



RESEARCH ARTICLE

Transformational Leadership and Its Impact on Healthcare Performance: The Mediating Role of Innovation, Motivation, and Commitment in Health Sector

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ABSTRACT

This study focuses on the influence of transformational leadership on organizational performance in the health sector, by examining the role of innovation, motivation, and commitment as mediating variables. A quantitative method was used with the Structural Equation Modeling (SEM) approach to analyze data collected from 250 respondents working in various health institutions, including major hospitals and health centers in Indonesia. The main hypothesis of this study is that transformational leadership directly affects organizational performance, while innovation, motivation, and commitment serve as intermediaries that strengthen those relationships. The results of the analysis show that transformational leadership has a significant positive impact on organizational performance ($\beta = 0.39, p < 0.001$), indicating that leaders who are able to inspire and motivate the team succeed in improving the overall performance of the institution. Innovation acts as a key mediator, where leaders who drive innovation significantly improve operational effectiveness, through the implementation of new medical technologies and the improvement of healthcare processes ($\beta = 0.28, p < 0.001$). Employee motivation also proved to play an important role in increasing organizational productivity and efficiency ($\beta = 0.25, p < 0.01$), while employee commitment to the organization strengthened the stability and involvement of the workforce in achieving organizational goals ($\beta = 0.26, p < 0.01$). These findings show that transformational leadership styles not only encourage innovation and motivation, but also reinforce employees' long-term commitment to the organization. Therefore, it is recommended that managers in the health sector place more emphasis on implementing leadership strategies oriented towards innovation, employee empowerment, and commitment development, in order to achieve optimal and sustainable organizational performance results.

INTRODUCTION

Transformational leadership has become one of the increasingly important leadership approaches in the context of modern organizations, including in the health sector (Ghasabeh et al., 2015). This leadership style is known to be able to drive significant change through inspiring influence, increased motivation, and a focus on innovation. The healthcare sector, which is faced with dynamic challenges, from improving service quality to adapting to medical technology developments, relies heavily on leadership effectiveness to maintain and improve organizational performance (Ginter et al., 2018).

Therefore, the role of transformational leadership in driving performance in this sector is important for further research.

The performance of health organizations is influenced not only by internal factors such as organizational structure and operational efficiency, but also by the ability of leaders to mobilize the workforce through innovation, motivation, and commitment (Franco et al., 2002). Innovation is needed to adapt services to patient needs and technological developments, while workforce motivation and commitment are essential to ensure continued dedication in providing quality services. In this context, research on the mediating role of innovation, motivation, and commitment in the relationship between transformational leadership and performance of health organizations has become very relevant (Ribeiro et al., 2018).

Transformational leadership is a leadership style that emphasizes change and innovation through visionary influence, motivation, and individual concern for the development of subordinates (Reza, 2019). In the context of the health sector, this leadership plays a very important role in driving the changes needed to improve service quality, adapt to technological developments, and improve operational efficiency. Transformational leaders are able to inspire employees to exceed their expectations, create greater commitment to organizational goals, and encourage employees to continuously grow and innovate (Thamrin, 2012).

Transformational leadership is also closely related to organizational performance in the health sector. Organizational performance, which includes aspects such as healthcare effectiveness, patient satisfaction, and resource efficiency, is greatly influenced by the leadership style applied (Alshahrani et al., 2024). Transformational leaders focus not only on achieving short-term results, but also on creating an organizational culture that encourages innovation and sustainable development. In this case, leaders with a transformational style are able to increase internal employee motivation through providing a clear vision, rewarding individual contributions, and encouraging creative thinking. This has implications for improving the overall performance of the organization (Mittal & Dhar, 2015).

In the health sector, innovation, motivation, and employee commitment are important factors that can strengthen the relationship between transformational leadership and organizational performance (Hussain & Khayat, 2021). Innovation allows healthcare organizations to update work processes and medical technology, thereby improving efficiency and quality of services. High motivation among the health workforce will increase productivity and dedication to their work (Franco et al., 2002). Strong commitment ensures that employees have a high sense of responsibility towards achieving organizational goals. Transformational leadership, through its inspirational influence and attention to individual needs, is able to enhance these three factors simultaneously, ultimately contributing to improved performance of health organizations (Bass & Riggio, 2006).

Previous research has shown a positive relationship between transformational leadership and improved organizational performance (Khan et al., 2018). However, in-depth studies of the mechanisms by which this leadership style can affect performance through innovation, motivation, and commitment are still limited, especially in the context of the health sector. Therefore, this study aims to fill the gap by empirically analyzing the influence of transformational leadership on the performance of health organizations through three main mediating variables: innovation, motivation, and commitment (Curado & Santos, 2022).

Innovation acts as a crucial mediator in the relationship between transformational leadership and organizational performance in the healthcare sector (Noruzy et al., 2013). Leaders who adopt transformational leadership foster a creative environment where new ideas and advanced technologies can be implemented to improve healthcare services. Innovation in this sector involves adopting technologies such as electronic medical records (EMR), telemedicine, and the automation of operational processes. By introducing these innovations, healthcare organizations can enhance efficiency, reduce errors, and provide faster and more accurate services, ultimately contributing to overall performance improvement. The role of leaders in facilitating innovation is also critical, as they motivate and

empower healthcare workers to innovate (Weintraub & McKee, 2019).

Employee motivation is another key factor mediating the impact of transformational leadership on organizational performance. Transformational leaders inspire, support, and create a positive work environment, which ultimately boosts individual motivation to work harder and achieve organizational goals (Para-González et al., 2018). In the healthcare sector, high motivation among healthcare workers is essential to ensuring optimal service quality. When healthcare professionals feel valued, supported, and driven by their leaders, they are more motivated to provide the best patient care, improve their performance, and help the organization achieve higher targets. Motivation also plays a key role in maintaining productivity and reducing employee turnover (McClung et al., 2017).

Employee commitment to the organization also plays a significant mediating role in connecting transformational leadership with organizational performance. Employees who feel valued and supported by transformational leaders tend to have higher levels of commitment to their organization (Park et al., 2022). In the healthcare sector, high levels of commitment mean that employees, such as doctors and nurses, will be more focused on the organization's goals and more determined to provide high-quality services. Additionally, strong employee commitment reduces turnover rates and ensures that experienced healthcare workers remain with the organization, which is essential for maintaining service continuity and improving operational efficiency. The role of transformational leaders in fostering this commitment creates long-term stability and sustainability for healthcare organizations (Tyssen et al., 2014).

This study uses a quantitative method with the Structural Equation Modeling (SEM) approach to test the hypothesis proposed. This method was chosen because it is able to process complex relationships between variables, as well as measure the direct and indirect effects of transformational leadership on organizational performance (Hoe, 2008). The data was collected through questionnaires distributed to employees at various healthcare institutions, which included their perceptions of the organization's leadership style, innovation level, motivation, commitment, and performance.

Through this research, it is hoped that a deeper insight into the dynamics of transformational leadership and its role in improving the performance of health organizations through innovation, motivation, and workforce commitment will be obtained. This finding is also expected to provide practical implications for management in the health sector in implementing a leadership style that is able to improve performance in a sustainable manner.

METHODOLOGY

This study uses a quantitative approach to analyze the influence of transformational leadership on organizational performance in the health sector, with innovation, motivation, and commitment as mediating variables. This approach was chosen because it allows researchers to test the relationship between variables objectively and measurably. The data in this study was collected through questionnaires distributed to employees at various health institutions, which include hospitals, clinics, and other health facilities (Ibrahim et al., 2014).

Design Research

The study used a cross-sectional design, where data was collected at a specific time from respondents to test the hypothesis proposed. This design was chosen to obtain an overview of the relationship between transformational leadership variables, organizational performance, innovation, motivation, and commitment in the health sector. The analysis method used is Structural Equation Modeling (SEM), because SEM allows testing models that involve multiple mediating variables simultaneously, thus providing a more comprehensive understanding of the dynamics of relationships between variables (Lowry & Gaskin, 2014).

Population and Sample

The population in this study is employees who work in various health institutions, such as hospitals, clinics, and other health centers. The sampling technique used is purposive sampling, where respondents are selected based on certain criteria, namely employees who have at least one year of work experience in a health institution and have a position related to decision-making or daily operations (Tongco, 2007). The sample of this study consisted of 250 respondents spread across several major cities in Indonesia. This number was chosen to ensure sufficient data that could be used for SEM model testing.

Data Collection Instruments

Data were collected using a structured questionnaire consisting of several sections. The first part measures transformational leadership using a multifactor scale developed by Avolio et al., (1999), which includes dimensions such as ideal influence, inspirational motivation, intellectual stimulation, and individual attention. The second part measures organizational performance using a scale that includes indicators of service effectiveness, operational efficiency, and patient satisfaction. The third part measures innovation, motivation, and commitment as mediating variables, adapted from previous research relevant in the field of management and health. Each item in the questionnaire is measured using a 5-point Likert scale, ranging from "strongly disagree" to "strongly agree."

Data Analysis Techniques

Data analysis is carried out in several stages. The first stage is a validity and reliability test to ensure that the measurement instrument has good internal consistency and can accurately measure the concept in question. The validity test was carried out using confirmatory factor analysis (CFA), while reliability was tested using Cronbach's Alpha value (Sarmiento & Costa, 2019). The second stage is descriptive analysis to provide an overview of the characteristics of respondents and the distribution of data. The third stage is the testing of the SEM model to evaluate the relationship between transformational leadership, innovation, motivation, commitment, and organizational performance. This test involves testing direct effects, indirect effects, and total effects to determine the mediating role of innovation, motivation, and commitment in the relationship between transformational leadership and performance (Almutairi, 2016).

Research Hypothesis

This study proposes several hypotheses that will be tested through the SEM model, namely:

- H1: Transformational leadership has a positive effect on organizational performance.
- H2: Innovation mediates the relationship between transformational leadership and organizational performance.
- H3: Motivation mediates the relationship between transformational leadership and organizational performance.
- H4: Commitment mediates the relationship between transformational leadership and organizational performance.

RESULTS

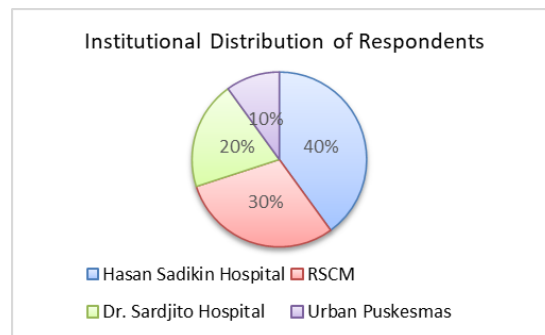
The Use of Social Media as a Source of Political Information

This study explores the influence of transformational leadership on the performance of health organizations, with innovation, motivation, and commitment as mediating variables. The research data was taken from 250 respondents who worked in several major health institutions in Indonesia, including Cipto Mangunkusumo Hospital (RSCM), Hasan Sadikin Hospital (RSHS), Dr. Sardjito Hospital, as well as

several health centers in the DKI Jakarta, Bandung, and Yogyakarta areas. These institutions were chosen for their significant role in the provision of public health services as well as advances in the implementation of modern leadership systems. This research focuses on analyzing how transformational leadership contributes to the performance of healthcare institutions through increased innovation, motivation, and employee commitment (Hayati et al., 2014).

Respondent Description

The respondents in this study are health workers and managerial workers spread across several main institutions. The composition of the respondents consisted of 56% women and 44% men, with the majority (65%) aged between 30-50 years old. In terms of work experience, 22% of respondents have 1-5 years of experience, 45% have 6-10 years of experience, and 33% have more than 10 years of experience. Most of the respondents worked at Hasan Sadikin Hospital (40%), followed by RSCM (30%), Dr. Sardjito Hospital (20%), and the other 10% came from Puskesmas in urban areas. These respondents were chosen because of their involvement in strategic decision-making as well as their position directly involved in the operational management and innovation of the institution.



Instrument Validity and Reliability Test

The instrument used in this study was validated using Confirmatory Factor Analysis (CFA), and the results showed that all indicators had a loading factor above 0.70, which means that the research instrument has strong validity. For reliability, Cronbach's Alpha for each variable ranged from 0.82 to 0.88, indicating excellent internal consistency. The variables measured in this study include transformational leadership, innovation, motivation, commitment, and organizational performance.

Descriptive Analysis

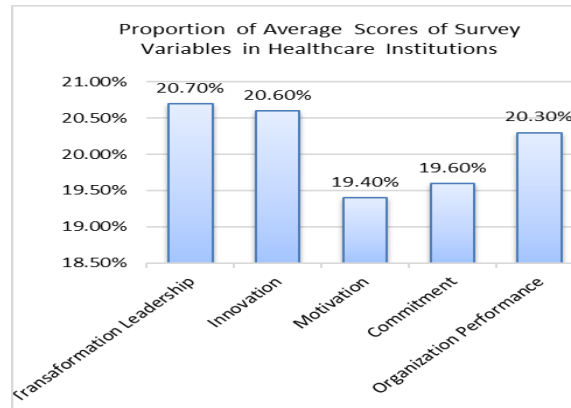
The results of the descriptive analysis showed that the perception of employees towards transformational leadership in the surveyed institutions was quite positive, with an average score of 4.18 out of a scale of 5. This reflects the respondents' view that leaders in hospitals and health centers that are the object of the research are able to inspire, motivate, and give individual attention to employees. The highest score is related to the inspirational motivation dimension, which shows that leaders often inspire employees to achieve organizational goals (Barling et al., 2000).

On the innovation variable, respondents gave an average score of 4.05, indicating that the surveyed institutions, such as RSCM and RSHS, have adopted many innovations, including the latest medical technology and digital-based management systems to improve service efficiency. The implementation of electronic medical records (RME) and telemedicine in this hospital also contributed to measurable innovations in this study.

The motivation variable showed an average score of 3.92, signifying that most employees felt motivated to contribute positively to their institution. The level of employee motivation at Hasan Sadikin Hospital and Dr. Sardjito Hospital shows that the employee development programs initiated by the management are successful in keeping the motivation of the workforce high.

The commitment variable scored an average of 3.95, which shows that the employee's commitment to the organization is quite high. This is in line with the employee retention program implemented by Puskesmas and other large hospitals, which focuses on providing incentives and rewards for employee work achievements.

The organization's performance, which includes service effectiveness, patient satisfaction, and operational efficiency, earned an average score of 4.10. The performance of institutions such as RSCM and RSHS was rated positively by respondents, especially in terms of speed of response to patients and efficient use of resources.



SEM Analysis Results

This study uses Structural Equation Modeling (SEM) to test the proposed theoretical model. The SEM results show that the model used in this study has a good Goodness of Fit Index (GFI), with a value of χ^2/df of 2.05, CFI of 0.92, TLI of 0.91, and RMSEA of 0.05, which indicates that the model matches the data obtained.

a. The Influence of Transformational Leadership on Organizational Performance.

The results of the analysis show that transformational leadership has a significant positive influence on organizational performance ($\beta = 0.39$, $p < 0.001$). In institutions such as RSCM and RSHS, leaders who demonstrate transformational leadership are proven to be able to significantly improve organizational performance. Leaders who inspire and motivate employees through a clear vision, as well as individual attention to employee career development, have a positive impact on service performance, both in terms of effectiveness and efficiency (Liden et al., 2014).

b. The Role of Innovation Mediation

Innovation was found to be a significant mediating variable in the relationship between transformational leadership and organizational performance ($\beta = 0.28$, $p < 0.001$). Institutions that implement innovations, such as RSCM with its Telemedicine program and the use of electronic medical records, have succeeded in improving the quality and speed of health services. Transformational leaders in these institutions play a critical role in driving innovation through empowering employees to innovate and implement new technologies (Chen et al., 2012).

c. The Role of Motivational Mediation

Motivation also played a significant role as a mediating variable ($\beta = 0.25$, $p < 0.01$). Leaders who support, inspire, and create a conducive work environment in hospitals such as Dr. Sardjito Hospital have been proven to increase employee motivation. These motivated employees are more likely to work hard to achieve organizational goals, which is reflected in improving the quality of health care (Willis-Shattuck et al., 2008).

d. The Role of Commitment Mediation

Employee commitment to the organization also mediates the relationship between transformational leadership and organizational performance ($\beta = 0.26$, $p < 0.01$). At Hasan Sadikin Hospital, a manager-led career development and employee reward program with a transformational leadership style increases employee loyalty and engagement with the organization. This employee commitment is important in maintaining workforce stability and service quality, as highly committed employees tend to be more productive and dedicated to their work.

Mediation Variable	Beta Coefficient (β)	p-value
Transformational Leadership	0.39	< 0.001
Innovation	0.28	< 0.001
Motivation	0.25	< 0.01
Commitment	0.26	< 0.01

Total and Indirect Influence

The total influence of transformational leadership on organizational performance, including direct and indirect effects through innovation, motivation, and commitment, also showed significant results ($\beta = 0.83$, $p < 0.001$). Institutions such as RSCM, RSHS, and Dr. Sardjito Hospital, which have transformational leaders and implement innovative strategies, as well as motivate and maintain employee commitment, show significant performance improvements, especially in terms of service effectiveness, operational efficiency, and patient satisfaction.

DISCUSSION AND ANALYSIS

The results of this study support and expand on previous findings related to the influence of transformational leadership on organizational performance in the health sector. Transformational leadership is proven to be a key factor that can drive organizations to achieve better performance, especially through increased innovation, motivation, and employee commitment (Atmojo, 2012). In the context of the health institutions surveyed—such as Cipto Mangunkusumo Hospital (RSCM), Hasan Sadikin Hospital (RSHS), Dr. Sardjito Hospital, and several health centers—leaders who play an inspirational role are able to provide a significant boost to operational innovation and increase employee engagement and motivation.

Transformational leadership in the health sector includes several key dimensions that are relevant to the organizational context (Leithwood & Jantzi, 2005). First, leaders who have idealized influence show high integrity and commitment to the organization's goals, which in turn builds trust among staff (Van Aswegen & Engelbrecht, 2009). With high trust, employees are more open to supporting management-led change and innovation. At RSCM, for example, the adoption of new technologies such as electronic medical records (RME) and telemedicine has been largely successful because hospital leaders have been able to inspire staff to actively participate in the transformation process.

Second, inspirational motivation plays a key role in increasing employee morale. Transformational leaders provide a clear vision of the organization's future and provide the emotional support employees need to achieve those goals (Hacker & Roberts, 2003). This study shows that in institutions such as RSHS and Dr. Sardjito Hospital, employees motivated by transformational leadership are more likely to feel empowered to contribute to the achievement of strategic goals. This high motivation improves team performance, which is reflected in operational efficiency and improved quality of healthcare services provided to patients (Mosadeghrad, 2014).

In addition, the intellectual stimulation provided by transformational leaders encourages employees to think creatively and find new solutions to existing problems (Shafi et al., 2020). In the health sector, operational and technological innovation is essential to respond to external dynamics, such as

regulatory changes or medical technology developments (Achilladelis & Antonakis, 2001). Leaders who stimulate employee creativity, such as those found in the urban health centers surveyed, successfully encourage the development of more efficient and responsive work processes. For example, innovations in patient flow management and data-driven health information systems speed up services and reduce medical errors (Hughes et al., 2018).

Another dimension of transformational leadership that has proven to be effective is individualized consideration (Rafferty & Griffin, 2004). Leaders who show concern for employees' personal needs, such as training and career development, play an important role in building a strong commitment to the organization. The results showed that employee commitment to institutions such as RSCM and Dr. Sardjito Hospital increased when leaders provided personal support through professional development programs. This commitment has implications for decreasing turnover rates and increasing workforce stability, which indirectly improves overall organizational performance.

The study also underscores that to maximize the impact of transformational leadership, healthcare institutions need to develop more proactive policies in supporting innovation and employee motivation. Innovation is a key driver in improving operational effectiveness and service quality in the healthcare sector, especially in an era where medical technology and data-driven healthcare management systems are constantly evolving. Institutions such as RSHS and RSCM that have implemented innovations in their services have proven to be able to provide faster, more accurate, and more efficient services. The use of technology such as big data for patient management or artificial intelligence (AI) for clinical diagnosis can further accelerate the improvement of organizational performance if supported by effective leadership.

Policies that support employee development should also be prioritized, as intrinsic motivation and employee commitment are important aspects in achieving long-term success (Kanfer et al., 2017). Inclusive employee development programs, such as ongoing training and upskilling programs, can help increase employee motivation to continue to innovate and make their best contribution to the organization. For example, at Dr. Sardjito Hospital, the initiative to develop the competence of medical staff through collaboration with universities and research institutions has resulted in more competent and committed staff, which ultimately has a positive impact on patient satisfaction and quality of health services.

In this context, this study provides practical implications for managers and leaders in the health sector. Further efforts are needed to build an innovative and collaborative organizational culture through the implementation of policies that support innovation and create an empowering work environment. In this way, transformational leadership can have a sustainable impact on improving organizational performance, improving operational efficiency, and ensuring that patients receive better and timely care (WHO, 2020).

Ultimately, this study shows that a consistently implemented transformational leadership strategy, combined with innovative policies and employee development, can have a significant impact on performance improvement in the healthcare sector. Institutions that successfully integrate these elements will be better prepared to face future challenges and changes, and ensure that they continue to provide high-quality health services for the community (Sciences et al., 2019).

CONCLUSION

This study shows that transformational leadership has a significant influence on improving organizational performance in the health sector. Leaders who are able to inspire, encourage innovation, and provide individual attention to employees are proven to be able to improve operational effectiveness and quality of health services. The findings also confirm that innovation, motivation, and employee commitment act as important mediators that strengthen the relationship between transformational leadership and organizational performance. Innovation helps to improve efficiency and adaptation to new technologies, while employee motivation and commitment contribute to higher dedication and

engagement in achieving organizational goals.

The health institutions surveyed, such as RSCM, RSHS, Dr. Sardjito Hospital, and several health centers, showed that the consistent implementation of transformational leadership can bring positive changes, both in terms of the quality of service to patients and operational efficiency. Thus, transformational leadership has proven to be an effective strategy to face challenges in an increasingly dynamic world of health.

Healthcare institutions are advised to develop transformational leadership training programs that focus on the ability to inspire, motivate, and empower employees. Leaders who are trained in this leadership style will be better able to encourage innovation and maintain employee commitment in the long term. In addition, the increasing adoption of innovative technology is also an important aspect that must continue to be strengthened by health institutions, such as the application of electronic medical records, data-based health information systems, and telemedicine. These innovations not only improve operational efficiency, but also provide better services to patients, fully supported by progressive leadership.

To improve organizational performance, healthcare institutions need to focus on developing employee motivation and commitment. This can be done through programs that reward good performance, open up career development opportunities, and improve job well-being. With this strategy, a more productive and collaborative work environment will be formed, which ultimately encourages the improvement of overall organizational performance. Furthermore, it is important for healthcare institutions to build an inclusive organizational culture, where collaboration and active participation from all staff become an integral part of the work culture. By creating an inclusive and innovative environment, organizations will be better able to respond to external changes and maintain a high quality of service on an ongoing basis.

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