**The Role of Transformational Leadership in Critical Situations: Problem-solving Performance in Public Service as the Outcome**

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**ABSTRACT**

This study examines the role of transformational leadership (TL) in critical situations with problem-solving performance (PSP) as the dependent variable. A sample of 258 respondents was randomly selected from public service employees in Central Java and Yogyakarta. Data were analyzed using Structural Equation Model (SEM). The results prove that transformational leadership has a direct effect on problem-solving performance, but does not directly affect emotional engagement (EE). The results of this study also indicate that psychological well-being (PWB) moderates the effect of transformational leadership on emotional engagement and problem-solving performance. The direct effect of psychological well-being on emotional engagement and problem-solving performance showed significant positive results. The findings also prove that emotional involvement cannot mediate the effect of transformational leadership on problem-solving performance. The practical implications of this research provide clear directions for the role of transformational leadership, emotional engagement, and psychological well-being in improving employee problem-solving performance in critical situations.

**Keywords**: Psychological well-being, transformational leadership, emotional engagement, Problem-solving Performance

1. **Introduction**

Organizations are in a dynamic environment. The organizational environment changes from time to time, both predictably and unpredictably. Changes in the organizational environment can provide both advantages and disadvantages to the organization. Therefore, organizations must anticipate if there are changes that can be detrimental, by equipping human resources with quality problem-solving skills. problem-solving creativity is an interesting study, it is evident that many studies have been conducted with this theme (Carmeli et al., 2014; Hardy et al., 2017; Oppenheimer et al., 2022; van Hooijdonk et al., 2020) In addition, elements of the problem-solving creativity assessment procedure have the potential to require improvement (van Hooijdonk et al., 2020).

The Covid-19 outbreak in early 2020 in Indonesia caused a critical situation. Many human activities are paralyzed, due to limited human interaction in all activities. Organizations are required to immediately make strategic adjustments. When the situation is critical, public/government organizations must maintain their commitment to providing quality public services. Therefore, strategic collaboration needs to be engineered in such a way that the activities.

Organizational leaders have great responsibility during critical situations. In complex situations, and it is not clear when the situation will end, the leader must be a driving force in improving problem-solving skills for his subordinates when facing problems in their duties (Bijl et al., 2019). A leader must first create a conducive environment for employee psychology, then motivate, inspire, and most importantly maintain employee performance. Employees will show better psychological involvement at work when their leaders show transformational leadership (Bedarkar & Pandita, 2014). Leaders must still be able to boost employee performance in solving problems in unusual settings during an emergency.

Employee engagement is now seen as a strong source of competitive advantage during a crisis (Bedarkar & Pandita, 2014). Various and complicated problems require qualified human resources. An employee must be able to solve problems quickly and accurately, whether they arise inside or outside the organization even in critical situations.

Robertson & Cooper (2010) introduced the concept of “full engagement”, by proposing that engagement is more likely to be sustainable when employee well-being is also high. Research by Tinline and Crowe (2010) explains that employee involvement is indicated by the workplace connectedness of employees to work extra to increase to develop their ability to control the work environment and take advantage of opportunities and a positive attitude improve their mental and spiritual health.

Transformational leaders encourage cognitive, affective, and behavioral work involvement for organizational success success (J. Park et al., 2021). Several previous studies explored the role of transformational leadership and its influence on employee performance (Subiyanto & Djastuti, 2018; Buil et al., 2019; Carter et al., 2013), and its influence on emotional engagement (Breevaart et al., 2014; Martinez et al., 2020). Previous studies are empirical evidence of the significance of the role of transformational leadership in an organization in addition to transformational leadership (Alamri, 2023), which has proven to be big and profitable for organizations, psychological well-being brings valuable contributions to organizations (H. Kim & Cruz, 2022), such as its function in improving performance.

Solving emergency problems requires more than knowledge and skills; there must also be a will and spirit from within to be involved in dealing with emergency problems. Thus, it is necessary to develop a comprehensive approach to build the psychology of employees with a strong attachment to their workplace, one of which is with adequate psychological well-being. Psychological well-being constructs are often complex and multidimensional (Carmeli et al., 2009; Nimmi et al., 2021; Ryan & Deci, 2001; Şahin & Çankir, 2018). In its simplest form, psychological well-being often represents happiness (Ryan & Deci, 2001). A person with high life satisfaction typically interprets life with a sense of “gratitude” appreciating everything that he has and feeling happy that his life is better than others (Nimmi et al., 2021). Previous studies have a void in that psychological well-being is more appropriately played as a moderating variable, as it is an individual’s innate nature. Considering that, the role of psychological well-being as a moderator for transformational leadership in increasing emotional engagement and problem-solving performance becomes the focus of this study. This study also investigates the role of emotional engagement in mediating transformational leadership in improving problem-solving performance.

The problem when the Covid-19 outbreak was very difficult for life in Indonesia. Problem solving ability is the key to success in these conditions. Therefore, this study proposes the formulation of the problem that we develop in the form of research questions; do transformational leadership, emotional engagement, and Psychological Well Being play a positive role on problem solving performance in critical conditions? Based on these research questions, the purpose of this research is to investigate the effect of transformational leadership, emotional engagement as a predictor, and Psychological Well Being as a predictor as well as a moderation on problem solving performance in critical conditions. Psychological Well Being on the other hand as moderation, because researchers have the belief, with the support of logical thinking, that there are individual innate personality factors that are independent.

1. **Theoretical framework**
	1. **The effect of transformational leadership on problem-solving performance in critical situations**

Stewart, (2006) states that transformational leadership will keep evolving in responding to changing needs for organizational reform. Furthermore, during critical situations such as the COVID-19 outbreak, change-making leadership is very much needed as an incentive for employees to continue working professionally. During the Covid-19 outbreak in Indonesia, activities in the field often are not governed by standard procedures. Thus, the role of transformational leadership that is to provide flexibility of creative thinking for subordinates will be tested.

Transformational leadership is an approach related to morality and motivation (T. Park & Pierce, 2020). In critical situations, employees are frequently confronted with various complex problems; there is insufficient information to solve problems and insufficient material in making decisions, there is also no standard procedure for taking action (Wulandari et al., 2018). The role of the leader is critical in encouraging employees to be involved in problem-solving, fostering coordination with members, and working together with members to solve obstacles and challenges that are sometimes fraught with ambiguity (Pietraszewski, 2019).

Transformational leadership is characterized by several dimensions dimensi (Bass, 1999; Nielsen et al., 2009; Yue et al., 2019). The first is idealized influence as leader behavior in presenting the vision and mission, fostering pride, respecting and trusting in subordinates. The second is intellectual stimulation, which is the leader’s ability to eliminate the reluctance of subordinates to generate ideas, encourage subordinates to be more creative, and stimulate thoughts in solving problems. The third is inspirational motivation as the behavior of leaders in motivating and inspiring their subordinates. Fourth is individualized consideration, in which a leader pays attention to his subordinates in giving guidance and mentoring, paying personal attention, and developing the abilities of subordinates.

In dealing with critical situations in organizations, solving problems is a complicated process, because we are often confused and unsure of what we should do when there is a crisis (Alzoubi et al., 2022; Çalişkan et al., 2010). In line with this, Wulandari, Ferdinand, and Dwiatmadja (2018) proffer that employees frequently encounter unusual critical moments such as tackling a completely new job, handling a job of uncertainty and revolutionary, and achieving difficult targets. Employees that work under transformational leadership are encouraged to not be afraid of coping with uncertainty (S. Zhang & Sun, 2021), dealing with risks. They encourage employees to revolutionize their routine in innovative new ways. It will influence change, increase job quality, and, as a result, improve employee performance.

Carmeli et al., (2014); Carmeli et al., (2013); Shafi, Zoya, Lei, Song, & Sarker (2020) and Singh et al., (2020) empirically prove that leaders who inspire, encourage subordinates, have a clear vision, motivate and stimulate subordinates will improve performance. Referring to the theories and logical thinking based on previous research, the following hypothesis is proposed:

H1: The higher the transformational leadership, the higher the problem-solving performance in critical situations.

* 1. **The effect of emotional engagement on problem-solving performance in critical situations**

Many events take place in scenarios and conditions that employees have never encountered before, yet employees must continue to operate as best they can and demonstrate excellent achievement. Employees are not adequately equipped with acceptable competencies under such circumstances, but psychological aspects must also be present to inspire employees to remain motivated to work at their best. Emotional engagement is a psychological factor that plays a very important role in maintaining employee performance at critical times. There are two explanations for engagement, namely rational engagement and emotional engagement (Folgado-fern et al., 2021). Emotions are expressed through feelings, motivations, and experiences that have specific and unique meanings for each person. Rational involvement relates to awareness, memory, learning process, or understanding due to experience.

Emotional engagement displays love, happiness, joy, enthusiasm, and motivation (Özhan & Kocadere, 2020). Studies on emotional engagement has received a lot of attention since it is related to increasing employee competitiveness and readiness to adapt to change and serves as the main drivers of work attitudes such as increasing productivity and employee performance (Gruman & Saks, 2011). Vigor is one of the dimensions of emotional engagement. According to Buil et al., (2019) and Schaufeli et al., (2006), it is an employee’s attachment shown through physical and mental strength at work. Vigor is characterized by a high level of mental strength and resilience, optimal energy, the courage to make efforts, the desire and willingness to give maximum results, enthusiasm, and perseverance in adversity (Abd-allah, 2016; Swierzy et al., 2017). The second dimension is dedication which describes meaningful feelings, enthusiastic employees at work, being proud of the work and the company they work for, staying inspired, and remaining persistent in the company without threatened by the challenges (Swierzy et al., 2017; Y. Zhang et al., 2017). The third is absorption, which is employee engagement described by full attention to the work (Kaliannan & Narh, 2015).

Emotional engagement has been proven to make a positive contribution to the organization. It is essential to be improved. This is where transformational leadership plays an important role as a predictor to strengthen emotional engagement. This is in line with Buil et al. (2019) that transformational leadership increases emotional engagement in all dimensions of transformational leadership. Transformational leadership increases employee engagement with work shown by being passionate about work, proud to be part of the organization, paying attention to work success, never giving up and being dedicated, and thereby increasing their contribution to the company (Buil et al., 2019). Mencl, Wefald, & Ittersum (2016)and Sahu, Pathardikar, and Kumar (2018)state that transformational leadership increase well-being and emotional engagement. Transformational leadership penetrates employees’ emotions and improves problem-solving performance in critical situations (J., 2014; Kundi et al., 2021). Based on logical thinking and references to previous research, the following hypotheses are proposed:

H2: The higher the transformational leadership, the higher the emotional engagement.

H3: The higher the emotional engagement, the higher the problem-solving performance in critical situations.

* 1. **Psychological well-being in moderating the effect of transformational leadership on problem-solving performance, and emotional engagement in mediating the effect of transformational leadership on problem-solving performance.**

To date, the concept of psychological well-being has received much attention from researchers. In a multidimensional view, some researchers examine it in a narrow perspective, as a social phenomenon or even individual welfare (Stankevičienė et al., 2021). According to Robertson, Birch, and Cooper (2012) and Robertson and Cooper (2010), the approach used in discussing psychological well-being is a hedonic approach that connects generally perceived satisfaction in the general public, for example achieving a measure of happiness in general standards of the pleasure of life, not the purpose of life. The second is the eudaimonic well-being, which is the subjective experiences associated with eudaimonia, for example living a happy life with personal standards that differ from those of others.

Psychological well-being leads to positive behavior and attitudes, promotes mental health, and makes employees happier at work, which impacts work productivity (Kundi et al., 2020). Psychological well-being is a condition in which a person can accept and maintain a positive attitude towards himself, have good relationships with others, show feelings of affection or concern for others, have a purpose in life, and believe that his life is meaningful.

Carmeli, Yitzhak-Halevy, and Weisberg (2009); Nimmi et al. (2021); Şahin and Çankir (2018); Ryan and Deci (2001) explain several important dimensions of psychological well-being, namely self-acceptance, personal growth, autonomy, purpose in life, environmental mastery, and positive/quality of relationships with others. Jena et al., (2018) and Ryff (1989), describe that in general, the dimensions of psychological well-being are first, self-acceptance by maintaining a positive attitude towards oneself and describing a positive self-evaluation. The second is positive relations with others, which describes as the ability to love others, have empathy, understand others and is seen as a major component of mental health. The third is autonomy, that a person is expected to have the ability to make their own decisions and resist social pressures. Fourth, environmental mastery is the ability to manipulate and control a complex environment. The fifth is related to the purpose of life that leads to meaning. The sixth is personal growth, which refers to the desire to develop and grow one’s potential by being open to new experiences.

From the characteristics of the concept of psychological well-being, we can conclude that the concept of psychological well-being is more appropriate to moderate the relationship between transformational leadership and emotional engagement, as well as the relationship between transformational leadership and problem-solving performance (Carmeli et al., 2009; Jena et al., 2018; Nimmi et al., 2021; Ryan & Deci, 2001; Ryff, 1989; Şahin & Çankir, 2018). The reason that underlies this framework is that the concept of psychological well-being is a combination of personality from hereditary or genetic traits, cultural environment, norms, and values ​ of family, friends, social groups, and society. Hence, logically, leadership is not the only predictor of psychological well-being. Some hypotheses are proposed:

H4: The higher the psychological well-being, the higher the emotional engagement.

H5: The higher the psychological well-being, the higher the problem-solving performance.

H6: Psychological well-being strengthens the effect of transformational leadership on problem-solving performance.

H7: Psychological well-being strengthens the effect of transformational leadership on emotional engagement.

H8: Emotional engagement mediates the effect of transformational leadership on problem-solving performance.

1. **Empirical Research Model**

This empirical research model provides a clear framework of the effect of several proposed concepts in providing solutions to problems that must be handled by organizations or government agencies in critical situations. The outbreak in Indonesia demands organizations to provide services to a volatile community in an efficient, effective, and dynamic manner.



*Figure 1 Empirical Research Model*

1. **Population, Sample and Procedures**

This research is a quantitative study, examining the causal relationship between exogenous and endogenous variables, and involving moderating variables. The population in this study were all employees in the public sector in the Special Region of Yogyakarta and Central Java. Questionnaires were distributed directly to community service office employees, such as PLN, TNI, Polri, hospital nurses/doctors, PDAM, and firefighters. A total of 258 data were obtained through the non-probability sampling method with a purposive sampling technique. Data is processed with AMOS software with Structural Equation Modeling (SEM) analysis tool.

1. **Descriptive Statistics**

The respondents of this study were employees of several government institutions in the Special Region of Yogyakarta and Central Java province. The respondents are described in terms of position, institution/agencies, experience, and age. Descriptive statistics on the demographics of the respondents are presented in Table 1.

**Table 1. Descriptive Statistics of Respondents Demographics**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Demography** | **Frequency** | **Percentage (%)** |
| Position | Level Manager | 7 | 2.7 |
|  | Supervisor | 20 | 7.8 |
|  | Staff | 231 | 89.5 |
| Occupation | Health Workers (nurses and doctors) | 58 | 22.5 |
|  | Employee in State-owned Enterprises (BUMN)/ Regional Government-Owned Enterprises (BUMD)  | 179 | 69.4 |
|  | Military/ Office | 9 | 3.5 |
|  | Civil Servant and Non-Civil servant in various Ministries  | 12 | 4.6 |
| Age | 25 - 30 year31-35 Year36-40 Year41-45 Year46-50 Year>50 Year | 15243408141 | 58.916.715.53.15.4.4 |
| Gender | Male | 126 | 48.8 |
|  | Female |        132 | 51.2 |

1. **Validity and Reliability Tests**

The validity test is used to see whether the statements in the questionnaire are valid. A statement is said to be valid if the validity is more than 0.40. Next, the reliability test aims to measure the accuracy of the statements that have been declared valid. The reliability test used a significant level of 5%. If Cronbach’s Alpha is > 0.6, the instrument is declared reliable. Table 2 presents the results of the validity and reliability tests.

**Table 2. The results of the validity and reliability test on the indicators of transformational leadership, emotional engagement, psychological well-being, and employee performance**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Rcount** | **α** | **AVE** | **CR** | **Description** |  |
| **Transformational leadership** (Mangkunegara, 2021; Nielsen et al., 2009; Walsh, 2016;Yue et al., 2019) | .954 | .942 | .763 | Accepted |  |
| * My leader cab grow the subordinates’ confidence in critical situations.
 | .830 |  |  |  |
| * My leader empowers subordinates to complete tasks in critical situations
 | .852 |  |  |  |
| * My leader is a good motivator when the organization encounters a critical situation
 | .884 |  |  |  |
| * My leader always gives personal attention to every situation.
 | .889 |  |  |  |
| * My leader is a good mentor in dealing with critical situations
 | .912 |  |  |  |
| * My leader understands the subordinates when facing critical problems
 | .789 |  |  |  |
| **Psychological well-being** (Jena et al. 2018; Kim, and Lee 2019; Ryff 1989)   | .945 | .933 | .707 | Accepted |  |
| * I always have a good self-acceptance with a positive attitude towards myself
 | .735 |  |  |  |
| * I have concern and empathy for others
 | .864 |  |  |  |
| * I have an autonomy, independence, and resistance to social pressure
 | .850 |  |  |  |
| * I can take advantage of the opportunities that exist in the environment where I work
 | .860 |  |  |  |
| * I have a clear purpose in life that leads to more meaning
 | .891 |  |  |  |
| * I develop my potential and be open to new experiences
 | .840 |  |  |  |
| **Emotional Engagement** (Buil et al., 2019; Schaufeli et al., 2006).  | .954 | .945 | .740 | Accepted |  |
| * I do not give up easily when having problems
 | .840 |  |  |  |
| * I am excited to do my job
 | .849 |  |  |  |
| * I am enthusiastic about work
 | .858 |  |  |  |
| * I am persistent at work
 | .860 |  |  |  |
| * I do not shy away from new challenges at work
 | .889 |  |  |  |
| * I give full attention to my work
 | .861 |  |  |  |
| **Problem-solving performance** (Çalişkan et al., 2010; Mohaghegh & Größler, 2022; Watkins et al., 2022)  | .973 | .969 | .837 | Accepted |  |
| * I try hard to solve work problems
 | .924 |  |  |  |
| * I can solve problems dynamically
 | .878 |  |  |  |
| * I can achieve difficult targets in critical/unstable situations
 | .922 |  |  |  |
| * I have experience dealing with various problems and I know how to deal with them
 | .920 |  |  |  |
| * I have been tested in dealing with abnormal/critical situations
 | .921 |  |  |  |
| * If I cannot solve critical problems, I will report to my superiors, discuss with my co-workers and do self-evaluation
 | .923 |  |  |  |

1. **Analysis and Discussion**

From the results of the analysis structural equation model (SEM), the goodness of fit was obtained with Chi-Square of 2.385, Significance of 0.001, DF of 55, GFI of 0.940, AGFI of 0.901, TLI of 0.984, CFI of 0.989, and RMSEA of 0.054. To see whether the model in this study is good, the description is in the correlation matrix in Table 3.

**Table 3. Implied Correlations**

|  | TL6 | TL5 | PWB6 | PSP6 | EE6 | PWB5 | INTR | PWB3 | PSP4 | PSP3 | EE4 | EE3 | TL3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| TL6 | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |
| TL5 | .753 | 1.000 |  |  |  |  |  |  |  |  |  |  |  |
| PWB6 | .519 | .524 | 1.000 |  |  |  |  |  |  |  |  |  |  |
| PSP6 | .514 | .519 | .595 | 1.000 |  |  |  |  |  |  |  |  |  |
| EE6 | .490 | .495 | .612 | .639 | 1.000 |  |  |  |  |  |  |  |  |
| PWB5 | .532 | .537 | .677 | .610 | .627 | 1.000 |  |  |  |  |  |  |  |
| INTR | .839 | .847 | .777 | .674 | .669 | .797 | 1.000 |  |  |  |  |  |  |
| PWB3 | .528 | .533 | .672 | .605 | .623 | .688 | .791 | 1.000 |  |  |  |  |  |
| PSP4 | .536 | .541 | .621 | .689 | .668 | .637 | .703 | .632 | 1.000 |  |  |  |  |
| PSP3 | .500 | .505 | .579 | .642 | .623 | .594 | .656 | .589 | .670 | 1.000 |  |  |  |
| EE4 | .506 | .511 | .632 | .660 | .664 | .648 | .691 | .643 | .689 | .643 | 1.000 |  |  |
| EE3 | .510 | .515 | .637 | .665 | .748 | .653 | .696 | .648 | .694 | .648 | .772 | 1.000 |  |
| TL3 | .749 | .756 | .521 | .516 | .492 | .534 | .842 | .530 | .538 | .502 | .508 | .512 | 1.000 |

Table 3 shows that the research mode of this study is good with a moderate (0.3 - 0.7) and high (>0.7) correlation. Furthermore, the results of the analysis are depicted in Table 4.

**Table 4. Regression Weights**

| **Hypothesis** |  | **Estimate** | **S.E.** | **C.R.** | **Probability** | **Description** |
| --- | --- | --- | --- | --- | --- | --- |
| H1 | Transformational Leadership |   🡪 | Problem-solving Performance | .085 | .050 | 1.698 | .090\* | Accepted |  |
| H2 | Transformational Leadership | 🡪 | Emotional Engagement | -.009 | .074 | -.120 | .905 | Rejected |  |
| H3 | Emotional Engagement | 🡪 | Problem-solving Performance | .488 | .096 | 5.108 | \*\*\*\* | Accepted |  |
| H4 | Psychological well-being (PWB) | 🡪 | Emotional Engagement | .930 | .099 | 9.390 | \*\*\* | Accepted |  |
| H5 | Psychological well-being (PWB) | 🡪 | Problem-solving Performance | .226 | .116 | 1.939 | .053\* | Accepted |  |
| H6 | INTRCT (TL and BWB) | 🡪 | Problem-solving Performance | .000 | .000 | 3.021 | .003\*\*\* | Accepted |  |
| H7 | INTRCT (TL and PWB) | 🡪 | Emotional Engagement | .000 | .000 | 7.285 | \*\*\* | Accepted |  |

\*\*\*<1%, \*\*< 5%, \*<10%

The findings of this study empirically prove that transformational leadership affects problem-solving performance in critical situations with a significance below 10% which is 0.090. However, it is not proven to affect emotional engagement with a significance of 0.905. Furthermore, the hypothesis stating that emotional engagement has a significant positive effect on problem-solving performance is accepted, with a significance of 0.00\*\*\*.

The subsequent analysis involving psychological well-being as a moderation supports the idea that psychological well-being strengthens the effect of transformational leadership on problem-solving performance with a significance of 0.090 before involving psychological well-being that increases to 0.003 after involving psychological well-being. The role of psychological well-being as a moderating variable of the effect of transformational leadership on emotional engagement is proven empirically with increasing significance from 0.90 to 0.000\*\*\*.

Psychological well-being has a significant positive effect on emotional engagement with a probability value of 0.000\*\*\*, with an estimated value of 0.930. Psychological well-being also has a positive effect on problem-solving performance with a probability value of 0.053, and an estimated value of 0.226.

The results of this study are in line with research conducted by Robertson, Birch, & Cooper (2012) that psychological well-being encourages work-life balance, which has an impact on employee performance. Organizations need to pay attention to work attitudes and psychological well-being by designing useful programs to increase employee engagement and performance. The research findings of Tinline & Crowe, (2010) reports that a combination of employee engagement and psychological well-being will increase employee productivity. Psychological well-being is an important requirement that encourages employee engagement and productivity. The research results provide important input for designing ways to increase engagement and well-being so that they become a priority and effective policies for leaders. Employee engagement is seen as the basic foundation of work because the love of work becomes positive energy for fostering a strong emotional bond with work (Mencl et al., 2016). Transformational leaders are easier to move subordinates because they are inspiring and understand the needs of subordinates, encouraging individuals to be involved and motivated in their work to improve performance. Work engagement mediates the effect of participatory leadership and job satisfaction because job satisfaction is stronger when employees feel comfortable at work (Chan, 2019).

1. **Sobel tests**

The results of the mediation of emotional engagement on the effect of transformational leadership on problem-solving performance can be seen in Table 5.

**Table 5. Sobel Test of the Variable of Emotional Engagement**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Sobel test statistic** | **One-tailed probability** | **Two-tailed probability** | **Conclusion** |
| H8: TL 🡪 EE 🡪 PSP | **-0.12158683** | **0.45161312** | **0.90322625** | Rejected |

The results corroborate the research of Kundi et al. (2020) asserting that if performance demands are considered a challenge, engagement and psychological well-being will be able to act as mediating or moderating variables. However, if performance demands are considered a threat, then both of them fail to play a role either as mediating or moderating variables.

1. **Conclusions**

Based on data analysis, it is concluded that problem-solving performance is not directly affected by transformational leadership, but is strengthened by psychological well-being. This finding empirically delineates that employees with a problem-solving performance in the critical situation will be able to achieve well, particularly if employees have high psychological well-being through transformational leadership. The role of psychological well-being which is hypothesized to moderate the effect of transformational leadership on emotional engagement is not empirically proven when the situation is very critical. Emotional engagement will be stronger in the internal organization than the involvement for external organizations as evidenced by the rejection of the second hypothesis. Psychological well-being is an important requirement that encourages employee involvement in taking dynamic attitudes and actions and increasing productivity, especially during critical situations.

The results of the serve as important input for designing strategies to improve problem-solving performance . Transformational leadership will be more effective in improving problem-solving performance among state employees if collectively, they have high psychological well-being. Hence, psychological well-being should be a priority of the Indonesian government when recruiting employees because Indonesia is one of the countries that has a fairly high vulnerability, such as floods, earthquakes, volcanic eruptions, and other things that cannot be predictable. Thus, the role of psychological well-being is very necessary. A research model by involving variables concerning the critical situations will serve as fertile ground, which gives rise to new theoretical issues. Expanding and increasing the number of respondents is necessary. Thus, it requires more volunteers in data collection.

This research was carried out during a pandemic caused by Covid-19. Hence, finding respondents was challenging. This study also limits the variables in the empirical model due to the high physical and mental business of the respondents.

If the organization does not have employees with high psychological well-being, services to the general public will certainly be disappointing in critical situations, especially when dealing with extremely complex problems like the pandemic. Services that are dynamic, timely, on target, and appropriately handled are very much needed during critical situations like today. All in all, the findings of this study will be fruitful as the foundation for government policy-making in Indonesia, particularly in the area of human resource management.

**Author contributions**

**Fitri Wulandari**: drafting the manuscript, collecting field data, data input, editing and revising manuscripts

**Didik Subiyanto**: compiling theoretical studies, data processing, data analysis and interpretation, template layout

**References**

[1] A. Carmeli, Z. Sheaffer, G. Binyamin, R. Reiter-Palmon, and T. Shimoni, “Transformational leadership and creative problem-solving: The mediating role of psychological safety and reflexivity,” *J. Creat. Behav.*, 2014, doi: 10.1002/jocb.43.

[2] J. H. Hardy, A. M. Ness, and J. Mecca, “Outside the box: Epistemic curiosity as a predictor of creative problem solving and creative performance,” *Pers. Individ. Dif.*, vol. 104, pp. 230–237, 2017, doi: 10.1016/j.paid.2016.08.004.

[3] M. van Hooijdonk, T. Mainhard, E. H. Kroesbergen, and J. van Tartwijk, “Creative Problem Solving in Primary Education: Exploring the Role of Fact Finding, Problem Finding, and Solution Finding across Tasks,” *Think. Ski. Creat.*, vol. 37, no. April, p. 100665, 2020, doi: 10.1016/j.tsc.2020.100665.

[4] A. V Oppenheimer, D. C. Bellinger, B. A. Coull, M. G. Weisskopf, and S. A. Korrick, “The association of prenatal manganese exposure with problem-solving skills and its mediation by the building blocks of executive function,” *Neurotoxicology*, vol. 92, pp. 191–199, 2022, doi: https://doi.org/10.1016/j.neuro.2022.08.009.

[5] A. Bijl, K. Ahaus, G. Ruël, P. Gemmel, and B. Meijboom, “Role of lean leadership in the lean solving relationship: a mixed methods study,” *Heal. Serv. Res. Res.*, vol. 9, no. 6, p. e026737, 2019, doi: 10.1136/bmjopen-2018-026737.

[6] M. Bedarkar and D. Pandita, “A Study on the Drivers of Employee Engagement Impacting Employee Performance,” *Procedia - Soc. Behav. Sci.*, 2014, doi: 10.1016/j.sbspro.2014.04.174.

[7] I. T. Robertson and C. L. Cooper, “Full engagement: The integration of employee engagement and psychological well-being,” *Leadersh. Organ. Dev. J.*, 2010, doi: 10.1108/01437731011043348.

[8] G. Tinline and K. Crowe, “Improving employee engagement and wellbeing in an NHS trust,” *Strateg. HR Rev.*, 2010, doi: 10.1108/14754391011022226.

[9] J. Park, J. Kim, and W. Kim, “Structural relationships among transformational leadership , a ff ective organizational commitment , and job performance : the mediating role of employee engagement,” *Eur. J. Train. Dev.*, 2021, doi: 10.1108/EJTD-10-2020-0149.

[10] D. Subiyanto and I. Djastuti, “Transformational leadership, organizational support, and dynamic ambidexterity capabilities in troubleshooting: Strategic efforts to improve lecturer performance empirical evidence from private universities in Central Java province and the Yogyakarta spec,” *Qual. - Access to Success*, vol. 19, no. 162, 2018, [Online]. Available: https://www.mendeley.com/catalogue/870aaa07-d2ef-3858-b042-466ba4782257/?utm\_source=desktop&utm\_medium=1.19.4&utm\_campaign=open\_catalog&userDocumentId=%7B64d55223-6b30-4c60-b1e8-60183c6cb5ec%7D

[11] I. Buil, E. Martínez, and J. Matute, “Transformational leadership and employee performance: The role of identification, engagement and proactive personality,” *Int. J. Hosp. Manag.*, 2019, doi: 10.1016/j.ijhm.2018.06.014.

[12] M. Z. Carter, A. A. Armenakis, H. S. Feild, and K. W. Mossholder, “Transformational leadership, relationship quality, and employee performance during continuous incremental organizational change,” *J. Organ. Behav.*, 2013, doi: 10.1002/job.1824.

[13] K. Breevaart, A. Bakker, J. Hetland, E. Demerouti, O. K. Olsen, and R. Espevik, “Daily transactional and transformational leadership and daily employee engagement,” *J. Occup. Organ. Psychol.*, 2014, doi: 10.1111/joop.12041.

[14] I. M. Martinez, M. Salanova, and V. Cruz-ortiz, “Journal of Work and Organizational Psychology Our Boss is a Good Boss ! Cross-level Effects of Transformational Leadership on Work Engagement in Service Jobs,” *J. Work Organ. Psychol.*, vol. 36, pp. 87–94, 2020.

[15] M. Alamri, “Transformational leadership and work engagement in public organizations: promotion focus and public service motivation, how and when the effect occurs,” *Leadersh. Organ. Dev. J.*, vol. 44, no. 1, pp. 137–155, 2023, doi: 10.1108/LODJ-12-2021-0544.

[16] H. Kim and A. B. Cruz, “Transformational Leadership and Psychological Well-Being of Service-Oriented Staff : Hybrid Data Synthesis Technique,” *Int. J. Environ. Res. Public Health*, vol. 19, no. 13, p. 8189, 2022.

[17] A. Carmeli, M. Yitzhak-Halevy, and J. Weisberg, “The relationship between emotional intelligence and psychological wellbeing,” *J. Manag. Psychol.*, vol. 24, no. 1, pp. 66–78, 2009, doi: 10.1108/02683940910922546.

[18] P. M. Nimmi, A. K. Binoy, G. Joseph, and R. Suma, “Significance of developing spirituality among management students: discerning the impact on psychological resources and wellbeing,” *J. Appl. Res. High. Educ.*, 2021, doi: 10.1108/jarhe-10-2020-0372.

[19] S. Şahin and B. Çankir, “Psychological Well-Being and Job Performance: The Mediating Role of Work Engagement,” *Hitit Üniversitesi Sos. Bilim. Enstitüsü Derg.*, vol. 11, no. 3, 2018, doi: 10.17218/hititsosbil.487244.

[20] R. M. Ryan and E. L. Deci, “On happiness and human potentials: A review of research on hedonic and eudaimonic well-being,” *Annu. Rev. Psychol.*, vol. 52, pp. 141–166, 2001, doi: 10.1146/annurev.psych.52.1.141.

[21] J. Stewart, “Instructional and Transformational Leadership: Burns, Bass and Leithwoood,” *J. Educ. Adm.*, 2006.

[22] T. Park and B. Pierce, “Impacts of transformational leadership on turnover intention of child welfare workers,” *Child. Youth Serv. Rev.*, 2020, doi: 10.1016/j.childyouth.2019.104624.

[23] F. Wulandari, A. T. Ferdinand, and C. Dwiatmadja, “Knowledge sharing in a critical moment of work: A driver for success?,” *Int. J. Knowl. Manag.*, 2018, doi: 10.4018/IJKM.2018040106.

[24] D. Pietraszewski, “Intergroup processes: Principles from an evolutionary perspective,” in *Social Psychology: Handbook of Basic Principles*, 2019.

[25] B. M. Bass, “Two Decades of Research and Development in Transformational Leadership,” *Eur. J. Work Organ. Psychol.*, 1999, doi: 10.1080/135943299398410.

[26] C. A. Yue, L. R. Men, and M. A. Ferguson, “Bridging transformational leadership, transparent communication, and employee openness to change: The mediating role of trust,” *Public Relat. Rev.*, vol. 45, no. 3, p. 101779, 2019, doi: 10.1016/j.pubrev.2019.04.012.

[27] K. Nielsen, J. Yarker, R. Randall, and F. Munir, “The mediating effects of team and self-efficacy on the relationship between transformational leadership, and job satisfaction and psychological well-being in healthcare professionals: A cross-sectional questionnaire survey,” *Int. J. Nurs. Stud.*, vol. 46, no. 9, pp. 1236–1244, 2009, doi: 10.1016/j.ijnurstu.2009.03.001.

[28] S. Çalişkan, G. S. Selçuk, and M. Erol, “Effects of the problem solving strategies instruction on the students’ physics problem solving performances and strategy usage,” in *Procedia - Social and Behavioral Sciences*, 2010. doi: 10.1016/j.sbspro.2010.03.315.

[29] M. . Alzoubi, A. Alrowwad, and R. Masa’deh, “Exploring the relationships among tacit knowledge sharing, communities of practice and employees’ abilities: the case of KADDB in Jordan,” *Int. J. Organ. Anal.*, vol. 30, no. 5, pp. 1132-1155., 2022.

[30] S. Zhang and W. Sun, “The antecedents and outcomes of transformational leadership: leader’s self-transcendent value, follower ’s environmental commitment and behavior,” *Leadersh. Organ. Dev. J.*, vol. 42, no. 7, pp. 1037–1052, 2021, doi: 10.1108/LODJ-10-2020-0471.

[31] A. Carmeli, R. Gelbard, and R. Reiter-Palmon, “Leadership, Creative Problem-Solving Capacity, and Creative Performance: The Importance of Knowledge Sharing,” *Hum. Resour. Manage.*, 2013, doi: 10.1002/hrm.21514.

[32] M. Shafi, Zoya, Z. Lei, X. Song, and M. N. I. Sarker, “The effects of transformational leadership on employee creativity: Moderating role of intrinsic motivation,” *Asia Pacific Manag. Rev.*, 2020, doi: 10.1016/j.apmrv.2019.12.002.

[33] S. K. Singh, M. Del Giudice, R. Chierici, and D. Graziano, “Green innovation and environmental performance: The role of green transformational leadership and green human resource management,” *Technol. Forecast. Soc. Change*, vol. 150, no. September 2019, p. 119762, 2020, doi: 10.1016/j.techfore.2019.119762.

[34] J. A. Folgado-fern, P. Duarte, and J. M. Hern, “Tourist ’ s rational and emotional engagement across events: a multi-event integration view,” *Int. J. Contemp. Hosp. Manag.*, vol. 33, no. 7, pp. 2371–2390, 2021, doi: 10.1108/IJCHM-09-2020-1098.

[35] Ş. Ç. Özhan and S. A. Kocadere, “The Effects of Flow, Emotional Engagement, and Motivation on Success in a Gamified Online Learning Environment,” *J. Educ. Comput. Res.*, vol. 57, no. 8, pp. 2006–2031, 2020, doi: 10.1177/0735633118823159.

[36] J. A. Gruman and A. M. Saks, “Performance management and employee engagement,” *Hum. Resour. Manag. Rev.*, vol. 21, no. 2, pp. 123–136, 2011, doi: 10.1016/j.hrmr.2010.09.004.

[37] W. B. Schaufeli, A. B. Bakker, and M. Salanova, “The measurement of work engagement with a short questionnaire: A cross-national study,” *Educ. Psychol. Meas.*, vol. 66, no. 4, pp. 701–716, 2006, doi: 10.1177/0013164405282471.

[38] P. Swierzy, P. Wicker, and C. Breuer, “The impact of organizational capacity on voluntary engagement in sports clubs : A multi-level analysis,” *Sport Manag. Rev.*, pp. 1–14, 2017, doi: 10.1016/j.smr.2017.08.001.

[39] O. M. Z. Abd-allah, “The Relationship between organizational citizenship behavior and employee engagement in Cement Industry in Egypt,” *Int. J. Manag. Commer. Innov.*, vol. 4, no. 1, pp. 362–376, 2016.

[40] Y. Zhang, Y. Guo, and A. Newman, “Identity judgements , work engagement and organizational citizenship behavior: The mediating effects based on group engagement model,” *Tour. Manag.*, vol. 61, pp. 190–197, 2017, doi: 10.1016/j.tourman.2017.01.005.

[41] M. Kaliannan and S. Narh, “Effective employee engagement and organizational success: a case study,” *Procedia - Soc. Behav. Sci.*, vol. 172, pp. 161–168, 2015, doi: 10.1016/j.sbspro.2015.01.350.

[42] J. Mencl, A. J. Wefald, and K. W. van Ittersum, “Transformational leader attributes: Interpersonal skills, engagement, and well-being,” *Leadersh. Organ. Dev. J.*, vol. 37, no. 5, pp. 635–657, 2016, doi: 10.1108/01437739199500003.

[43] S. Sahu, A. Pathardikar, and A. Kumar, “Transformational leadership and turnover: Mediating effects of employee engagement, employer branding, and psychological attachment,” *Leadersh. Organ. Dev. J.*, vol. 39, no. 1, pp. 82–99, 2018, doi: 10.1108/LODJ-12-2014-0243.

[44] Y. M. Kundi, S. Sardar, and K. Badar, “Linking performance pressure to employee work engagement: the moderating role of emotional stability,” *Pers. Rev.*, vol. ahead-of-p, no. ahead-of-print, 2021, doi: 10.1108/pr-05-2020-0313.

[45] A. J., “Determinants of employee engagement and their impact on employee performance,” *Int. J. Product. Perform. Manag.*, vol. 63, no. 3, pp. 308–323, 2014, doi: 10.1108/IJPPM-01-2013-0008.

[46] A. Stankevičienė, V. Tamaševičius, and D. Diskienė, “The mediating effect of work-life balance on the relationship between work culture and employee well-being,” *J. Bus. Econ. Manag.*, vol. 22, no. 4, pp. 988–1007, 2021.

[47] I. T. Robertson, A. J. Birch, and C. L. Cooper, “Job and work attitudes, engagement and employee performance Where does psychological well-being fit in?,” *Leadersh. Organ. Dev. J.*, vol. 33, no. 3, pp. 224–232, 2012, doi: DOI 10.1108/01437731211216443.

[48] Y. M. Kundi, M. Aboramadan, E. M. I. Elhamalawi, and S. Shahid, “Employee psychological well-being and job performance: exploring mediating and moderating mechanisms,” *Int. J. Organ. Anal.*, vol. 29, no. 3, pp. 736–754, 2020, doi: 10.1108/IJOA-05-2020-2204.

[49] L. K. Jena, S. Pradhan, and N. P. Panigrahy, “Pursuit of organisational trust: Role of employee engagement, psychological well-being and transformational leadership,” *Asia Pacific Manag. Rev.*, vol. 23, no. 3, pp. 227–234, 2018, doi: 10.1016/j.apmrv.2017.11.001.

[50] C. D. Ryff, “Happiness is everything, or is it? Explorations on the meaning of psychological well-being.,” *J. Pers. Soc. Psychol.*, vol. 57, no. 6, pp. 1069–1081, 1989, doi: 10.1037/0022-3514.57.6.1069.

[51] K. A. C. L. M. M. Walsh, “Transformational leadership in an extreme context: examining gender, individual consideration and self- sacrifice,” *Leadersh. Organ. Dev. Journal,* vol. 37, no. 6, 2016.

[52] K. E. Watkins *et al.*, “Accelerating problem-solving capacities of sub-national public health professionals: an evaluation of a digital immunization training intervention,” *BMC Health Serv. Res.*, vol. 22, no. 1, pp. 1–9, 2022, doi: 10.1186/s12913-022-08138-4.

[53] A. P. Mangkunegara, “The Role of Transformational Leadership In Building Work Engagement and Performance of Business Company Managers,” *J. Leg. Ethical Regul. Issues*, vol. 24, no. Special Issue 1, pp. 1–19, 2021.

[54] M. Kim, Y. Do Kim, and H. W. Lee, “It is time to consider athletes’ well-being and performance satisfaction: The roles of authentic leadership and psychological capital,” *Sport Manag. Rev.*, 2020, doi: 10.1016/j.smr.2019.12.008.

[55] M. Mohaghegh and A. Größler, “Exploring organizational problem-solving modes: a dynamic capabilities approach,” *Manag. Decis.*, vol. 60, no. 1, pp. 254–277, 2022, doi: 10.1108/MD-08-2020-1097.

[56] S. C. H. Chan, “Participative leadership and job satisfaction: The mediating role of work engagement and the moderating role of fun experienced at work,” *Leadersh. Organ. Dev. J.*, vol. 40, no. 3, pp. 319–333, 2019, doi: 10.1108/LODJ-06-2018-0215.