# Enhancing Work Motivation Through Transformational Leadership and Change Readiness in Health Workers During Digital Era Transitions

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***Abstract***

*Digital transformation in healthcare requires adaptive leadership and a workforce equipped to navigate ongoing organizational change. This study investigates the relationship between transformational leadership, readiness for change, and work motivation among healthcare professionals in Indonesia. A cross-sectional quantitative design was employed, involving 216 participants from five private hospitals selected through purposive sampling. Data were collected using a validated questionnaire assessing transformational leadership, readiness for change, and work motivation, and analyzed using Spearman's rank correlation. Findings revealed that most respondents perceived transformational leadership at a moderate level, exhibited high readiness for change, and reported moderate to high levels of work motivation. Significant positive correlations were identified between transformational leadership and work motivation (r = 0.501; p < 0.001), transformational leadership and readiness for change (r = 0.528; p < 0.001), and between work motivation and readiness for change (r = 0.647; p < 0.001)These results underscore the pivotal role of transformational leadership in enhancing employee motivation and fostering change readiness within healthcare settings. Strengthening leadership competencies, particularly in inspirational motivation, individualized consideration, and intellectual stimulation, is vital for the successful implementation of digital transformation initiatives. The study highlights the importance of structured leadership development and institutional support in cultivating a motivated, adaptable, and innovation-oriented healthcare workforce.*

***Keyword: Digital Transformation, Healthcare Workforce, Readiness To Change, Transformational Leadership, Work Motivation***

## INTRODUCTION

Digital transformation has profoundly reshaped the healthcare landscape (Iyanna et al., 2022). Technologies such as telemedicine, electronic medical records (EMRs), and data-driven health applications have become integral to modern service delivery (Javaid et al., 2024). These innovations not only improve the efficiency of data management and interprofessional communication but also require healthcare professionals to develop robust digital competencies in order to remain relevant and provide high-quality care (Ferreira et al., 2025; Mauro et al., 2024).

However, the integration of digital technologies presents several challenges. Many healthcare workers face obstacles such as limited training, insufficient understanding of data

security, and resistance to change (Paul et al., 2023; Renukappa et al., 2022). Overcoming these barriers requires both individual and organizational readiness to maintain the continuity and quality of healthcare services (Handayani et al., 2021).

According to the World Health Organization (2020a), approximately 60% of healthcare workers in developing countries lack access to digital training, revealing a substantial skills gap. In Indonesia, data from the Ministry of Health indicate that the implementation of SIMRS and EMRs remains inconsistent, with fewer than 50% of healthcare workers familiar with EMRs (Aviat, 2024). These findings underscore the urgent need to strengthen digital readiness among healthcare personnel.

Leadership plays a pivotal role in cultivating digital readiness. In the digital era, leadership that fails to respond to technological advancements can impede organizational adaptability (Gil-gomez, 2023; Stoumpos et al., 2023). Ineffective change management and poor communication may compromise service quality, particularly when leaders lack training in transformative leadership styles (Sacavém et al., 2025; Vuchkovski et al., 2023; Ystaas et al., 2023). Moreover, insufficient leadership support can lead to reduced motivation and job satisfaction among healthcare workers (Arruum et al., 2024; Rousseau, 2022).

Transformational leadership has been widely recognized as an effective approach to addressing these challenges. This leadership style promotes a shared vision, encourages innovation, and enhances motivation through four core dimensions: idealized influence, inspirational motivation, individualized consideration, and intellectual stimulation (Bakker et al., 2023; Kludacz-Alessandri et al., 2025; Nair Subramanian & Banihashemi, 2024). Leaders who adopt this approach not only foster change readiness but also cultivate an organizational culture that embraces technological innovation (Bunjak et al., 2022; Mazzetti & Schaufeli, 2022; Nguyen et al., 2023; van Houwelingen et al., 2024).

Readiness for change is shaped by both individual factors, such as motivation, attitude, and learning capacity, and organizational conditions, including access to training and workplace culture (Ekawarna et al., 2022). Perceptions of technology also play a significant role: when healthcare workers view new technologies as burdensome, resistance to adoption tends to increase (Edo et al., 2023; S. Mansour & Nogues, 2022). Actively engaging healthcare personnel and providing targeted training are therefore essential for achieving successful digital transformation (Borges do Nascimento et al., 2023).

Work motivation is another critical determinant of technology adoption (A. Mansour et al., 2022; Vo et al., 2022). Healthcare workers who feel supported, empowered, and included in decision-making processes are more likely to exhibit high motivation and openness to

change (Mutmainah et al., 2023; Poudel et al., 2025; Raoush, 2023). Transformational leaders play a central role in cultivating this motivational climate.

Empirical research supports the connection between transformational leadership, change readiness, and work motivation. Herminingsih (2020) found that transformational leadership enhances work engagement in hospitals. Klein (2023) demonstrated that charisma and intellectual stimulation contribute positively to change readiness. Jun & Lee (2023) identified individual readiness as a crucial mediator between leadership style and work outcomes. Furthermore, transformational leadership has been shown to promote the adoption of digital technologies and to strengthen both psychological and structural readiness for change (Laakkonen et al., 2024; Schiuma et al., 2024). While most existing studies have focused on Western contexts, this study addresses the gap by examining the phenomenon in Indonesia—a Global South country with distinct cultural, organizational, and digitalization challenges. This research thus contributes novel insights to the global discourse on transformational leadership in healthcare.

This study is grounded in Bass's Transformational Leadership Theory (Bass, 1985), which posits that transformational leaders inspire, motivate, and intellectually stimulate their followers while providing individualized consideration. It also incorporates Lewin's Change Model, which delineates the stages of organizational transformation: unfreezing, changing, and refreezing (Sistare & Doan, 2022). The objective of this study is to examine the relationship between transformational leadership and readiness for change, in relation to work motivation among healthcare workers in Indonesian hospitals during the era of digital transformation.

**METHODS**

This study employed a quantitative cross-sectional design, conducted between February and April 2025 across five hospitals in Indonesia: Husada Hospital (Central Jakarta), Adi Husada Hospital (Surabaya), Dr. Oen Hospital Solo Baru, Telogorejo Hospital (Semarang), and Panti Nirmala Hospital (Malang). These hospitals were selected through purposive sampling, based on their varying levels of digital health system adoption and the availability of respondents actively engaged in technology-supported service delivery. Participants were recruited according to the following inclusion criteria: (1) health workers or technical personnel involved in either clinical or administrative service delivery; (2) willingness to participate in the study; and (3) a minimum of one year of work experience at their respective institutions. A total of 216 respondents participated in the study.

The data collection instrument consisted of a structured questionnaire designed to measure three core constructs: transformational leadership, work motivation, and readiness for change. Transformational leadership was assessed using a modified version of the Multifactor Leadership Questionnaire (MLQ), adapted through expert review and pilot testing. Validity testing yielded item-total correlations ranging from 0.703 to 0.899, all exceeding the critical r-value of 0.227. Cronbach's alpha reliability coefficients ranged from 0.976 to 0.984, indicating excellent internal consistency. All items were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The instrument included 15 items measuring transformational leadership, and 28 items each for work motivation and readiness for change. These items were developed to assess health workers' perceptions of leadership, motivation, and change readiness within the context of digital transformation.

Data were collected via Google Forms, distributed through internal hospital communication channels and healthcare worker group messaging platforms. Participation was anonymous and voluntary. Prior to statistical analysis, data normality was assessed using the Kolmogorov-Smirnov test, which indicated a non-normal distribution ($p < 0.05$). Consequently, Spearman's rank-order correlation was employed to examine the relationships between transformational leadership and work motivation, as well as between transformational leadership and readiness for change. All statistical analyses were conducted using SPSS software. Ethical approval for this study was obtained from the Research Ethics Committee of Nani Hasanuddin College of Health Science (Ethics Approval Number: 100/STIKES-NH/KEPK/I/2025). Additionally, administrative permissions were secured from each participating hospital prior to data collection.

## RESULT

**Demographic data overview of health workers**

### Table 1. Characteristics of Respondents

| Variabel | n | % |
|---|---|---|
| **Age (mean±SD)** | 38,31±9.53 | |
| **Gender** | | |
| Male | 41 | 19.0 |
| Female | 175 | 81.0 |
| **Education** | | |
| High School/Vocational School | 39 | 18.1 |
| Diploma | 110 | 50.9 |
| Bachelor | 14 | 6.5 |
| Profession | 41 | 19.0 |
| Magister | 11 | 5.1 |
| Specialist | 1 | .5 |
| **Discipline** | | |
| Medicine | 6 | 2.8 |

| Variabel | n | % |
|---|---|---|
| Nursing | 68 | 31.5 |
| Farmasi | 48 | 22.2 |
| Midwifery | 4 | 1.9 |
| Physiotherapy | 13 | 6.0 |
| Nutrition | 16 | 7.4 |
| Radiology | 5 | 2.3 |
| Medical Laboratory Technologist | 23 | 10.6 |
| Health Administration | 6 | 2.8 |
| Other | 27 | 12.5 |
| **Work Unit** | | |
| Medical Service Unit | 77 | 35.6 |
| Non-Medical/Administrative Support Units | 29 | 13.4 |
| Medical Support Unit | 110 | 50.9 |
| **Length of Work** | | |
| <5 years | 25 | 11.6 |
| 5-10 years | 57 | 26.4 |
| > 10 years | 134 | 62.0 |
| **Total** | 216 | 100.0 |

*(Source: Primary Data, 2025)*

As shown in Table 1, most respondents were female (81%) with a mean age of 38.3 years (SD = 9.5). The majority were affiliated with Dr. Oen Solo Baru Hospital (74.1%) and held a diploma degree (50.9%). In terms of professional background, nursing (31.5%) and pharmacy (22.2%) were the most common fields. Most respondents worked in medical support units (50.9%) and had over 10 years of work experience (62%).

**An overview of the Transformational Leadership by Hospital Health Workers**

**Table 2. Frequency Distribution by Category of Transformational Leadership of Healthcare Workers**

| Transformational Leadership | n | % |
|---|---|---|
| Very Low | 2 | 0.9 |
| Low | 12 | 5.6 |
| Medium | 151 | 69.9 |
| High | 33 | 15.3 |
| Very High | 18 | 8.3 |
| **Total** | **216** | **100.0** |

*(Source: Primary Data, 2025)*

As shown in Table 2, the majority of respondents (69.9%) rated transformational leadership at a medium level. High and very high ratings were reported by 15.3% and 8.3% of respondents, respectively, indicating a limited but notable presence of strong leadership. In contrast, only a small proportion perceived it as low (5.6%) or very low (0.9%). These findings highlight the need to strengthen leadership capacity to support digital transformation in healthcare settings.

**Overview of Work Motivation of Hospital Health Workers**

**Table 3. Frequency Distribution Based on Health Worker Motivation Categories**

| Motivation | n | % |
|---|---|---|
| Very Low | 0 | 0.0 |
| Low | 5 | 2.3 |
| Medium | 141 | 65.3 |
| High | 69 | 31.9 |
| Very High | 1 | 0.5 |
| Total | 216 | 100.0 |

*(Source: Primary Data, 2025)*

Table 3 shows that 65.3% of respondents reported medium motivation, while 31.9% and 0.5% reported high and very high motivation, respectively. Only 2.3% reported low motivation, and none were in the very low category. These results suggest an overall adequate motivation level, though further improvement remains essential in the context of healthcare digitalization.

**Overview of Readiness to Change of Hospital Health Workers**

**Table 4. Frequency Distribution Based on Readiness to Change Categories of Health Workers**

| Readiness to Change | n | % |
|---|---|---|
| Very Low | 0 | 0.0 |
| Low | 1 | 0.5 |
| Medium | 7 | 3.2 |
| High | 138 | 63.9 |
| Very High | 70 | 32.4 |
| **Total** | **216** | **100.0** |

*(Source: Primary Data, 2025)*

As shown in Table 4, most respondents demonstrated high (63.9%) or very high (32.4%) readiness to change. Only 3.2% reported medium readiness and 0.5% low, with none in the very low category. These findings indicate a strong overall readiness among health workers to adapt to digital transformation, although a small subset may still require targeted support or intervention.

**Correlation of Transformational Leadership, Motivation and Readiness to Change of Hospital Health Workers**

**Table 5. Correlation analysis of transformational leadership Motivation and Readiness to Change of Hospital Health Workers**

| Variable Pair | Spearman's r | p-value | Interpretation |
|---|---|---|---|
| Transformational Leadership – Motivation | 0.501 | <0.001 | Positive, strong correlation |
| Transformational Leadership − Readiness to Change | 0.528 | <0.001 | Positive, strong correlation |
| Motivation − Readiness to Change | 0.647 | <0.001 | Positive, strong correlation |

*Spearman rank correlations test*

Table 5 shows that all correlations among the three key variables were statistically significant ($p < 0.001$). the strongest correlation was observed between motivation and readiness to change (r= 0.647), followed by transformational leadership with readiness to

change (r= 0.528), and with motivation (r= 0.501), indicating positive inter-variable relationship.

## DISCUSSION

### Demographic data overview of health workers

The respondent profile reflects a multi-generational health workforce, primarily composed of individuals within the productive age group. This age diversity suggests varying levels of adaptability and digital fluency. Younger professionals tend to adopt technology more readily, whereas older staff may require sustained support due to established routines or limited exposure. These generational dynamics present both opportunities and challenges for digital transformation, highlighting the need for tailored training strategies (Fahmiyah et al., 2023; Ranasinghe et al., 2024).

Gender and educational background further shape workforce dynamics. The predominance of women in nursing, midwifery, and nutrition aligns with national and global trends, particularly in low- and middle-income countries (World Health Organization, 2020b). The prevalence of vocational and diploma-level qualifications reflects the operational structure of hospital-based care teams, especially in clinical roles. In contrast, higher academic degrees, less commonly represented, were associated with managerial or specialized positions. This pattern supports the findings of Alqudah et al (2022), who observed that education level influences perceptions of leadership, innovation, and readiness for change.

The diversity of professional backgrounds, particularly in nursing, pharmacy, and laboratory sciences, underscores the need for digital transformation and leadership initiatives that encompass all health professions, not just physicians. This aligns with the findings of Gedikci Ondogan et al (2023), who emphasized the importance of interprofessional collaboration in the integration of health information systems. Similarly, the concentration of respondents in service and support units reinforces the pivotal role of frontline staff in operationalizing digital platforms such as electronic medical records (EMRs) and hospital information systems (SIMRS). Jeilani & Hussein (2025) likewise observed that digital adoption is most effective among those embedded in routine clinical workflows.

The prevalence of long-serving health workers suggests organizational stability but may also indicate challenges in adapting to change. Cheng & Wang (2023) noted that extended tenure can foster resistance to digital innovation if not accompanied by continuous learning. Taken together, these respondent characteristics offer a representative snapshot of Indonesia's

health workforce and provide critical context for understanding their readiness for change and responsiveness to transformational leadership.

**An overview of the Transformational Leadership by Hospital Health Workers**

Respondents' moderate perceptions of transformational leadership suggest that while foundational traits, such as inspiration and charisma, may be present, implementation remains inconsistent. This indicates only partial alignment with the ideal model, which emphasizes shared vision, individualized consideration, and intellectual stimulation. In line with Bass's theory and Lewin's "unfreezing" stage (Sistare & Doan, 2022), these perceptions may reflect early-stage efforts to shift leadership culture. However, hierarchical and bureaucratic norms in Indonesian hospitals often limit two-way communication and staff empowerment (Atanassova et al., 2025).

Notably, a subset of respondents reported high levels of transformational leadership, likely reflecting stronger practices in units led by digitally literate or formally trained leaders (Qiao et al., 2024). Conversely, lower ratings, though limited, suggest variation across departments, particularly in administrative or support units (Kludacz-Alessandri et al., 2025). Contributing factors may include high workloads, insufficient leadership development, or generational mismatches. Nugroho & Claudia (2024) emphasize the importance of understanding generational dynamics to ensure leadership remains relevant and empowering. These findings underscore the need to institutionalize transformational leadership across all units to build motivation, strengthen change readiness, and support successful digital transformation.

**Overview of Work Motivation of Hospital Health Workers**

The predominance of moderate to high levels of work motivation is a positive indicator, particularly given the central role of motivation in enhancing adaptability during digital transformation. Motivated healthcare professionals are more likely to adopt new technologies, engage actively in training, and support changes in organizational policy. This aligns with previous research highlighting the influence of intrinsic motivation, such as professional pride and a sense of purpose, on openness to innovation and technological change (Sypniewska et al., 2023; Steenkamp et al., 2025).

Transformational leadership plays a critical role in reinforcing this process by fostering innovation, recognizing individual contributions, and providing personalized support (Karimi et al., 2023). Furthermore, motivation has been identified as a key mediator between leadership style and change readiness, with employees who feel empowered and valued demonstrating greater engagement with digital transformation initiatives (Jemimut et al., 2024).

**Overview of Change Readiness Hospital Health Workforce**

Change readiness is a critical psychological and behavioral factor in the success of digital transformation in healthcare. Among healthcare workers, it is shaped by perceptions of the benefits of change, involvement in transition processes, and the leadership style demonstrated. Individuals with high readiness are typically motivated, confident in learning new skills, and open to innovation, whereas those with low readiness may exhibit resistance or disengagement during digital implementation.

Previous studies have consistently demonstrated a strong association between transformational leadership and change readiness. Saif et al. (2024) identified individual readiness as a mediator between leadership style and workforce outcomes. Rehmani et al. (2023) and Syarif et al. (2024) emphasized that leadership approaches characterized by flexibility, support, and innovation significantly enhance both psychological and structural readiness. Klein (2023) further highlighted the importance of charisma and intellectual stimulation in preparing staff with limited digital experience. The findings of this study indicate a generally high level of readiness, likely driven by effective leadership, motivation, and exposure to digital training—although continued support remains essential to ensure inclusive and sustainable transformation.

**Correlation of Transformational Leadership, Motivation, and Readiness to Change of Hospital Health Workers**

The correlation analysis indicates a moderately strong positive relationship between transformational leadership and both work motivation and readiness to change, with the strongest correlation observed between motivation and readiness. These findings suggest that highly motivated healthcare workers are more likely to embrace, manage, and adapt to digital transformation—highlighting the mutually reinforcing roles of leadership and motivation in fostering change readiness.

This aligns with Bass's theory, which posits that transformational leadership, through charisma, inspirational motivation, individualized consideration, and intellectual stimulation, enhances the psychological conditions necessary for change(Ángeles López-Cabarcos et al., 2022; Ystaas et al., 2023). Transformational leaders foster trust, reduce resistance, and stimulate innovation, particularly in high-pressure environments such as hospitals (Fredberg & Pregmark, 2022; Islam et al., 2021). Empathy, recognition, and leader support further enhance staff motivation and morale (Alsadaan et al., 2023; Ramachandran et al., 2024; Qiao et al., 2024).

Work motivation also serves as a key mediator between leadership and change readiness. Individuals with high intrinsic motivation tend to exhibit greater openness to learning, innovation, and digital adoption(Saharudin et al., 2024; Chuang et al., 2025; Erfani et al., 2025). Inclusive and supportive leadership styles further reinforce this relationship by promoting psychological safety and adaptive capacity (AlNuaimi et al., 2022;  Veli Korkmaz et al., 2022; Kaur Bagga et al., 2023).

These findings illustrate a reinforcing triad: transformational leadership enhances motivation, which in turn strengthens readiness to change. Practical implications include the need for targeted leadership development programs focused on digital transformation, as supported byLaukka et al. (2022) and Ramadan et al. (2023). Future studies should consider longitudinal or mixed-method designs to examine how these variables evolve over time.

## CONCLUSION

Transformational leadership positively influences both work motivation and readiness to change among hospital healthcare workers, fostering greater adaptability in the face of digital transformation. Motivation emerged as a key psychological factor, underscoring the role of intrinsic drive in facilitating acceptance of organizational and technological change. These two variables, leadership and motivation, interact synergistically to cultivate a responsive and innovation-oriented workforce.

Based on these findings, leadership development programs that enhance transformational competencies, such as inspirational communication, individualized support, and intellectual stimulation, are essential for successfully navigating digital transitions. Given the study's cross-sectional design, future research employing longitudinal or mixed-method approaches is recommended to examine the evolving interplay between leadership, motivation, and change readiness over time. Overall, transformational leadership serves as a strategic foundation for building a resilient and future-ready healthcare workforce within Indonesian hospital settings.

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