

# Transformational Leadership, Self-Efficacy, Organizational Climate on Innovative Behavior in Indonesia

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**Abstract:** This study investigated the influence of transformational leadership, self-efficacy, and organizational climate on teachers' innovative behavior. The focus was on idea generation, idea search, idea communication, implementation initiation activities, involving others, and overcoming obstacles. The method used was a survey involving 160 civil servant teachers in junior high schools in Bukittinggi City. PLS-SEM is a statistical tool used to examine data and test research hypotheses in a structural model. The findings of this study revealed (1) a significant correlation between innovative behavior, transformational leadership, self-efficacy, and organizational climate. Self-efficacy showed the highest positive coefficient in showing innovative behavior (0.234). (2) Transformational leadership had a direct positive and significant effect on self-efficacy. (3) Transformational leadership had direct positive and significant effect on organizational climate. (4) Organizational climate had direct positive and significant effect on self-efficacy. (5) Transformational leadership had an indirect positive and significant effect on teachers' innovative behavior through self-efficacy. (6) Transformational leadership had an indirect positive and significant effect on teachers' innovative behavior through organizational climate. (7) Organizational climate had an indirect positive and significant effect on teachers' innovative behavior through self-efficacy. The use of technology can support innovative behavior. The principal must be able to be a role model and provide inspiring motivation for teachers to create a sense of togetherness and improve innovative behavior. Teachers must understand the subject matter well. Consistent in achieving goals and optimistic in facing challenges. Giving rewards and punishments and collaboration can help improve teachers' innovative behavior. This study can be developed with a wider sample area and a more complex method, namely the mix method.

**Keywords:** Innovative Behavior, Transformational Leadership, Self-Efficacy, Organizational Climate

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## Introduction

Education is a key foundation of societal progress, with teachers playing an important role in shaping the quality of learning and promoting student development. In the context of basic education, which includes early childhood education, primary school, and junior secondary level, teachers are at the frontlines of implementing innovative teaching strategies to meet the demands of 21st century education. Rapid technological advance, changes in pedagogical approaches and dynamic student needs demand continuous adjustment and innovation from educators. On the other hand, digitalization, which is a process of continuous change with open-ended outcomes, requires readjustment at all levels of the organization. Leaders, including in education, need to be aware that their work environment and the demand on themselves and organizational members are constantly changing due to the increasingly dominating forces of digitalization, (Anindhyta et al., 2023). The combination of innovation in

education and adaptation to digitalization is the key to success in facing the challenges of this era.

The Merdeka Curriculum offers broader opportunities for teachers to develop creative and flexible teaching methods. For this curriculum to be effectively implemented, teachers are expected to exhibit innovative behaviors. This includes the ability to employ diverse and adaptive approaches and integrate technology into the teaching and learning process. Given the demands of modern times and the diverse needs of students, it is crucial for teachers to continuously update their teaching methods to meet the evolving educational landscape. However, in Bukittinggi, many teachers still face challenges in implementing innovation in their teaching practices. A significant number of teachers continue to rely on conventional teaching methods such as lecturing and have not fully utilized technology or more interactive teaching approaches. Limited resources and a lack of relevant training contribute to the low level of innovation among teachers in local schools. This issue needs to be addressed promptly to ensure that teachers are better equipped to meet the demands of the new curriculum, which is more flexible and creativity-based.

The objectives of the study are as follows:

- To investigate the direct influence of transformational leadership, self-efficacy, and organizational climate on teachers' innovative behavior.
- To investigate the direct influence of transformational leadership on self-efficacy.
- To investigate the direct influence of transformational leadership on organizational climate.
- To investigate the influence of organizational climate on self-efficacy.
- To investigate the indirect influence of transformational leadership on teachers' innovative behavior through self-efficacy.
- To determine the indirect influence of transformational leadership on teachers' innovative behavior through organizational climate.
- To investigate the indirect influence of organizational climate on teachers' innovative behavior through self-efficacy.

By evaluating the influence of transformational leadership, self-efficacy, and organizational climate in the context of teachers' innovative behavior in junior high schools in Indonesia. This study provides valuable insights for educational leaders and policymakers. The findings aim to inform strategies that support the improvement of teachers' innovative behavior, build a more collaborative educational environment, and strengthen the quality of learning in schools. This study is organized into five sections: introduction, literature review and hypothesis development, research methodology, data analysis and findings, and a discussion of implications, limitations, and recommendations for future research.

### **Literatur Review and Hypotheses Development**

This study uses four theoretical foundations to analyze teachers' innovative behavior through transformational leadership, self-efficacy, and organizational climate.

#### *Innovative Behavior*

Innovative behavior refers to a series of actions undertaken by individuals to develop and implement new ideas, technologies, and methods aimed at enhancing the effectiveness and productivity of organizations. Innovative behavior involves generating new ideas that are applied to improve productivity and organizational effectiveness, focusing on the creation, processing, and implementation of innovation in everyday work, (Bos-Nehles, 2017). Innovative behavior encompasses not only new ideas but also the application of new technologies and methods to solve problems or improve work quality, (Rizki et al., 2023). Innovative behavior can involve creativity that is applied to develop new solutions to challenges faced by an organization. Further elaborates that innovative behavior is a process that involves developing, implementing, and promoting new ideas by individuals or groups

within a work environment to achieve better outcomes, (Thurlings et al., 2015). Innovative behavior among teachers is reflected in their efforts to develop and disseminate new ideas that can improve the quality of classroom learning, (Zhu et al., 2019).

This demonstrates that innovative behavior is crucial in enhancing organizational competitiveness and productivity, as well as improving individual task performance. In the educational context. Emphasize that innovation applied by teachers involves not just the development of new ideas but also the implementation of those ideas to improve the learning process and enhance the outcomes achieved by students, (Niesen et al., 2017). Underscore that innovation in education can help create a more adaptive and responsive environment to change, thus supporting the achievement of better educational outcomes, (Birdi et al., 2016). Innovative behavior in schools is greatly influenced by a supportive organizational climate and transformational leadership that encourages teachers to innovate, (Margana et al., 2019). Leadership that fosters innovative behavior focuses on empowering teachers to take risks in trying new approaches to teaching, (Asurakkody & Shin, 2018). Also highlights the importance of collaboration and communication among peers in enhancing innovation in the workplace, particularly in schools, (Lukes, 2017). With good collaboration, innovative ideas can be developed and implemented more effectively. Complement this understanding by emphasizing the role of individuals in translating creative ideas into tangible results that have a positive impact on the organization, (Adrian et al., 2022) Therefore, innovative behavior is not just about ideas but also about the process of applying those ideas in a broader context to achieve optimal results.

#### *Transformational Leadership*

Innovative One of the primary factors influencing teachers' innovative behavior is transformational leadership from school principals. Principals who are capable of inspiring and motivating teachers can create an environment that fosters creativity and innovation. Transformational leadership goes beyond just managing the school it actively encourages teachers to take risks and try new methods in teaching. With support and motivation from the principal, teachers are more likely to feel empowered to implement change and innovation in their classrooms. Transformational leadership plays a key role in driving meaningful change within an organization, as it is designed to provide support that enhances the quality of individuals' work. This form of leadership not only motivates organizations to exceed expectations but also fosters a strong sense of moral responsibility by considering both public and self-interests in the transformation process, Leaders in this context are not just administrators; they are agents of change who drive organizations to reach new heights by improving the work quality of their followers. This transformation, however, must have a moral dimension, ensuring that both individual and collective interests are served. Leadership involves the process of influencing others to understand and agree on what needs to be done, as well as facilitating efforts to achieve shared objectives, (Gardner & Barcella, 2015). Transformational leadership goes a step further, inspiring followers to pursue an idealized vision based on shared values. In this interactive process, leaders guide and support their followers in both individual and collective efforts, ultimately helping them grow and develop as leaders themselves. Transformational leadership fosters an environment where both personal and professional growth can occur, encouraging followers to go beyond their self-interests for the benefit of the group.

Highlights the four key distinctions that set transformational leadership apart from transactional leadership: 1) it develops followers into leaders, 2) it elevates followers' concerns from basic needs to higher psychological needs, 3) it inspires followers to transcend personal interests for the common good, and 4) it articulates a compelling vision that makes the challenges of change worthwhile. These distinctions demonstrate that transformational leadership is focused on long-term development, motivation, and creating an environment that supports both individual and organizational growth. Transformational leadership involves optimizing the use of organizational resources such as facilities, funds, and human resources to achieve significant goals, (Karnati & Wiratma, 2017a). This process is marked by the leader's ability to communicate, provide direction, offer support, set tasks, and make decisions that align with the organization's mission. It's clear that transformational leadership involves much more than influencing actions; it is about fostering growth, motivating followers, and guiding organizations through change with a clear, compelling vision for the future. Transformational leadership is further defined by Daft & Marcic, as the ability to bring about substantial change within both the followers and the organization, particularly

by leading changes in vision, strategy, and culture, as well as promoting innovation in products and technologies, (Daft & Marcic, 2022). Transformational leadership engages followers by creating a connection that raises the level of motivation and morality in both the leader and the follower, (Northouse, 2020). These definitions underscore that transformational leadership is an effective strategy for driving change, fostering innovation, and improving organizational performance. Describe transformational leadership as an approach that inspires and motivates subordinates to exceed expectations and lead positive change, (Margana et al., 2019). Key indicators include encouraging change, promoting innovation, building self-confidence, fostering new ways of thinking, and developing positive relationships. Identifies four dimensions of transformational leadership that are evident in teachers' perceptions: idealized influence, inspirational motivation, individual consideration, and intellectual stimulation, (Balyer, 2012). Rizki et al. expand on these dimensions, noting that transformational leadership involves empowering, inspiring, and stimulating followers to achieve organizational goals, (Rizki et al., 2023). This process includes fostering innovation, inspiring others, and developing each individual's potential through respect and individualized consideration. In summary, transformational leadership is characterized by a leader's ability to inspire and motivate followers, encourage innovative thinking, set a positive example, and support personal and professional growth. This leadership style helps organizations achieve their goals while simultaneously developing the next generation of leaders, and fostering a collaborative and innovative work environment.

#### *Self-Efficacy*

Another crucial factor is teachers' self-efficacy or their belief in their ability to perform teaching tasks. Teachers with high self-efficacy are more adaptable to changes and more willing to try new methods or techniques in teaching. In contrast, teachers who lack confidence may struggle to innovate, even if they possess the necessary knowledge or skills. Strengthening teachers' self-efficacy is essential for enabling them to confidently implement changes and innovations in their teaching practices. Self-efficacy, or self-belief, refers to an individual's confidence in their ability to complete a task or achieve a goal. Self-efficacy is one's belief in one's ability to be successful in a specific task and can be specific or general, emphasizing the importance of belief in one's capabilities, (Karwowski & Kaufman, 2017). Self-efficacy as the belief an individual has in their ability to complete tasks and responsibilities successfully, (Karnati & Wiratma, 2017b). Self-efficacy is "the belief in one's capabilities to perform a task," suggesting that such beliefs play a crucial role in motivating individuals to take on tasks they believe they can complete, (Griffin et al., 2020). Teacher self-efficacy as influencing not only teachers' commitment, burnout, and student achievement but also their willingness to adopt and implement educational reforms, (Chesnut & Burley, 2015). Teacher self-efficacy includes self-assessment of their skills and abilities to contribute knowledge that is valuable to others, (Widyani et al., 2017). This indicates that in the context of education, teachers' belief in their abilities significantly impacts their professional commitment, the ability to manage burnout, students' success, and their readiness to implement changes in the educational system. The concept of self-efficacy extends beyond education into various dimensions.

Six dimensions of teacher self-efficacy, including 1) Instruction, which involves a teacher's ability to instruct and guide students effectively; 2) Adapting instruction to meet individual student needs; 3) Motivating students to maintain their desire to learn; 4) Maintaining discipline in the classroom; 5) Cooperation with colleagues and parents to improve teaching quality; and 6) Coping with challenges in education, such as curriculum changes, (Djigić et al., 2014). This highlights the multifaceted nature of self-efficacy, where teachers not only assess their instructional skills but also their ability to engage with students, collaborate with others, and navigate challenges in the classroom. Self-efficacy influences the tasks people choose to undertake, their persistence in achieving goals, and their emotional responses to challenges, which ultimately affect their success, (Newman, 2019). Schwarzer & Warner designed a General Self-Efficacy Scale (GSE) to measure a person's self-efficacy across various tasks. Items in the scale reflect confidence in solving difficult problems, handling unforeseen situations, and maintaining calm under pressure, (Schwarzer, 2021). Self-efficacy encompasses an individual's belief in their ability to influence their environment and perform behaviors that lead to successful outcomes, (Hodges, 2018). Even if an individual knows the necessary actions to succeed, they may hesitate to act if they lack the confidence to perform those behaviors successfully. Three dimensions of self-efficacy: magnitude (task difficulty and

completion level), strength (perseverance in facing challenges), and generality (confidence across various tasks and situations), (Rizki et al., 2023). Listing indicators such as task mastery, persistence in the study, and optimism in facing challenges. In conclusion, self-efficacy is the belief in one's ability to accomplish tasks and achieve goals, which significantly influences effort, persistence, and emotional responses to challenges. Its dimensions include task selection, persistence, and belief across different areas and situations, which collectively shape individuals' approaches to challenges and success. In addition to transformational leadership and self-efficacy, the organizational climate in schools plays a vital role in fostering teachers' innovative behavior. A supportive organizational climate one that encourages collaboration, open communication, and the provision of adequate resources creates opportunities for teachers to share ideas and work together on innovations. In a positive organizational climate, teachers can provide feedback to each other, collaborate, and share experiences to improve their teaching practices. Moreover, principals who fully support innovation make teachers feel valued and motivated to keep innovating.

#### *Organizational Climate*

Organizational climate is a concept that refers to recurring and observable patterns of behavior within an organization, reflecting members' perceptions of the internal environment. Organizational climate as the recurring and observable patterns of behavior that characterize life within an organization or team, (Hoßbach, 2019). Employees' perceptions of the internal environment's atmosphere, which directly influences their work behavior, (Fahrurroziq et al., 2019). Organizational climate relates to members' perceptions of how an organization functions and the work environment in which they operate, (Irmains et al., 2017). Organizational climate is tied to the way formal and informal organizational elements are perceived and enacted through everyday behavior, (Mallah, 2016). Assert that good emotional intelligence can enhance the organizational climate in schools, (Listiyawati et al., 2022). Organizational climate as a reaction arising from the activities of organization members working together to achieve set goals, (Meliana et al., 2020). Organizational climate is understood through shared perceptions of policies, practices, and procedures that convey messages about what is valued and supported within the organization, (A. Chen, 2016). In conclusion, organizational climate encompasses shared perceptions of the work environment, policies, and interactions within an organization, which significantly influence productivity, motivation, and goal achievement. Key dimensions of organizational climate often discussed include responsibility, recognition, support, collaboration, and commitment, all of which affect how members interact and contribute to achieving collective goals.

#### *Study Framework and Hypotheses*

##### *Direct Effects on Innovative Behavior:*

- H1: Transformational leadership positively influences innovative behavior.
- H2: Self-efficacy positively influences innovative behavior.
- H3: Organizational climate positively influences innovative behavior.

##### *Direct Effects of Transformational Leadership:*

- H4: Transformational leadership positively influences self-efficacy.
- H5: Transformational leadership positively influences organizational climate.

##### *Direct Effects of Organizational Climate*

- H6: Organizational climate positively influences self-efficacy.

##### *Mediation Effects of Self-Efficacy*

- H7: Transformational leadership positively influences innovative behavior through self-efficacy.
- H8: Organizational climate positively influences innovative behavior through self-efficacy.

##### *Mediation Effects of Organizational climate*

- H9: Transformational leadership positively influences innovative behavior through organizational climate.

### Research Methodology

#### *Samples*

This study examines innovative behavior through transformational leadership, self-efficacy, and organizational climate. These variables also mediate other variables. Transformational leadership positively influences innovative behavior through self-efficacy. Transformational leadership positively influences innovative behavior through organizational climate. Through a quantitative approach, data were collected by distributing questionnaires to civil servant teachers. The questionnaire was in the form of a Google form. The sample size was determined using the Slovin formula (Ryan, 2013, p.20). The number of samples was 160 civil servant teachers in Bukittinggi City from a population of 265 using proportional sampling techniques. Demographic data revealed that out of 160 respondents, the number of men was 27 (16.88%) while the number of women was 133 (83.12%). Then in terms of age, those aged <30 years old numbered 19 people (11.88%), those aged 31-40 years numbered 40 people (25%), those aged 41-50 years numbered 54 people (33.75%), and those aged >50 years numbered 47 people (29.38%) where this age group is the largest sample size.

#### *Measurement*

Based on the conceptual definition, an instrument grid is compiled consisting of:

- **Transformational leadership:** The dimensions used to measure these variables were developed into indicators with 40 instrument items using a Likert scale. On the Likert scale, the alternative answers for positive statements were always = 5, often = 4, sometimes = 3, rarely = 2, and never = 1. The sub domains of this scale are idealized influence, inspirational motivation, intellectual stimulation, and individual consideration. A higher score means high transformational leadership, and Cronbach's  $\alpha$  was 0.977 for work transformational leadership in this study.
- **Self-efficacy:** The dimensions used to measure these variables were developed into indicators with 40 instrument items on a Likert scale. The sub domains of this scale were confidence in task selection, persistence in carrying out tasks, and confidence in various fields and conditions. Cronbach's  $\alpha$  was 0.978 for self-efficacy in this study.
- **Organizational climate:** The organizational climate was measured by using a 5-points Likert scale. The sub domains in this study were responsible, respectful, supportive, collaborative, and committed. Cronbach's  $\alpha$  = 0.976 for organizational climate in this study.
- **Innovative behavior:** Innovative behavior was measured by using a 5-point Likert scale. The sub domains of this study were idea generation, idea search, idea communication, implementation initiation activities, involving others, and overcoming obstacles. In this study, Cronbach's  $\alpha$  = 0.975.

#### *PLS-SEM estimation*

Data processing using Structural Equation Modeling (SEM), using SmartPLS software. All data obtained from the distribution of instruments X1, X2, X3, and Y are entered and processed using smartPLS software. The results of the model scheme processing include model measurements (outer model) and structural model testing (inner model).

- **Model First Order SEM:** Measurement model or outer model includes reflective and formative model measurements. By calculating in PLS algorithm analyzes the measurement model between independent variables and dependent variables to evaluate validity, reliability, and classical assumption tests.
- **Model Second Order SEM:** The structural model (inner model) is the result of analysis using the calculate PLS algorithm in the PLS program.

### Result

#### *Measurement Model*

Tabel 1 menyajikan statistik deskriptif . The data collected in the field and statistically processed revealed frequency distributions for the variables of innovative behavior (Y), transformational leadership (X1), self-

efficacy (X2), and organizational climate (X3). Based on Sturges' rule, the number of classes for the Y variable was four, with a range of 119, a mean of 161.40, a standard deviation of 22.933, a variance of 525.952, a median of 160, and a mode of 200. For the X1 variable, the number of classes was five, with a range of 120, a mean of 161.91, a standard deviation of 22.82, a variance of 520.95, a median of 160, and a mode of 200. For the X2 variable, five classes were also obtained with a range of 112, a mean of 161.74, a standard deviation of 22.36, a variance of 500.23, a median of 160, and a mode of 200. Lastly, for the X3 variable, five classes were identified with a range of 112, a mean of 162.46, a standard deviation of 21.98, a variance of 483.37, a median of 160, and a mode of 200. In constructing histograms, the vertical axis represents the frequency, while the horizontal axis shows the class interval boundaries, ranging from 81 to 200 for Y, 80 to 200 for X1, and 88 to 200 for both X2 and X3.

**Table 1. Statistik Deskriptif**

Statistics		Perilaku Inovatif	Kepemimpinan Transformasional	Efikasi Diri	Iklm Organisasi
N	Valid	160	160	160	160
	Missing	0	0	0	0
Mean		161.4000	161.9188	161.7438	162.4688
Median		160.0000	160.0000	160.0000	160.0000
Mode		200.00	200.00	200.00	200.00
Std. Deviation		22.93365	22.82445	22.36581	21.98568
Variance		525.952	520.956	500.230	483.370
Minimum		81.00	80.00	88.00	88.00
Maximum		200.00	200.00	200.00	200.00

Table 2 shows the results of the calculation of Cronbach alpha and composite reliability. It can be seen that all variables have a Cronbach alpha value and a composite reliability value > 0.7, which proves that all variables are said to be reliable and the model can be used.

**Tabel 2. Cronbach alpha**

	Cronbach's alpha	Composite reliability (rho_a)
Efikasi Diri	0.978	0.979
Iklm Organisasi	0.976	0.977
Kepemimpinan Transformasional	0.977	0.978
Perilaku Inovatif	0.975	0.976

By looking at the variance inflation factor (VIF) value of each indicator, it is known that all values <5 which indicates the absence of multicollinearity, namely the absence of correlation between independent variables which can cause a large standard error and small t count (Ghozali, 2021: 72).

*Struktural Model Penilaian: PLS- SEM*

Hypothesis testing using the Structural Equation Modeling (SEM) technique aims to determine whether there is a direct

or indirect effect. The direct effect is the effect of exogenous variables on endogenous variables while the indirect effect is the effect of exogenous variables on endogenous variables through other variables or moderator variables. After various tests have been carried out previously, the next step is to test the path coefficient. This is used to determine whether each path has a significant coefficient (marked with a P value <0.05). If significant, it can be concluded that all hypotheses are accepted. In Table 3, it can be seen that all paths have P values <0.05, which means that all hypotheses cannot be rejected.

**Tabel 3. Hypothesis Testing And Path Analysis Results**

Variable	Original sample (O)	T statistics ( O/STDEV )	P values
Self-efficacy -> Innovative behavior	0.234	2.080	0.032
Organizational climate -> Self-efficacy	0.418	7.500	0.000
Organizational climate -> Innovative behavior	0.205	2.561	0.010
Transformational leadership -> Self-efficacy	0.581	10.418	0.000
Transformational leadership -> Organizational climate	0.991	545.358	0.000
Transformational leadership -> Innovative behavior	0.136	2.631	0.013
Organizational climate -> Self-efficacy -> Innovative behavior	0.203	2.561	0.010
Transformational leadership -> Self-efficacy -> Innovative behavior	0.234	2.080	0.032
Transformational leadership -> Organizational climate -> Innovative behavior	0.418	7.5	0.000

The results in Table 3 provide strong evidence to support the hypothesis. Innovative behavior is directed towards transformational leadership: (H1) transformational leadership has a direct positive effect on innovative behavior (O = 0.136). Self-efficacy shows a large positive effect on innovative behavior: (H2) self-efficacy has a direct positive effect on innovative behavior (O = 0.234). Organizational climate is directed towards innovative behavior: (H3) Organizational climate has a direct positive effect on innovative behavior (O = 0.205).

For transformational leadership, transformational leadership on organizational climate is greater than self-efficacy. (H4) Transformational leadership has a direct positive effect on self-efficacy (O = 0.581). (H5) Transformational leadership has a direct positive effect on organizational climate (O = 0.991). For organizational climate, (H6) Organizational climate has a direct positive effect on self-efficacy (O = 0.418).

For mediation of self-efficacy. (H7) Transformational leadership has an indirect positive effect on innovative behavior through self-efficacy (O = 0.234). H8: Organizational climate has a positive effect on innovative behavior through self-efficacy (O = 0.203). H9: Transformational leadership has an indirect positive effect on innovative behavior through organizational climate (O = 0.418).

Collectively, these results underscore the nuanced effects of innovative behavior through transformational leadership, self-efficacy, and organizational climate in Junior High Schools, Indonesia.

Figure 1 is a bootstrapping test. By using the SmartPLS application, the algorithm test is sufficient to answer the proposed hypothesis. However, there is an additional function, namely bootstrapping, which is used to increase confidence in the results obtained based on PLS analysis. The method is to increase the data by n (determined by the researcher). The results obtained will be described below:

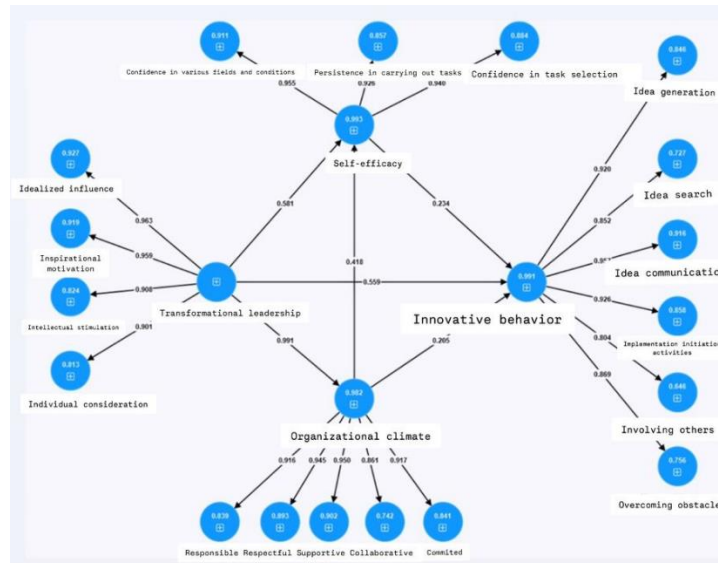


Figure 1. Structural Model (Bootstrapping)

**Discussion**

This study was conducted to examine the direct and indirect effects of transformational leadership, self-efficacy, organizational climate, and teachers' innovative behavior. According to the results of this study, the discussion is as follows.

*Transformational leadership on innovative behavior*

Transformational leadership played a crucial role in encouraging teachers' innovative behavior. Transformational leadership has four main indicators: idealized influence, inspirational motivation, intellectual stimulation, and individualized attention. Leadership based on inspiration and innovative thinking can encourage teachers to take more risks in trying new approaches to teaching. Principals who apply transformational leadership can create a supportive environment for collaboration and improving the quality of education. Principals are required to have competencies in managerial, social and leadership skills, (Indonesia, 2007). This study recommends that principals integrate transformational leadership style in their leadership tasks to encourage development and innovation in schools. Transformational leadership has an important role in driving change within organizations, especially in improving the innovative behavior of its members. Leaders with transformational leadership style can inspire and encourage change, providing space for members to experiment and share ideas, (Daft & Lane, 2008). Transformational leadership also has a significant impact on teacher self-efficacy, which ultimately contributes to the enhancement of innovative behavior, (Rizki et al., 2023). In addition, transformational leadership creates a positive organizational climate and encourages member involvement in the innovation process, (Park et al., 2022).

*Self-efficacy on teachers' innovative behavior*

Self-efficacy is a key factor influencing teachers' innovative behavior. Self-efficacy refers to a teacher's belief in his or her ability to deal with tasks and challenges in teaching. The three main indicators of self-efficacy are confidence in task selection, perseverance in tasks execution, and confidence in various fields and conditions. The study shows that teachers with high self-efficacy tend to be more confident in applying innovative ideas to their teaching. Self-efficacy can be enhanced by strong personality traits, as outlined in Government Regulation No. 19 of 2005, which includes pedagogical, personal, professional, and social competencies. Teachers with high self-efficacy are expected to improve their teaching performance and quality in the classroom. Self-efficacy refers to an individual's belief in their ability to succeed in specific tasks, including innovative efforts. Leaders who demonstrate entrepreneurial behavior are more likely to motivate employees with high creative self-efficacy to engage in innovative behaviors, (Newman, 2019). Individuals with high self-efficacy are more likely to take on challenging and risky tasks, including innovative activities, (Mielniczuk, 2020). In addition, individuals with high

self-efficacy are more likely to engage in innovative behavior when working in a supportive organizational climate, (Jaiswal, 2015).

*Organizational climate on teachers' innovative behavior*

The organizational climate in schools plays a crucial role in supporting teachers' innovative behaviors. A positive organizational climate includes respectful relationships, support, collaboration and commitment between teachers, students and school management. In creating a climate conducive, schools should give teachers the freedom to try new approaches in teaching, establish effective communication channels between teachers and principals, and recognize teachers' contributions to learning development. This research also shows that adequate facilities are essentials in creating a climate that supports innovation. With a supportive organizational climate, teachers are more motivated to develop new ideas and improve the quality of their teaching. An organizational climate that supports innovation is an important factor in encouraging innovative behavior. Without a climate conducive to innovation, ideas will only remain ideas without being transformed into tangible creative outcomes, (T. Chen, 2016). To create the best condition for innovative learning, alignment between teaching, space, and organizational management is required, (Imms & Kvan, 2020). An organizational climate that supports innovation plays an important role in improving innovative performance in an organization.

*Transformational leadership on self-efficacy*

Transformational leadership has a direct positive and significant effect on self-efficacy. The greater the improvement in transformational leadership, it will have an impact on increasing self-efficacy. This study is in line with previous research that explored the impact of principals' transformational leadership style on self-efficacy. Regression analysis showed that eleven transformational leadership variables affected teachers' self-efficacy at different levels, with non-zero coefficients. This study recommends that school principals continue to improve their leadership skills, as well as encourage innovation and transformation in schools to further improve teachers' self-efficacy, (Muliati et al., 2022). Transformational leaders influence their followers through appropriate behaviors, (Podsakoff et al., 2014).

There is a significant relationship between the components of principals' leadership behaviours and teachers' sense of self-efficacy. The findings also showed that the two components of principals' leadership behaviours, that is, idealized influence and intellectual stimulation, can predict changes in teachers' sense of self-efficacy, (Mehdinezhad & Mansouri, 2016). Therefore, the application of transformational leadership style by school principals can have a positive impact on increasing self-efficacy.

*Transformational leadership on organizational climate*

Transformational leadership has a direct positive and significant effect on organizational climate. The greater the improvement in transformational leadership, it will have an impact on the organizational climate. Leadership has a significant positive influence on organizational climate. The results revealed a significant positive effect of leadership on the organizational climate. These findings emphasize the important role of a leader in shaping and influencing the overall organizational climate, (Karada Ğ, 2015).

*Organizational climate has a direct positive effect on self-efficacy*

Organizational climate has a direct positive effect on self-efficacy. The greater the improvement in organizational climate, it will have an impact on increasing self-efficacy. A creative climate has a positive and significant influence on self-efficacy, which indicates that a creative work atmosphere can enhance individuals' self-confidence. Jaiswal & Dhar stated that "... on existence of supportive innovation climate negatively affects the individual's belief about his or her creative capability even when he or she is capable enough. In this way, the findings of the study call for a viable debate about the potential moderating role of creative self-efficacy in determining the effect of different contextual factors in predicting individual creative behavior", (Jaiswal, 2015). The positive organizational climate provides an important boost to self-efficacy, as individuals feel supported and valued in carrying out their tasks in new and creative ways. Without this support, self-efficacy may decline, even though actual abilities remain unchanged.

Transformational leadership has positive and significant indirect effect on innovative behavior through self-efficacy. The greater the improvement in transformational leadership, the more innovative behavior will increase through self-efficacy. Transformational leaders are able to build self-confidence in organizational members by providing an inspiring vision. These leaders foster self-efficacy in their followers, making them feel capable of performing creative tasks effectively. Employees who are inspired by transformational leader experience psychological empowerment, where they clearly understand the organization's expectation of them, and are able to adjust their skills and behaviors to meet the demands, performance outcomes, and existing expectations. Additionally, they feel a higher sense of mastery over the tasks and work environment they face, (Afsar, 2017). Providing greater autonomy and control in decision-making to employees can encourage them to become more actively involved in the creative process, (Volmer et al., 2012). By applying a transformational leadership style, school leaders can help develop teachers' creative skills and increase effectiveness in the teaching and learning process, (Abdul Ghani Kanesan Abdullah et al., 2016). Transformational leadership is the ability of a leader to inspire employees to have self-confidence and trust in achieving higher performance, making changes, and working efficiently for the benefit of the organization. Self-efficacy is an individual's belief in their ability to successfully perform a specific task or behavior, (Jones, n.d.). If a principal carry out behaviors in line with the indicators of transformational leadership, it will have an impact on increasing teachers' innovative behavior, mediated by their self-efficacy.

*Transformational leadership on innovative behavior through organizational climate.*

Transformational leadership has a positive and significant indirect effect on innovative behavior through organizational climate. The greater the improvement in transformational leadership, the greater the impact on increased innovative behavior through organizational climate. It was determined that there was a significant relationship between innovative climate and teachers' innovative behavior. Innovative climate was found to partially mediate the relationship between principals' leadership empowerment behavior and teachers' innovative, (Mesut Sagnak, 2012). An innovative climate was found to partially mediate the relationship between principals' leadership empowerment behavior and teachers' innovative behavior. Transformational leaders empower their employees to work independently without supervision and control. Employees feel empowered in the environment created by transformational leaders. Transformational leadership has a positive relationship with group cohesion and group efficacy, (Sağnak et al., 2015).

*Organizational climate on innovative behavior through self-efficacy*

Organizational climate has a direct positive and significant effect on innovative behavior through self-efficacy. The greater the improvement in organizational climate, the greater the impact on increased innovative behavior through self-efficacy.

A positive relationship between individual innovative work behavior and individual perceptions of ethical leadership, both at the individual and group levels, (Yidong, 2013). Work engagement has a positive impact on innovative work behavior and contributes to organizational performance, (Waheed et al., 2017). Research by Purnama obtained research results that are in line with this point, (Purnama, 2020). One key variable that can explain the increase in innovative work behavior is self-efficacy, or the belief in one's ability to act based on their capabilities."

*Praktis Implikasi*

The results of this study can be useful for teachers, principals, and stakeholders in the field of education so that innovation is always improved according to the needs of Indonesian education and the development of the times.

Transformational Leadership: The indicator "becoming a role model" has the highest value, encouraging teachers to imitate the positive attitude of the principal and improving teamwork. Conversely, the indicator "encouraging superior performance" has the lowest value, so a strategy is needed to improve it to improve teachers' innovative behavior.

Self-Efficacy: The indicator "confidence in choosing tasks" gets the highest value and needs to be maintained. The indicator

"persistence in carrying out tasks" has the lowest value, so it needs to be improved so that teachers are more consistent in achieving targets, which leads to increased innovative behavior.

**Organizational Climate:** The indicator "appreciating (fairness)" has the highest value and needs to be maintained. Conversely, the indicator "collaboration" has the lowest value and needs to be improved to support teachers' innovative behavior through more effective collaboration strategies.

**Teacher Innovative Behavior:** The indicator "starting implementation" has the highest value, while "communicating ideas" has the lowest value. Improvement strategies are needed to strengthen teachers' ability to share ideas and persuade colleagues, which will ultimately improve innovative behavior.

### Limitations

This research provides valuable insights. However, this study is limited to civil servant teachers in Bukittinggi City, so the findings may not be generalized to other regions or educational levels. School principals should focus on enhancing their transformational leadership and creating a supportive organizational environment to foster teacher innovation.

### Future Research Directions

**Contextual Extension:** Future research should test this model by involving non-civil servant teachers as well so that we can compare and provide a broader scope.

**Longitudinal Study:** A longitudinal approach would provide deeper insights into how sustainable CSR efforts impact customer loyalty over time.

**Additional Mediators:** Future research could explore other variables such as organizational learning, performance, knowledge sharing, and organizational culture.

**Qualitative Insights:** Incorporating qualitative methods, such as interviews, can provide a richer understanding of teachers' innovative behavior.

### Conclusion

This study provides an in-depth understanding of the role of transformational leadership, self-efficacy, and organizational climate in enhancing teachers' innovative behavior. By showing the critical path through collaboration, idea communication, and persistence, and highlighting the influence of job satisfaction, this study provides a solid foundation for theoretical advancement and practical application. Schools can utilize transformational leadership, self-efficacy, and organizational climate not only as internal management strategies, but also as tools to encourage teachers' innovative behavior and improve the quality of education sustainably.

### Reference

- [1] Abdul Ghani Kanesan Abdullah, Ling, Y. L., & Zahrana Sheik Abdul Kader. (2016). Principal's transformational leadership and teacher's creativity: Mediating role of self efficacy. *Management Research Journal*, 5(1), 1–7.
- [2] Adrian, A., Fiza, A. K., & Zulvia, Y. (2022). Job Insecurity and Innovative Work Behavior: Case Study on Hotel Employees During covid 19. Eighth Padang International Conference On Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA-8 2021), 659, 346–353. <https://www.atlantis-press.com/proceedings/piceeba-8-21/125976361%0Ahttps://www.atlantis-press.com/article/125976361.pdf>
- [3] Afsar, B. (2017). Transformational and transactional leadership and employee's entrepreneurial behavior in knowledge-intensive industries. *International Journal of Human Resource Management*, 28(2), 307–332. <https://doi.org/10.1080/09585192.2016.1244893>
- [4] Anindhyta, C., Karnati, N., & Suryadi, S. (2023). Digital leadership in enhancing research innovation culture in higher education: Avenue for further research. *Journal of Educational Management and Instruction (JEMIN)*, 3(1), 9–21. <https://ejournal.uinsaid.ac.id/index.php/jemin/article/view/7135>
- [5] Asurakkody, T. A., & Shin, S. Y. (2018). Innovative Behavior in Nursing Context: A Concept Analysis. *Asian*

- [6] Balyer, A. (2012). Transformational leadership behaviors of school principals: A qualitative research based on teachers' perceptions. *International Online Journal of Educational Sciences*. <https://www.academia.edu/download/84965055/acarindex-1423904284.pdf>
- [7] Bos-Nehles, A. (2017). HRM and innovative work behaviour: a systematic literature review. *Personnel Review*, 46(7), 1228–1253. <https://doi.org/10.1108/pr-09-2016-0257>
- [8] Chen, A. (2016). The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination. *Leadership Quarterly*, 27(1), 1–13. <https://doi.org/10.1016/j.leaqua.2015.10.007>
- [9] Chen, T. (2016). When Does Supervisor Support Encourage Innovative Behavior? Opposite Moderating Effects of General Self-efficacy and Internal Locus of Control. *Personnel Psychology*, 69(1), 123–158. <https://doi.org/10.1111/peps.12104>
- [10] Chesnut, S. R., & Burley, H. (2015). Self-efficacy as a predictor of commitment to the teaching profession: A meta-analysis. *Educational Research Review*, 15, 1–16. <https://doi.org/10.1016/j.edurev.2015.02.001>
- [11] Daft, R. L., & Lane, P. G. (2008). *The Leadership Experience Fourth Edition*. In *Marketing Communications*.
- [12] Daft, R. L., & Marcic, D. (2022). *Understanding Management*.
- [13] Djigić, G., Stojiljković, S., & Dosković, M. (2014). Basic Personality Dimensions and Teachers' Self-efficacy. *Procedia - Social and Behavioral Sciences*, 112(Iceepsy 2013), 593–602. <https://doi.org/10.1016/j.sbspro.2014.01.1206>
- [14] Fahrurrozziq, A., Sujanto, B., & Suryadi, S. (2019). the Effect of Personality and Climate Organization on Job Satisfaction Private Teachers of Technical High School. *Ijer - Indonesian Journal of Educational Review*, 6(2), 14–26. <http://journal.unj.ac.id/unj/index.php/ijer/article/view/13804>
- [15] Gardner, R., & Barcella, W. (2015). Cross-Cultural Conflict Resolution Revisited: A Micro Study. *Conflict Studies Quarterly*. <http://www.csq.ro/wp-content/uploads/CSQ-11.-Gardner-Barcella.pdf>
- [16] Griffin, R. W., Phillips, J. M., & Gully, S. M. (2020). *Organizational Behavior - Managing People and Organizations* (13e). In Cengage Learning, Inc.
- [17] Hodges, C. B. (2018). Self-efficacy in instructional technology contexts. In *Self-Efficacy in Instructional Technology Contexts*. <https://doi.org/10.1007/978-3-319-99858-9>
- [18] Hoßbach, C. (2019). Organizational climate for creativity: Exploring the influence of distinct types of individual differences.
- [19] Imms, W., & Kvan, T. (2020). Teacher Transition into Innovative Learning Environments. In *Teacher Transition into Innovative Learning Environments: a Global Perspective*. [https://doi.org/10.1007/978-981-15-7497-9\\_1](https://doi.org/10.1007/978-981-15-7497-9_1)
- [20] Indonesia, P. M. P. N. R. (2007). PERATURAN MENTERI PENDIDIKAN NASIONAL REPUBLIK INDONESIA NOMOR 19 TAHUN 2007 TENTANG STANDAR PENGELOLAAN PENDIDIKAN OLEH SATUAN PENDIDIKAN DASAR DAN MENENGAH. *Ятытат, вы12у(235)*, 245.
- [21] Irmains, I., Mukhtar, M., & Sari, E. (2017). The effect of personality, work procedure, and organization climate toward the leader effectiveness of senior high school principals in DKI Jakarta Province. *IJER-INDONESIAN JOURNAL OF ...* <http://journal.unj.ac.id/unj/index.php/ijer/article/view/5105>
- [22] Jaiswal, N. K. (2015). Transformational leadership, innovation climate, creative self-efficacy and employee creativity: A multilevel study. *International Journal of Hospitality Management*, 51, 30–41. <https://doi.org/10.1016/j.ijhm.2015.07.002>
- [23] Karada Ğ, E. (2015). Leadership and organizational outcomes: Meta-analysis of empirical studies. *Leadership and Organizational Outcomes: Meta-Analysis of Empirical Studies*, February 2015, 1–273.

- [24] Karnati, N., & Wiratma, D. A. (2017a). Pengaruh Kepemimpinan Transformasional Dan Efikasi Diri Terhadap Kepuasan Kerja Guru Di SMP Yayasan Budi Mulia Lourdes Jakarta. *Jurnal Sosial Humaniora*, 8(2), 85–92.
- [25] Karnati, N., & Wiratma, D. A. (2017b). Pengaruh Kepemimpinan Transformasional Dan Efikasi Diri Terhadap Kepuasan Kerja Guru the Effect of Transformational Leadership and Self Efficacy of the Job Satisfaction Teacher. *Jurnal Sosial Humaniora*, 8, 85.
- [26] Karwowski, M., & Kaufman, J. C. (2017). The creative self: Effect of beliefs, self-efficacy, mindset, and identity. In *The Creative Self: Effect of Beliefs, Self-Efficacy, Mindset, and Identity*. <https://doi.org/10.1016/C2015-0-07011-3>
- [27] Listiyawati, L., Sari, E., & Hanafi, I. (2022). Teacher’s Emotional Intelligence, Class Management, and School Organizational Climate, on Interaction Behavior among Teachers and Students. *Journal of Social Science*, 3(4), 656–665. <https://doi.org/10.46799/jss.v3i4.376>
- [28] Lukes, M. (2017). Measuring employee innovation: A review of existing scales and the development of the innovative behavior and innovation support inventories across cultures. *International Journal of Entrepreneurial Behaviour and Research*, 23(1), 136–158. <https://doi.org/10.1108/IJEBR-11-2015-0262>
- [29] Mallah, T. (2016). Creating an organizational climate for communication: internal communication and leadership in a project-based international organization: the case of UNOPS. [trepo.tuni.fi](https://trepo.tuni.fi). <https://trepo.tuni.fi/handle/10024/100081>
- [30] Margana, G. S., Widodo, S. E., & Mukhtar, M. (2019). A Study of the Influence of Transformational Leadership, Organizational Learning on Employees Innovative Behavior and Work Engagement at Sekolah Bahasa Polri. 343(Icas), 214–219. <https://doi.org/10.2991/icas-19.2019.44>
- [31] Mehdinezhad, V., & Mansouri, M. (2016). School principals’ leadership behaviours and its relation with teachers’ sense of self-efficacy. *International Journal of Instruction*, 9(2), 51–60. <https://doi.org/10.12973/iji.2016.924a>
- [32] Meliana, I., Suryadi, S., & Rosidi, U. (2020). Effect of Leader Member Exchange Leadership Style and Organizational Climate on Innovative Work Behavior of Banten Provincial Education Office Employees. 400(Icream 2019), 359–363. <https://doi.org/10.2991/assehr.k.200130.202>
- [33] Mesut Sagnak. (2012). The empowering leadership and teachers’ innovative behavior: The mediating role of innovation climate. *African Journal of Business Management*, 6(4), 1635–1641. <https://doi.org/10.5897/ajbm11.2162>
- [34] Mielniczuk, E. (2020). Positive Affect Mediates the Relationship Between Self-efficacy and Innovative Behavior in Entrepreneurs. *Journal of Creative Behavior*, 54(2), 267–278. <https://doi.org/10.1002/jocb.364>
- [35] Muliati, L., Asbari, M., Nadeak, M., Novitasari, D., & Purwanto, A. (2022). INTERNATIONAL JOURNAL OF SOCIAL AND MANAGEMENT STUDIES (IJOSMAS) Elementary School Teachers Performance: How The Role of Transformational Leadership, Competency, and Self-Efficacy? *International Journal of Social and Management Studies*, 3(1), 158–166. <https://www.ijosmas.org>
- [36] Newman, A. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, 110, 403–419. <https://doi.org/10.1016/j.jvb.2018.05.012>
- [37] Niesen, W., Van Hootegem, A., Elst, T. Vander, Battistelli, A., & De Witte, H. (2017). Job insecurity and innovative work behaviour: A psychological contract perspective. *Psychologica Belgica*, 57(4), 174–189. <https://doi.org/10.5334/pb.381>
- [38] Northouse. (2020). *Introduction to Leadership*.
- [39] Park, J., Han, S. J., Kim, J., & Kim, W. (2022). Structural relationships among transformational leadership,

affective organizational commitment, and job performance: the mediating role of employee engagement. *European Journal of Training and Development*, 46(9). <https://doi.org/10.1108/EJTD-10-2020-0149>

- [40] Podsakoff, N. P., Podsakoff, P. M., & ... (2014). Consequences of unit-level organizational citizenship behaviors: A review and recommendations for future research. ... *Behavior*. <https://doi.org/10.1002/job.1911>
- [41] Purnama, Y. H. (2020). Peran efikasi diri sebagai pemediasi pada pengaruh iklim kreatif dan iklim keadilan terhadap perilaku kerja inovatif. 15(2), 1–23.
- [42] Rizki, M., Hasan, D., Hanafi, I., & Sari, E. (2023). the Effect of Transformational Leadership, Organizational Learning and Self-Efficacy on the Innovative Behavior of Elementary School Teachers in City of Depok. *Russian Law Journal*, XI(3), 3.
- [43] Saġnak, M., Kuruöz, M., Polat, B., & Soylu, A. (2015). Transformational leadership and innovative climate: An examination of the mediating effect of psychological empowerment. *Eurasian Journal of Educational Research*, 60, 149–162. <https://doi.org/10.14689/ejer.2015.60.9>
- [44] Schwarzer, R. (2021). The General Self-Efficacy Scale ( GSE ). January 2012.
- [45] Thurlings, M., Evers, A. T., & Vermeulen, M. (2015). Toward a Model of Explaining Teachers' Innovative Behavior: A Literature Review. *Review of Educational Research*, 85(3), 430–471. <https://doi.org/10.3102/0034654314557949>
- [46] Volmer, J., Spurk, D., & Niessen, C. (2012). Leader-member exchange (LMX), job autonomy, and creative work involvement. *Leadership Quarterly*, 23(3), 456–465. <https://doi.org/10.1016/j.leaqua.2011.10.005>
- [47] Waheed, A., Xiao-Ming, M., Ahmad, N., & Waheed, S. (2017). Impact of work engagement and innovative work behavior on organizational performance; Moderating role of perceived distributive fairness. *International Conference on Management Science and Engineering - Annual Conference Proceedings, 2017-Augus*, 127–133. <https://doi.org/10.1109/ICMSE.2017.8574390>
- [48] Widyani, A. A. D., Sarmawa, I. W. G., & Dewi, I. G. A. M. (2017). the Roles of Knowledge Sharing in Mediating the Effect of Self-Efficacy and Self-Leadership Toward Innovative Behavior. *Jurnal Manajemen Dan Kewirausahaan*, 19(2), 112–117. <https://doi.org/10.9744/jmk.19.2.112-117>
- [49] Yidong, T. (2013). How Ethical Leadership Influence Employees' Innovative Work Behavior: A Perspective of Intrinsic Motivation. *Journal of Business Ethics*, 116(2), 441–455. <https://doi.org/10.1007/s10551-012-1455-7>
- [50] Zhu, J., Yao, J., & Zhang, L. (2019). Linking empowering leadership to innovative behavior in professional learning communities: the role of psychological empowerment and team psychological safety. *Asia Pacific Education Review*, 20(4), 657–671. <https://doi.org/10.1007/s12564-019-09584-2>