



Emotional Intelligence and Teachers' Entrepreneurial Behavior: A Gender – Based Analysis in Surakarta

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Abstract: This study aims to analyze the influence of emotional intelligence on teachers' entrepreneurial behavior with gender involvement as a moderating variable. This study uses a quantitative survey method. The sample used was a group consisting of 102 teachers from SMK Negeri 1 Surakarta and SMK Negeri 6 Surakarta. The instrument used in this study was a closed-ended questionnaire and the data analysis technique used a hierarchical regression model analysis. The results showed that emotional intelligence had a direct and positive influence on teachers' entrepreneurial behavior with coefficient of determination (R²) of 0.596 and gender did not moderate the influence of emotional intelligence on teachers' entrepreneurial behavior. This study provides for school principals providing emotional intelligence development facilities in the form of emotion management training and proportional work policies can reduce pressure that impacts teacher emotional well-being on optimizing implementation teacher's entrepreneurial behavior in both female and male teachers.

Article History

Received: 30-11-2025

Revised: 22-12-2025

Accepted: 05-12-2026

Published: 20-01-2026

Key Words:

Emotional Intelligence;
Teachers' Entrepreneurial
Behavior; Gender.

How to Cite: Setianingrum, A. N., Susilaningsih, S., & Sabandi, M. (2026). Emotional Intelligence and Teachers' Entrepreneurial Behavior: A Gender-Based Analysis in Surakarta . *Jurnal Paedagogy*, 13(1), 331-340. <https://doi.org/10.33394/jp.v13i1.19109>



<https://doi.org/10.33394/jp.v13i1.19109>

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Introduction

The development of education in the 21st century requires teachers to possess various skills to fulfill their roles as innovators and developers of learning strategies (Maba et al., 2023). These skills include creativity, initiative, innovation (Em et al., 2021) and the courage to take risks in experimenting with innovative methods (Akkaya, 2021) which are essentially the same as the characteristics of entrepreneurs (Barringer, 2016). The entrepreneurial characteristics of teachers are better known as entrepreneurial behavior of teachers. Teacher entrepreneurial behavior is teachers who have entrepreneurial characteristics as demonstrated by attitudes, values, and actions during learning practices, such as proactively finding opportunities and daring to take risks to produce innovative learning methods (Ho et al., 2020; Liu et al., 2024; Martín et al., 2021). In addition, teachers' entrepreneurial behavior is demonstrated by their ability to utilize pedagogical communities (Neneh, 2019) to develop creative and innovative ideas by utilizing technology that has an impact on improving the quality of learning and education (Ho & Lu, 2024; Sirait, 2021; Suhartini, 2022).

Teachers' entrepreneurial behavior is needed in vocational schools based on Law No. 20 of 2003, which states that education in vocational schools aims to develop students' potential and readiness to work in accordance with the needs of specific fields of work. In this context, it shows that entrepreneurial behavior of teachers is part of the professional competencies that must be possessed by teachers in vocational schools so that they are able to develop teaching materials that meet industry needs (Sulawartisari & Kardiyem, 2023), respond to the uncertainty of quasi-market conditions in education such as industry needs,



develop pedagogical and curricular innovations so that they are able to adapt learning to the dynamics of the world of work (Ho et al., 2021) so that teachers' entrepreneurial behavior not only plays a role in developing students' skills according to industry needs but also as the main driver of transformation in creating a positive environment and building a culture of innovation that is in line with the achievement of educational goals (Ho & Chen, 2025; Martin et al., 2018).

The entrepreneurial behavior of these teachers shows that they have a strategic role in achieving educational goals in vocational schools, but in practice, it is not yet fully optimal, as teachers with low creativity are shown in the aspect of connecting ideas to real innovation, scoring 3.91 out of 5 (Neto et al., 2018). Additionally, teachers with negative emotional experiences and emotional dysregulation have reduced creativity and flexibility of thinking in recognizing existing opportunities and designing educational solutions (Durnali et al., 2023; Tajabadi & Meihami, 2024). The findings of Ho & Chen (2025) show that teachers with negative emotions, with an average score of 3.99, have a negative impact on emotional capital in participating in innovation and maintaining a positive classroom atmosphere. Other findings from Barco et al (2021) indicate that negative emotions will affect other personal aspects such as motivation, concentration, or interest in carrying out academic tasks. When negative emotions are more dominant and it is difficult to regulate emotions, this will have an impact on teachers' emotional exhaustion (Mulyani et al., 2021; Wang & Burić, 2023). This is reinforced by the findings Marken & Afrawal (2022) that female teachers experience emotional exhaustion of 55% while male teachers experience emotional exhaustion of 45%. Therefore, teachers must be able to manage their emotions well, one of which is through strengthening emotional intelligence. Emotional intelligence can be defined as the ability to recognize, understand, and manage emotions optimally, both for oneself and others, empathy, and social skills (Goleman, 2020). Emotional intelligence will help teachers manage their own emotions, respond to the emotional needs of students, increase cognitive flexibility, and strengthen relationships between teachers, students, and educational staff in the school environment (Wang & Burić, 2023; Zhao et al., 2025). Additionally, emotional intelligence will encourage teachers to adopt more optimal innovations as a form of implementing more effective entrepreneurial behavior among teachers (Akar & Üstüner, 2017; Ho & Chen, 2025).

In line with the relationship between emotional intelligence and entrepreneurial behavior, it has been studied within a business framework, such as the findings of Pathak & Muralidharan (2024) dan Puerta et al (2022) that emotional intelligence has a positive and significant influence on corporate innovation. Furthermore, emotional intelligence and entrepreneurial behavior have been widely studied in students, such as the findings of Núñez et al (2022) dan Karimi & Ataei (2023) which show that emotional intelligence can strengthen student's entrepreneurial behavior. Literature discussing the relationship between emotional intelligence and teacher entrepreneurial behavior is still relatively limited, such as the findings of Sila (2022) that emotional intelligence is an indicator for measuring teacher entrepreneurial behavior and the findings of Su et al (2022) that emotional intelligence is positively correlated with teacher creative teaching. These findings have not been fully generalized, especially regarding teacher entrepreneurial behavior, especially in Vocational High Schools (SMK). Furthermore, the addition of gender as a moderating variable in this relationship has not been studied. Therefore, this study was conducted to fill the research gap and the emergence of this research novelty in the form of examining the influence of



emotional intelligence on the entrepreneurial behavior of vocational school teachers in Surakarta by considering gender as a moderating variable.

This research uses the attitudinal theory popularized by Ajzen & Fishbein (1973) an individual's behavior is shaped by attitudes with three main components: cognitive, affective, and conative. The affective component describes the feeling that arises as a response to the object of the object of the attitude. Rationally, this affective component describes teacher's feelings in the form of positive feelings such as enthusiasm, interest, and pride in carrying out learning innovations. Therefore, to maintain positive feelings, the ability to recognize and manage emotions (emotional intelligence) is needed, which ultimately forms an open and adaptive attitude toward changes in the learning process. Thus, the affective component in the form of emotional intelligence becomes an important foundation that encourages the application of teacher's entrepreneurial behavior.

Differences in teachers' personal characteristics, including gender, are important factors that influence teachers in responding to job demands and performing their professional duties as educators. This is revealed in the findings of Gan et al (2025) the male teachers excel in task performance, such as instructional design, classroom management, and teaching effectiveness, while female teachers excel in contextual performance, such as teamwork, helping colleagues, and interpersonal care. Another finding from Solanki & Mandaviya (2021) is that female teachers tend to respond to job demands by performing various tasks simultaneously, which leads to emotional exhaustion compared to male teachers. These findings indicate that gender differences affect how job demands and emotional conditions are managed, so it is very important to add gender as a mediator variable in this study. This is highly relevant because gender differences will provide a more comprehensive understanding of emotional intelligence in relation to teachers' entrepreneurial behavior. Thus, this study aims to examine the effect of emotional intelligence on entrepreneurial behavior and whether gender can moderate the effect of emotional intelligence on teachers' entrepreneurial behavior.

Research Method

This study used a quantitative approach with a survey method. A sample of 30 respondents was used to test the validity and reliability of the instrument. The population consisted of 139 teachers from SMK Negeri 1 Surakarta and SMK Negeri 6 Surakarta. These schools were selected because they share the same vocational sector, namely business and management, uniform policies, accessibility, and affordability for data collection. The sampling technique used was proportional random sampling as shown in the table below.

Table 1. Sample Size for Each School

No	School Name	Population	Calculation	Sample
1.	SMKN 1 Surakarta	54 Teachers	$\frac{54}{139} \times 102$	40 Teachers
2.	SMKN 6 Surakarta	85 Guru	$\frac{85}{139} \times 102$	62 Teachers
Total		139 Teachers		102 Teachers

Based on the table above, 102 teachers filled out the questionnaire distributed online. The emotional intelligence questionnaire used was adapted from Goleman (2020) with indicators of self-awareness, emotion management, self-motivation, empathy, and social skills, while the questionnaire on teachers' entrepreneurial behavior was adapted from Ho et al. (2021) and Ho & Lu (2024) with indicators of encouraging innovation, risk-taking,



enthusiasm, coordinating efforts, and resource-seeking ability. The items in this research questionnaire use a 4-point Likert scale to avoid middle-of-the-road or uncertain answers that tend to eliminate the desired research answers. The 4-point Likert scale consists of the responses "Strongly Agree, Agree, Disagree, and Strongly Disagree." This study also uses a dummy scale to assess gender differences, (1) for male teachers and (0) for female teachers. The questionnaires were collected and analyzed using SPSS software version 27.

This study calculated descriptive statistics and performed moderation regression analysis to test the research hypothesis. Pearson's product-moment test was performed to examine construct validity. The Pearson correlation obtained was more than 0.2960 and the significance value was less than 0.05, so it can be concluded that for the variables of teacher entrepreneurial behavior and teacher emotional intelligence, there was one item that was invalid, so the invalid item was removed from the research instrument to maintain the accuracy and quality of the data analyzed. Reliability was measured using Cronbach's Alpha, with the results showing that teacher entrepreneurial behavior obtained a Cronbach's Alpha value of 0.858, which is categorized as very high reliability, while emotional intelligence obtained a Cronbach's Alpha value of 0.778, which is categorized as high reliability.

Results and Discussion

The result of the gender research using a dummy scale found that there were 64 female teachers and 38 male teachers. The results of the research on teacher's entrepreneurial behavior were in the good category with a percentage of 57,8%. These results had the lowest average score 2,89 on the item stating that teachers only knew the sources of funding that supported the implementation of innovation but had difficulty obtaining, funding, such as difficulties in managing the process (administration), while the highest average score was 3.58 for the statement that teachers have a sense of responsibility that encourages them to be proactive and take the initiative in seeking and designing more effective learning strategies and conducting continuous evaluations. The results of the study on teachers' emotional intelligence were in the good category with a percentage of 55.9%. The results had the lowest average score of 2.89 on the statement that teachers still find it difficult to manage their emotions when faced with demanding work, which ultimately interferes with the rational decision-making process, while the highest average score was 3.35 on the statement that teachers are able to recognize and understand their own emotions and their causes.

The analytical tool used to test the hypothesis in this study was the Regression Model Test, which had previously undergone classical assumption testing. The results of the classical assumption testing in the form of data normality testing using the *Kolmogorov-Smirnov* test yielded a result of $0.200 > 0.005$, indicating that the data was normally distributed. Another assumption test was the multicollinearity test for the emotional intelligence variable, which produced a *tolerance* value of $0.410 > 0.10$ and a *variance inflation factor* (VIF) of $2.436 < 10$, which can be concluded that the data used in the analysis of this study did not experience multicollinearity. Finally, the heteroscedasticity test shows that the significance values of the creative thinking ability and emotional intelligence variables are 0.832 and 0.112, respectively, which means >0.05 , concluding that there is no heteroscedasticity in this research data. The second stage is to test the regression model using 4 models, which can be seen in the table below.

Table 2. Results of the Hierarchical Regression Model

Variable	Model 1	Model 2	Model 3	Model 4	Description
Constant	36.954	36.998	37.196	37.178	



	(6.269)	(9.559)	(9.580)	(9.540)
Control Variable				
School of Origin	2.105 (1.158)	1.813 (1.518)	1.757 (1.467)	1.750 (1.456)
Subject teacher	-1.435 (-0.484)	-2.024 (-1.040)	-2.023 (-1.039)	-1.996 (-1.020)
Teaching experience	-0.174 (-0.191)	-0,096 (-0.161)	-0,089 (-0,149)	-0,133 (-0.220)
Teacher employment status	1.099 (0.394)	1.492 (0.814)	1.452 (0,791)	1.534 (0.829)
Teacher professional status	-0.054 (-0.017)	0,377 (0.182)	0,186 (0,089)	0,247 (0,118)
Educational background	-0.030 (-0.043)	-0,437 (-0.947)	-0,475 (-1.023)	-0,523 (-1.100)
Primary effects				
Emotional intelligence		0,716 (11.240)***	0,720 (11.258)***	0,744 (9.430)***
Moderation				
Gender			0,458 (0.864)	0,449 (0.843)
Interaction				
KE * JK				-0.075 (-0.523)
Model fit statistic				
F	0.869	19.776	17.351	15.333
R ²	0.052	0.596	0.599	0.600
ΔR	0.052	0.544	0.003	0.001
VIF		1.011	1.060	1.591

Note:

***: When significance <0.001

Based on the results of the hierarchical regression model, it can be explained that model 1 includes six control variables in the form of subject teachers (non-productive and productive subjects), length of teaching (teachers teaching less than 5 years, 5-10 years, 11-15 years and more than 15 years), teacher employment status (civil servants, PPPK and honorary teachers), teacher professional status (certified teachers and uncertified teachers), educational background (bachelor's degree in education, bachelor's degree in non-education, and master's degree in non-education), and school origin (SMK Negeri 1 Surakarta and SMK Negeri 6 Surakarta). It was found that all control variables showed a control variable effect on teacher entrepreneurial behavior of 5,2%, with the remainder being influenced by other variables.

The hierarchical regression model results also show that model 2 adds emotional intelligence as the main effect with an obtained coefficient (β) value of 0.716 and a significance level of $0.001 < 0.05$, which means that there is a positive and significant effect



on teachers' entrepreneurial behavior. In addition, model 2 obtained a value of 0.596 for the coefficient of determination (R^2), which means that overall, the model is able to explain 59.6% of teachers' entrepreneurial behavior. The addition of emotional intelligence obtained a value of 0.544 for the coefficient of determination (ΔR) which means that emotional intelligence has an influence of 54,4% on teachers' entrepreneurial behavior when the previous variables have been controlled.

The hierarchical regression model results shown in model three add gender as a moderating variable, which obtained obtained coefficient (β) value of 0,458 and a significance level of $0.390 > 0,05$, meaning that gender does not have a significant effect as a moderating variable on teachers' entrepreneurial behavior. In addition, model 3 obtained an R^2 value of 0.599 which means that overall, the model was able to explain 59.9% of teachers' entrepreneurial behavior, and the addition of gender obtained a coefficient of determination (ΔR) value of 0.003, which means that the additional contribution of the moderating variable of gender was very small and insignificant.

The results of the last regression model added the interaction variable of emotional intelligence and gender (emotional intelligence*gender) obtained a coefficient value (β) of -0.075 and a significance level of $0.523 > 0.05$, which means that emotional intelligence and gender do not have a significant effect on teachers' entrepreneurial behavior, so gender cannot act as a moderating variable in this relationship.

Based on the above explanation, the findings in this study produced several statements supported by relevant research. The results show that emotional intelligence has a positive and significant influence on teachers' entrepreneurial behavior. These results are supported by the findings of Sila (2022) that emotional intelligence is a crucial component required in the application of teachers' entrepreneurial behavior. In addition, teachers who have emotional intelligence are more capable of managing their classrooms, interpersonal relationships, and professional performance quality, thereby supporting entrepreneurial behavior among teachers (Okechukwu et al., 2025) Teachers who have emotional intelligence will develop creative thinking skills that are useful in generating ideas, innovations, and learning solutions as a form of entrepreneurial behavior among teachers (Durnali et al., 2023). Another finding of this study is that gender does not moderate the influence of emotional intelligence on teachers' entrepreneurial behavior. This finding is supported by the results of studies by Amirian et al (2025), Kumari, (2025) dan Nadaf et al (2024) which reveal that male and female teachers have the same level of emotional intelligence. The findings of this study also show that there are no significant gender differences between male and female teachers in applying entrepreneurial behavior. These results contradict the of Neto et al (2017) that female teachers show a higher level of entrepreneurial behavior than male teachers. Therefore gender is not a determining factor in applying teachers entrepreneurial behavior in the context of this study. This is because the teachers who were the sample of this study had a relatively uniform internalization of professional values, namely 95 teachers had teacher certification and only 7 teachers who did not have teacher certification, indicating that teachers had homogeneously formed pedagogical competency standards and professional responsibilities. This is supported by the findings of Simanjuntak et al (2025) that teacher certification can improve pedagogical competence, but gender does not impact a teacher's professional commitment (Guspa & Yusra, 2023). In addition, due to the characteristics of the indicators used in this study, namely encouraging innovation, risk taking, having enthusiasm for tasks, the ability to coordinate and the ability to find and utilize resources, which shows that these indicators better reflect the demands of the role of teachers and



culture in schools so that female teachers and male teachers have equal opportunities in implementing teacher entrepreneurial behavior. This supports the findings of Kurniawan et al (2017) that school culture in the form of commitment to learning, open-mindedness and internal knowledge sharing can encourage the implementation of teacher entrepreneurial behavior. Finally, the results of this study support the attitudinal theory that rationally the affective component in this case emotional intelligence plays a role in managing emotions, empathy, motivation and social skills in implementing teacher entrepreneurial behavior which if the school environment and culture are relatively uniform and the experience and professional values of teachers are the same will provide equal opportunities between male teachers and female teachers to strengthen emotional intelligence which is useful for improving teacher entrepreneurial behavior so that it can be concluded that gender in this study does not play a role in strengthening or weakening the influence of emotional intelligence on the entrepreneurial behavior of vocational high school teachers in Surakarta.

This study provides implications on how emotional intelligence can support the implementation of entrepreneurial behavior among teachers. The results of this study indicate that teachers must be able to improve their emotional intelligence, especially in terms of managing emotions, particularly when facing various work pressures, administrative demands, and interactions with school members through self-awareness and applying adaptive coping strategies with fellow teachers and school principals.

Conclusion

The results of this study indicate a positive and significant influence of emotional intelligence on teachers' entrepreneurial behavior with significance value or coefficient of determination (R^2) of 0.596 explaining 59.6% of variance in teacher's entrepreneurial behavior. Furthermore, the results of this study indicate that gender cannot be a moderating variable in emotional intelligence on teachers' entrepreneurial behavior. This study provides a new perspective by providing practical and theoretical insights into the variables used in this study.

Recommendation

This study encourages further research to better explore the impact of emotional intelligence on teachers' entrepreneurial behavior and explore other aspects that can provide a more comprehensive understanding of the factors that influence teachers' entrepreneurial behavior. These findings can be applied by teachers to improve their emotional intelligence, which supports the optimal implementation of entrepreneurial behavior, and by school principals, who can use these findings as a basis for providing various programs that support the improvement of teachers' emotional intelligence, such as training in emotion management, stress management, strengthening open communication, and creating proportionate policies. Thus, through emotional intelligence, it is hoped that the application of entrepreneurial behavior among teachers can be encouraged to be more effective, innovative, and sustainable.

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