To evaluate reliability and validity, the questionnaires were initially pre-tested among 32 hospitals through convenience sampling. Validity was assessed via factor analysis utilizing the principal axis factoring (PAF) extraction method. Each dimension's reliability was determined using the Cronbach Alpha criterion. While 17 out of 107 indicators did not initially meet the validity requirements, they were retained following revisions aimed at improving their wording and structure, a practice considered acceptable for enhancing the validity aspect (Vellis, 2017). Reliability criteria were met, with Cronbach Alpha values falling within the range of 0.563 to 0.924. Even the lowest Cronbach Alpha score, while close to 0.60, remained acceptable for exploratory research purposes (Hinton et al., 2014; Taber, 2018).

## Sampling and Data Collection

This study focuses on analyzing medium-sized private hospitals in Indonesia, specifically Types B and C, which share similar medical infrastructure but differ in their

sub-specialized services, as per Health Ministry Regulation No. 3 in 2020. Anugerah (2023) notes that larger financially independent hospitals in major cities are more ready for digital adoption. The research excludes Type A and Type D hospitals due to limited digital infrastructure and governance control. Private hospitals in Indonesia have shown proactive responses to the development of telemedicine. In 2022, there were 192 Type B private hospitals and 1103 Type C private hospitals (Azizah, 2022), forming the basis for selecting the research samples. Non-probability sampling, specifically snowball sampling, was employed to select a minimum sample size of 306 hospitals, determined according to Krejcie and Morgan's (1970) table.

The respondents were categorized into two groups: top executives and managerial personnel. The former possessed a strategic overview of hospital operations, while the latter had practical insights into the digital challenges faced by hospitals. Top executives were presented with 37 questions pertaining to dimensions such as strategic sensitivity, renewal of business model, collaboration approach, digital culture, and coercive, mimetic, and normative pressures. Managerial personnel received 70 questions covering dimensions like dynamic managerial capability, digital readiness, resource fluidity, and leadership unity. A total of 386 questionnaires were distributed to account for potential filling errors and non-returns. The survey yielded a response rate of 86.79%, with 308 valid data sets obtained from the 335 collected due to various factors, including respondents not meeting position or hospital-type requirements.

To address the potential issue of common method variance, we employed Harman's single-factor test, a recognized method to assess its impact on research findings (Podsakoff et al., 2003). The outcome of this analysis revealed that a 32.6% variance was explained by a single-factor extraction. This value remains below the established threshold of 50.0%, indicating the absence of a common method variance issue. Additionally, as suggested by Groves and Peytcheva (2008), we conducted a non-response test using a t-test to examine whether there were significant differences in the respondents' answers across the survey period. The results of this calculation demonstrated that there were no statistically significant differences in the respondents' answers over time.

## Data Analysis

The data obtained from the survey underwent statistical analysis employing SPSS 26 and Lisrel 8.8. Two distinct statistical analyses were conducted: Confirmatory Factor Analysis (CFA) and Covariance-based Structural Equation Modelling (CB-SEM). CFA was employed to validate or modify the proposed structure of variables. The model used in this study involves higher-order constructs, which enable the modeling of a construct or variable at a more abstract, higher-level dimension and its corresponding concrete lower-order subdimensions (Sarstedt et al., 2019).

To assess the relationships between variables, a two-stage methodological approach was adopted, involving the extraction of latent variable scores for each dimension (Sarstedt et al., 2019; Wetzels et al., 2009). This approach utilizes multiple items in the second stage, allowing for the application of various criteria to assess the structural model. To investigate the potential mediation effects, the conservative Sobel test was utilized.

# Results

## Descriptive Characteristics of Unit Analysis

The study was carried out over a span of five months, from December 2022 to April 2023. In terms of hospital size, the majority belonged to the medium-sized private hospitals category with 100 hospital beds or Type C (82.79%). Geographically, while a significant portion of the hospitals were located in the Java and Bali regions (71.43%), the sample encompassed hospitals from all major islands in Indonesia. The participants mainly comprised members of the Board of Directors and Managers, accounting for 76.95% and 59.09% of the respondents for the first and second questionnaires respectively. Detailed statistics on the distribution of demographic variables are presented in Table 1.

**Table 1: Descriptive Statistics of Unit Analysis**

| Characteristics | Number | % |
|---|---|---|
| Type of Hospital | | |
| Type B | 53(200) | 17.21 |
| Type C | 255(100) | 82.79 |
| Location | | |
| Java & Bali | 220 | 71.43 |
| Sumatera | 54 | 17.53 |
| Kalimantan | 17 | 5.52 |
| Sulawesi | 16 | 5.19 |
| Papua | 1 | 0.32 |
| Hospital representative at high-level executive for the first questionnaire | | |
| Board of Directors/Management | 237 | 76.95 |
| Division Head/Manager | 44 | 14.29 |
| Owner | 17 | 5.52 |
| Commissioner/Board | 4 | 1.95 |
| Other Executive Members | 6 | 1.30 |
| Hospital representative at managerial staff for the second questionnaire | | |
| Manager | 222 | 72.08 |
| Pharmacist | 84 | 27.27 |
| Other Senior Leader | 2 | 0.65 |

**Note:** The bracket shows the number of hospital beds in the type of the hospital

## Result of Structural Model Analysis

SEM is particularly sensitive to data distributions, and as such, multivariate normality was assessed using the Critical Ratio (CR) kurtosis score (Kline, 2015). The multivariate normality test yielded a CR value of 332.871 (p-value < 0.05), significantly deviating from the maximum threshold of 5. Consequently, it can be determined that the assumption of multivariate normality is not met, which means that the Maximum Likelihood estimation method cannot be applied. Therefore, a more robust method suited for non-normal data conditions, specifically Weighted Least Square, was employed.

Furthermore, the presence of multicollinearity in the SEM model was examined, which

is an important consideration (Gefen et al., 2000). The Variance Inflation Factor (VIF) parameter was utilized for this purpose (Hair, 2018). The VIF values for the indicators were calculated and ranged from 1.691 to 8.488, all falling within reasonable limits (below 10), indicating that multicollinearity was not a concern in this study.

## Measurement Model

The evaluation of the model's variables was carried out through Confirmatory Factor Analysis (CFA) following the guidelines of Hair et al. (2014). The assessment of the measurement model in this research involved three key parameters: standardized factor loading (SFL), construct reliability (CR), and average variance extracted (AVE). These parameters were assessed at both the dimension level (first order) and the variable level (second order).

Following the CFA results and the removal of five indicators with SFL values below 0.50, all SFL indicators at the first order level fell within the range of 0.56 to 0.93, surpassing the minimum factor loading threshold of 0.50. The CR and AVE values for each dimension ranged from 0.82 to 0.94 and 0.51 to 0.80, respectively, exceeding the thresholds of 0.70 and 0.50, indicating acceptable reliability and validity for the first-order constructs. These latent variable scores (LVS) obtained from the first-order constructs were then used as indicators for the second-order constructs. At the second-order level, the CR values ranged from 0.62 to 0.95, and the AVE values ranged from 0.35 to 0.88. Following Fornell and Larcker (1981), an AVE value below 0.50 is still acceptable as long as CR exceeds 0.60. In summary, the results, whether at the first-order or second-order levels, demonstrate acceptable validity and reliability (Knekta et al., 2019; Purwanto et al., 2019). The detailed findings are provided in Table 2.

**Table 2: Results of CFA for Reliability and Validity**

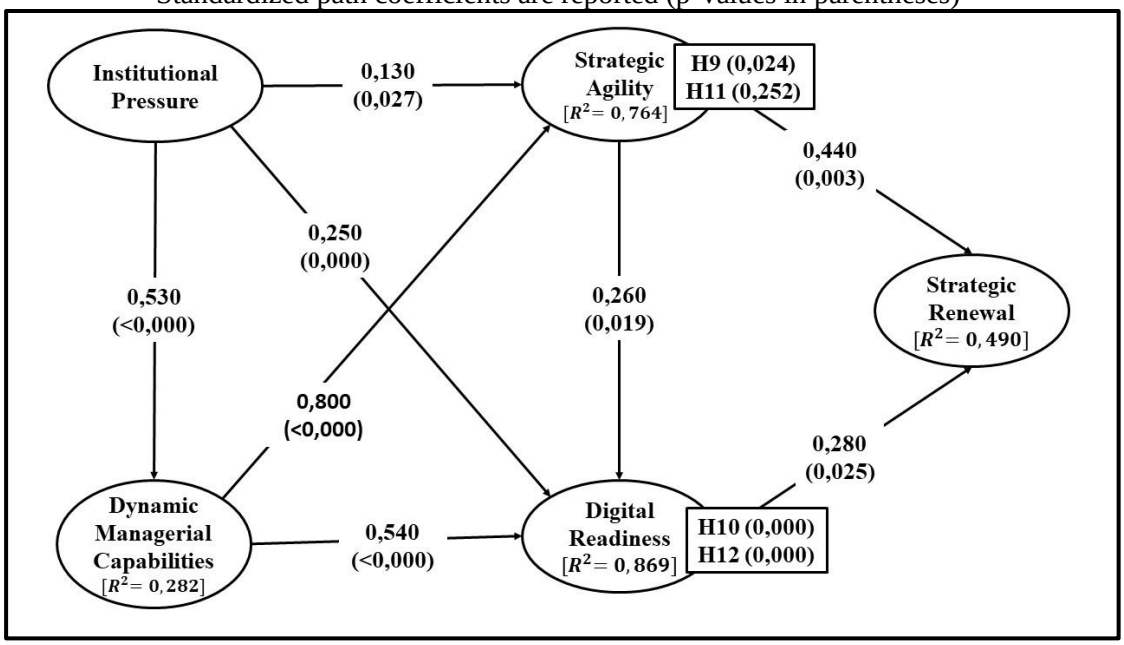
| Variable and Its Dimension | CR | AVE | VIF |
|---|---|---|---|
| IP – Variable | 0.619 | 0.353 | |
| NP | 0.926 | 0.806 | 4.294 |
| MP | 0.839 | 0.569 | 1.691 |
| CP | 0.820 | 0.604 | 2.815 |
| DMC – Variable | 0.959 | 0.887 | |
| MC | 0.943 | 0.603 | 3.891 |
| HC | 0.930 | 0.571 | 4.151 |
| SC | 0.925 | 0.531 | 5.336 |
| SA – Variable | 0.770 | 0.549 | |
| LU | 0.915 | 0.731 | 4.122 |
| RF | 0.830 | 0.624 | 1.589 |
| SS | 0.895 | 0.589 | 3.915 |
| DR – Variable | 0.898 | 0.689 | |
| CO | 0.896 | 0.596 | 4.296 |
| OC | 0.926 | 0.515 | 4.195 |
| SB | 0.868 | 0.570 | 4.462 |
| IB | 0.904 | 0.704 | 4.594 |
| SR – Variable | 0.933 | 0.823 | |
| RBM | 0.930 | 0.571 | 8.488 |
| RCA | 0.875 | 0.541 | 2.903 |
| RDC | 0.837 | 0.563 | 6.669 |

## Structural Model

Following the recommendations by Kline (2015), modifications were made to the model based on the evaluation of modification indices, including adding covariances between indicators, to achieve a better model fit result for this study. To assess the goodness of fit in the structural model, this research considered a minimum of one of three key goodness-of-fit parameters, namely absolute, incremental, and parsimony fit indices (Kline, 2016). Consequently, the goodness-of-fit indicators for the structural model are as follows: $\chi 2/df = 2.42$, RMSEA = 0.07, GFI = 0.83, IFI = 0.80, PGFI = 0.55, and PNFI = 0.50. These results, in line with findings from previous studies (e.g., MacCallum et al., 1996; Steiger, 2007; Byrne, 2010; Wang, 2014; Brown, 2015; Kline, 2016; Husain, 2019; Alizadeh-Siuki et al., 2020), indicate that the fit indices for this structural model remain within acceptable limits. The structural model's outcomes are visually presented in Figure 2.

**Figure 2: Result of structural modeling analysis**

Standardized path coefficients are reported (p-values in parentheses)




## Hypothesis Testing of Direct Effect

Table 3 presents the coefficients (β), t-values, and p-values for the direct effects of the variables, all of which were statistically significant. The IP variable had a positive and significant direct effect on DMC, SA, and DR (β=0.53, 0.13, and 0.25, respectively; $p < 0.05$), confirming the support for H1 to H3. Likewise, the DMC variable had a positive and significant direct effect on SA and DR (β=0.80 and 0.54, respectively; $p < 0.01$), supporting H4 and H5. Additionally, the SA variable had a positive and significant direct effect on DR and SR (β=0.26 and 0.444, respectively; $p < 0.05$), validating H6 and H7. Furthermore, the DR variable exhibited a positive and significant direct effect on SR (β=0.28; $p < 0.05$), indicating support for H8.

Regarding the coefficient of determination (R2), the values for DMC, SA, DR, and SR

were 0.282, 0.764, 0.869, and 0.490, respectively. Notably, the DR variable had the highest determination coefficient, implying that 86.90% of the variations in DR can be attributed to the influence of the IP, DMC, and SA variables.

**Table 3: Results of direct effect hypothesis testing**

| Hypothesis | Standardized path coefficient (β) | Std. Error | t-values | p-values | Conclusion |
|---|---|---|---|---|---|
| H1 | 0.530 | 0.079 | 6.710 | <0.000 | Accepted |
| H2 | 0.130 | 0.068 | 1.960 | 0.027 | Accepted |
| H3 | 0.250 | 0.073 | 3.410 | 0.000 | Accepted |
| H4 | 0.800 | 0.071 | 11.090 | <0.000 | Accepted |
| H5 | 0.540 | 0.108 | 4.980 | <0.000 | Accepted |
| H6 | 0.260 | 0.123 | 2.100 | 0.019 | Accepted |
| H7 | 0.440 | 0.158 | 2.790 | 0.003 | Accepted |
| H8 | 0.280 | 0.144 | 1.980 | 0.025 | Accepted |

## Hypothesis Testing of Mediation Effect

To evaluate the mediating effects of the digital readiness and strategic agility variables, we employed the z-test method, following the approach outlined by Baron and Kenny (1986) and MacKinnon et al. (2007). You can find a summary of the hypothesis testing for mediation effects in Table 4.

**Table 4: Results of mediation effect hypothesis testing**

| Hypothesis | Mediator | Sobel z-value | p-value | Conclusion |
|---|---|---|---|---|
| H9 | Strategic Agility | 2.227 | 0.024 | Accepted |
| H10 | Digital Readiness | 3.282 | 0.000 | Accepted |
| H11 | Strategic Agility | 1.145 | 0.252 | **Rejected** |
| H12 | Digital Readiness | 7.597 | 0.000 | Accepted |

The mediation effect of the SA variable in the relationship between IP and SR is significant ($z = 2.227$; $p < 0.05$), supporting H9. This suggests that the impact of IP on SR is enhanced when mediated by SA. Similarly, the mediation effect of DR in the relationship between IP and SR is significant ($z = 3.282$; $p < 0.05$), supporting H10. This demonstrates that the influence of IP on SR is strengthened when mediated by DR.

However, the mediating effect of the SA variable in the relationship between DMC and SR is not significant ($z = 1.145$; $p > 0.05$), leading to the rejection of H11. Conversely, the mediating effect of DR in the relationship between DMC and SR is significant ($z = 7.597$; $p < 0.05$), supporting H12. This indicates that the impact of DMC on SR is amplified when mediated by DR. Based on the finding, it indicates that H11 is rejected and is statistically not significant.

## Discussion

This study investigates the impact of institutional pressures and dynamic managerial capability on the strategic renewal process, considering the mediating factors of strategic agility and digital readiness. Rooted in institutional theory, the research introduces the innovative concept of digital readiness, extending the understanding of readiness in the context of strategic change. Notably, the study provides fresh insights into the influence of institutional pressures and dynamic managerial capability within the healthcare sector, highlighting their effects on strategic agility and digital readiness.

The findings underscore the substantial influence of competitive conditions on private healthcare sectors, particularly in comparison to professionalism and government regulations, and are consistent with prior research (Hsia et al., 2019). Competitive pressures stimulate private hospitals to reinforce their internal resources, including human resource management (Lewis et al., 2019). Additionally, the study reveals the constructive impact of institutional pressures on strategic agility, emphasizing the adaptive processes required amidst digital disruption, governance norms, and best practices. Furthermore, digital readiness plays a vital role, directly influencing strategic renewal, and creating pathways for successful digital transformation (Fitzgerald et al., 2014; Sainger, 2018) in the healthcare sector.

The study emphasizes the mediating effect of strategic agility in the connection between institutional pressures and strategic renewal, aligning with prior research (Cai et al., 2019). Strategic agility proves to be instrumental in helping organizations to effectively respond to institutional pressures by enabling rapid resource utilization (Doz and Kosonen, 2010; Reed, 2021). This novel perspective on the mediating role of strategic agility holds significant value as previous studies often overlooked its crucial role in these dynamics and are in contrast with the underexplored concept of digital readiness in the literature (Campanelli and Parreiras, 2015; Caro et al., 2020). The study focuses on the significance of hospital management's dedication to digital healthcare services and partnerships, highlighting digital readiness as a dominant mediator, surpassing the role of strategic agility. It also contributes by showcasing the complementary roles of strategic agility and digital readiness in healthcare management amid institutional pressures and dynamic managerial capabilities.

In summary, prompted by digital disruptions and the urgency of the COVID-19 pandemic, the healthcare sector is compelled to renew its strategies and integrate with digital health services (Heubeck and Meckl, 2021). Healthcare organizations must foster entrepreneurial management, identify opportunities, comprehend competition, and respond to evolving challenges for a successful transformation. The study emphasizes the roles of institutional pressures and dynamic managerial capabilities in facilitating agility for stability and fostering digital readiness for an effective digital transformation (Cai et al., 2019). Based on the findings, the mediation of strategic agility between dynamic managerial capabilities and strategic renewal lacks statistical significance as the p-value is higher than the threshold of 0.05 (White et al., 2022). This outcome reveals the limited uptake of digital health services in Indonesia's private healthcare sector, mirroring the low adoption rates and difficult access to resources. Institutional pressures positively influence dynamic managerial capabilities, fostering competencies, strategic agility, and digital readiness for commitment to digital health services. Notably, digital readiness emerges as a dominant mediator and encourages the

hospital management to embrace digital health services, while effectively navigating the dynamic environment for strategic renewal (Caro et al., 2020).

Nevertheless, this study has its limitations that need to be acknowledged. The study has exclusively examined medium-sized private hospitals in Indonesia with 200 beds (Type B) and 100 beds (Type C). Future research could examine Type D hospitals which lack facilities and Type A hospitals with sub-specialized services. These types differ not only in bed capacity but also in governance pressure for digital transformation (Meirina, 2022). Expanding respondent diversity and sample sizes in future research would enhance generalizability, such as including public hospitals or exploring various hospitals across the country. The study also observed a limited number of top management and head division representatives. Thus, future research could involve more leaders in their sample. Moreover, as this study has only covered a duration of two years (2020-2023), a longitudinal approach in future research could further examine post-pandemic dynamics and sustained impacts beyond 2025, offering a more comprehensive understanding of institutional pressures' effects.

## Implications

This study makes significant contributions to the fields of organization theory and strategic management by exploring the impact of institutional pressures and dynamic managerial capabilities on strategic renewal within the healthcare sector, particularly medium-sized private hospitals (Type B and C) in Indonesia. This study expands on institutional pressures and managerial capabilities, applying them to healthcare. Competitive conditions drive strategic renewal and digital health adoption. It underscores the link between agility and renewal, which is crucial for adaptive responses. Strategic agility mediates institutional pressures, not managerial capabilities. Digital readiness emerges as a vital factor in strategic renewal.

## Practical Implications for Asian Business

This study provides valuable insights into achieving strategic renewal within the healthcare sector, focusing specifically on an Asian country like Indonesia. Notably, Asia's digital health ecosystems are experiencing rapid and unconventional growth, as emphasized in Baur et al.'s (2021) work. The 14th ASEAN Ministers Responsible for Information Conference acknowledges ASEAN's digital transformation and citizens' readiness for the digital era. ASEAN's strategies are vital for its success in the global digital economy. Digitalization benefits ASEAN societies, aiding growth in Indonesia's healthcare sector. This research provides practical insights into challenges and opportunities in Asian private healthcare.

In developing countries like Indonesia, private hospitals face competitive pressure to adopt digital health services in response to industry advancements. For instance, Elang Medika Corpora (EMC) hospitals have emulated the success of Rumah Sakit Pondok Indah (RSPI), which achieved HIMSS Electronic Medical Record Adoption Model (EMRAM) level six validation in 2022, prompting EMC hospitals to pursue the concept of Smart Hospitals (Rahayu, 2022). This competitive landscape underscores the need for hospital management to understand digital services, the competitive environment,

and customer demands when formulating digital transformation strategies.

The study emphasizes the pivotal role of human resource management in private hospitals in Indonesia, particularly in the context of digital transformation. Effective management of human resources is linked to improved knowledge, skills, creativity, and motivation within the healthcare service sector (Tejanagara et al., 2022). Private hospitals are investing in staff development by training to enhance digital readiness, enabling efficient utilization of digital services, in response to technological advancements such as cashless telemedicine services and healthcare applications (Kurniawan, 2022; Endradita, 2022). Additionally, hospital management is leveraging digital technologies for partnerships to enhance healthcare service quality and conducting capability assessments for swift digital technology implementation (Iksan, 2023; Fazli, 2022; "Memperkuat Kapasitas Rumah Sakit Melalui Kolaborasi," 2019).

Thirdly, digital readiness emerges as a vital factor in the strategic renewal of hospitals. The study aligns with the Indonesian healthcare context, emphasizing the need for digital readiness in hospitals to initiate successful digital transformations and ensure efficient healthcare services (Kurniawan, 2021). In the absence of essential digital skills among hospital staff, operations may falter and lead to negative perceptions from customers (Zaharany et al., 2021). The hospital's management must prioritize digital readiness to meet strategic renewal requirements and successfully implement digital transformations using technology (Strategi Bisnis Rumah Sakit Pinter Melalui Optimalisasi Manajemen Inventaris Rumah Sakit, 2022). This underscores the significant impact of digital readiness on strategic renewal in hospitals undergoing digital transformation.

The study underscores the significance of strategic renewal in the healthcare sector. It emphasizes the need for partnerships and networks, a culture of collaborative digital innovation, and the development of competencies for effective digital service implementation. In the Indonesian context, hospitals are forming partnerships with service providers, such as the collaboration with Schneider Electric, which enables real-time electricity monitoring and proactive issue identification. The findings highlight the comprehensive approach required for digital transformation, encompassing technological aspects, organizational culture, and capabilities.

In conclusion, this study provides valuable guidance for private healthcare institutions operating in Asian countries, such as Indonesia, as they navigate the complexities of strategic renewal in the digital age. It underscores the pivotal role of competition, information transparency, digital readiness, and strategic partnerships in achieving successful digital transformations within the Asian healthcare sector.

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