

The influence of entrepreneurial leadership, work ethic, organizational climate, and work motivation on vocational high school teachers' performance in Badung regency

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Abstract: This study aims to examine the direct and indirect effects of entrepreneurial leadership, work ethic, organizational climate, and work motivation on teachers' performance in vocational high schools in Badung Regency. A quantitative approach using the PLS-SEM method was applied to test the relationships among variables and provide empirical insights into the factors influencing teacher performance. The sample consisted of 290 vocational high school teachers in Badung Regency. The findings indicate that entrepreneurial leadership, work ethic, organizational climate, and work motivation significantly affect teacher performance. This study contributes by integrating entrepreneurial leadership theory into a teacher performance model within the vocational education context and by offering insights into the indirect effects of these variables on performance. The results enrich the literature on factors influencing educational effectiveness, particularly in vocational schools in Indonesia, and provide implications for developing better educational policies.

Keywords: *Entrepreneurial leadership, Organizational climate, Work ethic, Work motivation.*

1. Introduction

Teachers are professional educators responsible for educating, teaching, guiding, and assessing students across various levels of education, including early childhood, formal, as well as primary and secondary education [1, 2]. At the secondary level, one type of teacher is the vocational high school teacher, who plays a critical role in producing skilled workers ready to enter the business and industrial sectors [1-3].

Vocational high schools offer diverse programs aligned with industry needs, such as technology and engineering, energy and mining, information technology, health, agribusiness, tourism, and creative arts, all designed to produce competent, job-ready human resources [4]. The teaching process in vocational high schools is divided into three groups of subjects: normative, adaptive, and productive [5, 6]. Each group requires teachers who not only master academic content but also possess practical skills relevant to their vocational fields [7].

In vocational education, teachers are expected to demonstrate pedagogical, professional, social, and personal competencies, proven through teaching certification and specialized competency certificates [8-10]. They are also expected to provide students with real work experiences and prepare them to meet the demands of business and industry [11-13]. However, although the challenges faced by vocational high school teachers in Indonesia are highly complex, studies on factors influencing their performance, such as leadership, organizational climate, and work motivation, remain relatively limited in the international literature, particularly within the context of vocational schools in developing countries.

Interviews with vocational high school teachers in Badung Regency revealed that the main challenges affecting their performance include unsupportive school policies, limited resources, and dual roles as educators and administrative staff. In addition, a lack of managerial support and inadequate incentives further reduce teachers' work motivation, ultimately impacting the quality of teaching and their overall performance [14, 15]. This issue deserves serious attention, especially since similar challenges are also widely observed in education systems globally, in both developed and developing countries [16].

Based on this background, this study aims to analyze the influence of factors such as entrepreneurial leadership, work ethic, organizational climate, and work motivation on teacher performance, focusing on the context of vocational high schools in Indonesia. The study contributes by identifying how entrepreneurial leadership and other psychosocial factors affect teacher performance in vocational education, while also offering new insights that may be applied globally to improve the quality of vocational education, Akkaya and Çetin [17]. Akkaya and Çetin [17], through this approach, expect the study to provide relevant theoretical contributions for both education policy in Indonesia and the development of international literature on educational management and leadership in vocational education [18].

The study, titled "The Influence of Entrepreneurial Leadership, Work Ethic, Organizational Climate, and Work Motivation on Vocational High School Teachers' Performance," seeks to fill a significant gap in the international literature regarding the factors that influence teacher performance, particularly in the context of vocational education. While a number of studies have examined the effects of leadership, motivation, and organizational climate on teacher performance, most remain focused on primary and secondary education in developed countries [16, 19, 20]. This study is important because it broadens the understanding of how these factors interact in the context of vocational education in developing countries such as Indonesia.

Previous studies, such as Kartini et al. [21], Bastari et al. [22], Winarti et al. [23], and Nursifah and Muryani [24] have shown that organizational climate, transformational leadership, and work motivation have a positive impact on teacher performance. However, these studies have largely focused on primary and secondary education and have not integrated the simultaneous roles of entrepreneurial leadership and work ethic. Furthermore, most were conducted in countries with different education systems, making the findings less generalizable to the Indonesian educational context.

This study also seeks to address the gap in the international literature on the interaction between entrepreneurial leadership, work ethic, organizational climate, and work motivation in vocational education. Entrepreneurial leadership, which emphasizes innovation, proactivity, and value creation, is expected to influence teacher performance differently from transformational leadership or other leadership styles [25]. Similarly, a strong work ethic is believed to play an important role in shaping teachers' responses to the challenges and opportunities that arise in their work environment [26].

Therefore, this study is not only relevant in the local context of Badung, Bali, but also makes an important contribution to the global understanding of factors influencing teacher performance, particularly in vocational education within developing countries. The results of this study are expected to provide new insights for the development of educational policies and leadership practices at the international level.

2. Literature Review

2.1. Entrepreneurial Leadership

Entrepreneurial leadership is the ability to influence others to achieve progressive organizational goals by seizing opportunities so that the organization can grow and remain competitive. Indicators of entrepreneurial leadership are measured through: (1) problem-solving and decision-making; (2) proactiveness; (3) innovativeness; (4) support for entrepreneurial skills; (5) interpreting opportunities with strategic management; and (6) questioning current business logic [27-31].

2.2. *Work Ethic*

Work ethic refers to individual characteristics in the form of beliefs, values, attitudes, and behaviors toward work that remain stable over time. Indicators of work ethic are measured through: (1) work ability; (2) morality or ethics; (3) hard work; (4) work focus; (5) productive use of time; and (6) interpersonal skills [32-36].

2.3. *Organizational Climate*

Organizational climate is a fundamental construct of the organizational environment that influences work, commitment, and collective efforts to achieve organizational goals. Organizational climate is measured through the following indicators: (1) management style; (2) flexibility; (3) employee relations; (4) autonomy; (5) work organization; and (6) employee motivation [37-41].

2.4. *Work Motivation*

Work motivation is an individual's drive to perform a job, arising either internally or from external conditions, to achieve predetermined goals. Work motivation is measured through the following indicators: (1) goals; (2) reinforcement; (3) intrinsic motivation; (4) external regulation; (5) introjected regulation; and (6) identified regulation [42-46].

2.5. *Teacher Performance*

Teacher performance refers to behaviors consistently carried out by teachers in accordance with their authority and responsibilities to support the achievement of the school's vision and mission. Indicators of teacher performance are measured through: (1) student behavior management; (2) lesson planning; (3) lesson delivery; (4) assessment of learning; (5) individual performance, which includes task, contextual, and adaptive performance; and (6) counterproductive performance [47-51].

3. **Method**

This study employed a quantitative approach using a survey method to examine relationships among variables, test theories, and generalize findings. The approach applied was Structural Equation Modeling with Partial Least Squares (PLS-SEM), selected for its ability to analyze complex relationships among latent variables and handle non-normal data. PLS-SEM was chosen because of its flexibility in dealing with relatively small sample sizes and models that include both reflective and formative variables, as well as its capacity to produce more stable results when data do not meet strict normality assumptions, unlike covariance-based SEM methods such as AMOS or LISREL [52].

The study aimed to investigate: (i) the direct effects of Entrepreneurial Leadership (X_1), Work Ethic (X_2), and Organizational Climate (X_3) on Work Motivation (Y_1) and Teacher Performance (Y_2); (ii) the indirect effect of Entrepreneurial Leadership (X_1) on Teacher Performance (Y_2) through Work Motivation (Y_1); (iii) the indirect effect of Work Ethic (X_2) on Teacher Performance (Y_2) through Work Motivation (Y_1); and (iv) the indirect effect of Organizational Climate (X_3) on Teacher Performance (Y_2) through Work Motivation (Y_1) as a mediating variable.

The study population consisted of all vocational high school teachers in Badung Regency, totaling 698 teachers. The sample included 290 teachers, calculated using proportional stratified random sampling to ensure representation across different vocational programs. Data were collected through questionnaires distributed to respondents, containing statements on the study variables measured using a five-point Likert scale.

To test the validity and reliability of the instruments, the study conducted a convergent validity test using Average Variance Extracted (AVE), a component reliability test using Composite Reliability (CR) and Cronbach's Alpha, and a discriminant validity test using the Heterotrait-Monotrait Ratio (HTMT) [53]. All instruments were tested to ensure that they met the validity and reliability standards required for PLS-SEM analysis [54].

Data analysis was conducted using descriptive techniques to illustrate the characteristics of the sample and research variables, as well as PLS-SEM to test the proposed hypotheses [52]. The measurement and structural models were analyzed with SmartPLS software, and the results were reported in the form of R^2 , Q^2 , and f^2 values to assess the strength of relationships among variables [55].

4. Results

4.1. Descriptive Analysis

This study measured five variables influencing the performance of vocational high school teachers in Badung Regency, namely: (i) Entrepreneurial Leadership, (ii) Work Ethic, (iii) Organizational Climate, (iv) Work Motivation, and (v) Teacher Performance.

Table 1.
Research Data Description.

Statistic						
		Entrepreneurial Leadership	Work Ethic	Organizational Climate	Work Motivation	Teacher Performance
		(X1)	(X2)	(X3)	(Y1)	(Y2)
N	Valid	290	290	290	290	290
	Missing	0	0	0	0	0
Mean		129.97	126.99	129.52	128.78	131.78
Median		130.00	126.00	129.00	127.00	131.50
Mode		119	114	143	120	141
Std. Deviation		10.720	9.822	10.369	9.705	8.914
Range		49	44	43	50	43
Minimum		101	106	107	100	107
Maximum		150	150	150	150	150
Sum		37,691	36,828	37,561	37,347	38,216

Based on the descriptive analysis, the results show a good distribution of data across the five variables. The mean scores for Entrepreneurial Leadership (129.97), Work Ethic (126.99), Organizational Climate (129.52), Work Motivation (128.78), and Teacher Performance (131.78) indicate that most respondents provided positive evaluations of these variables. The variation within each variable was within a reasonable range, suggesting that respondents had relatively consistent perceptions of the measured constructs.

Teacher performance recorded the highest mean score (131.78), indicating that vocational high school teachers in Badung Regency were generally perceived to perform very well. However, work ethic had the lowest mean score (126.99), though still in the high category. This finding suggests that while teachers demonstrated strong motivation and performance, there remain challenges related to work ethic that require further attention from education management.

4.2. PLS-SEM Model

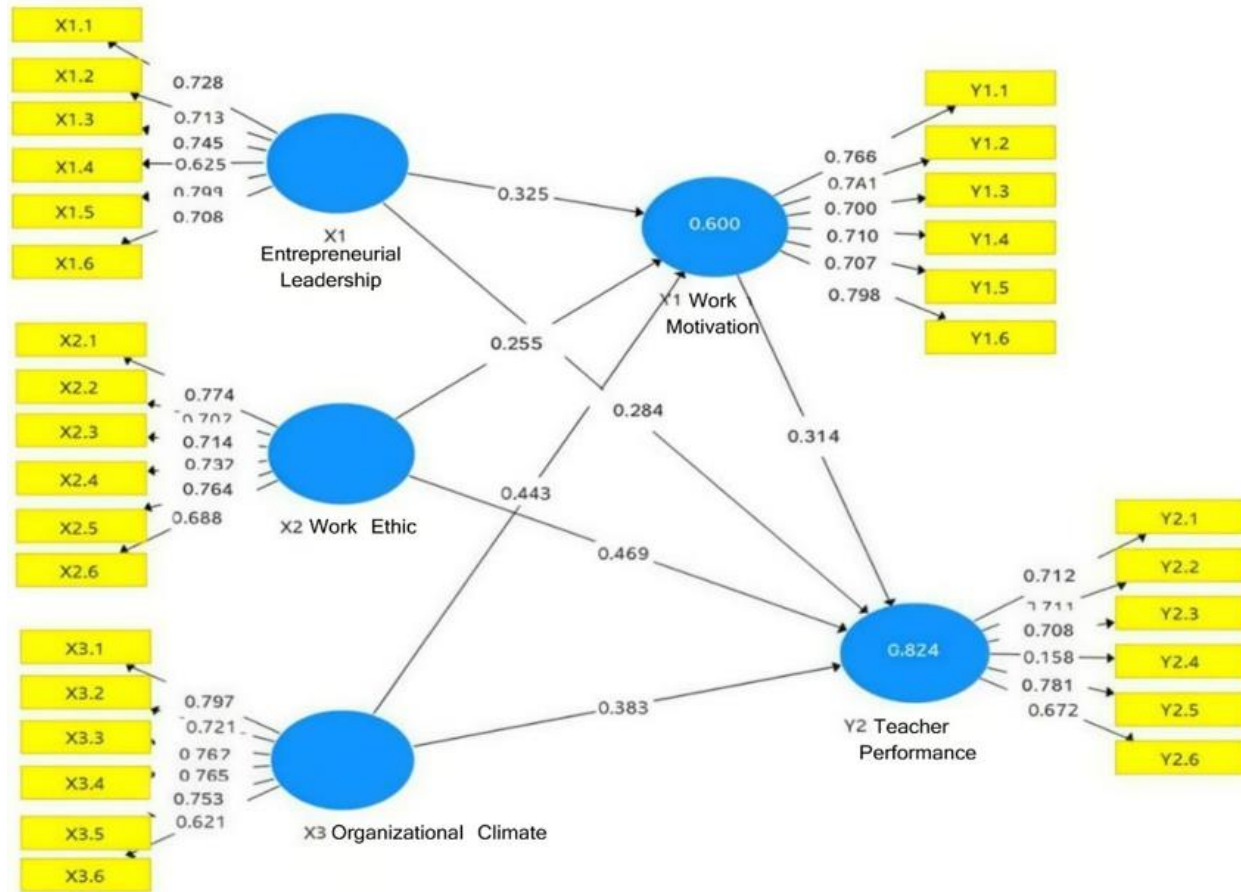


Figure 1.
Outer and Inner PLS-SEM Model.

The PLS-SEM model used in this study shows that Teacher Performance (Y₂) has a strong relationship with independent variables such as Entrepreneurial Leadership (X₁), Work Ethic (X₂), and Organizational Climate (X₃). The R² analysis indicates that 82.1% of the variability in Teacher Performance can be explained by these variables, demonstrating that the model has excellent predictive ability.

4.3. R², Q², and f² Analysis

Table 2.
Goodness of Fit Evaluation Results (R²).

Dependent Variable	R Square	Adjusted R Square	Category
Y1 Work Motivation	0.600	0.596	Moderate
Y2 Teacher Performance	0.824	0.821	Strong

Table 3.

Total Construct Cross-validated Redundancy.

Variable	SSO	SSE	$Q^2 (=1-SSE/SSO)$
X ₁ Entrepreneurial Leadership	1740.000	1740.000	
X ₂ Work Ethic	1740.000	1740.000	
X ₃ Organizational Climate	1740.000	1740.000	
Y ₁ Work Motivation	1740.000	1520.136	0.126
Y ₂ Teacher Performance	1740.000	1452.606	0.165

Table 4.

Total Construct Cross-validated Communality.

Variable	SSO	SSE	$Q^2 (=1-SSE/SSO)$
X ₁ Entrepreneurial Leadership	1740.000	1677.216	0.136
X ₂ Work Ethic	1740.000	1770.836	0.118
X ₃ Organizational Climate	1740.000	1753.043	0.107
Y ₁ Work Motivation	1740.000	1793.163	0.131
Y ₂ Teacher Performance	1740.000	1811.531	0.141

Table 5.Effect Size (f^2) Analysis Results.

Variable	X ₁ Entrepreneurial Leadership	X ₂ Work Ethic	X ₃ Organizational Climate	Y ₁ Work Motivation	Y ₂ Teacher Performance
1. Entrepreneurial Leadership (X ₁)				0.091	0.113
2. Work Ethic (X ₂)				0.101	0.241
3. Organizational Climate (X ₃)				0.101	0.155
4. Work Motivation (Y ₁)					0.100
5. Teacher Performance (Y ₂)					

Based on the above tables, all Q^2 values are greater than zero, indicating that the model has predictive relevance. The Q^2 test was conducted using the Stone-Geisser Test (Q^2) with the following calculation:

$$Q^2 = 1 - (1 - 0.600)(1 - 0.824)$$

$$Q^2 = 1 - (0.400 \times 0.176)$$

$$Q^2 = 1 - 0.0704$$

$$Q^2 = 0.9296$$

A Q^2 value of 0.9296 demonstrates that the model has very high predictive relevance. This indicates that the PLS-SEM model developed in this study is highly capable of predicting the dependent variables. Additionally, the effect size (f^2) analysis revealed that the relationship between Work Ethic and Teacher Performance has a moderate effect ($f^2 = 0.241$), and the relationship between Organizational Climate and Teacher Performance also shows a moderate effect ($f^2 = 0.155$). These results confirm that both factors play a crucial role in influencing the performance of vocational high school teachers.

4.4. Hypothesis Testing

Table 6.
Results of Direct Effect Hypothesis Testing.

Direct Effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
X1 Entrepreneurial Leadership → Y1 Work Motivation	0.325	0.330	0.098	3.321	0.001
X2 Work Ethic → Y1 Work Motivation	0.255	0.268	0.099	2.575	0.023
X3 Organizational Climate → Y1 Work Motivation	0.443	0.433	0.090	4.923	0.000
X1 Entrepreneurial Leadership → Y2 Teacher Performance	0.284	0.289	0.051	5.565	0.000
X2 Work Ethic → Y2 Teacher Performance	0.469	0.458	0.084	5.596	0.000
X3 Organizational Climate → Y2 Teacher Performance	0.383	0.391	0.076	5.071	0.000
Y1 Work Motivation → Y2 Teacher Performance	0.314	0.312	0.082	3.831	0.000

Table 7.
Results of Indirect Effect Hypothesis Testing.

Indirect Effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
X1 Entrepreneurial Leadership → Y1 Work Motivation → Y2 Teacher Performance	0.105	0.104	0.017	6.174	0.000
X2 Work Ethic → Y1 Work Motivation → Y2 Teacher Performance	0.101	0.101	0.025	4.044	0.000
X3 Organizational Climate → Y1 Work Motivation → Y2 Teacher Performance	0.106	0.105	0.020	5.316	0.000

Table 6 presents several direct relationships among the research variables. First, entrepreneurial leadership has a positive and significant effect on the work motivation of vocational high school teachers in Badung Regency, as indicated by a path coefficient of 0.325, a t-statistic of 3.321 > 1.96, and a p-value of 0.001 < 0.05. Second, work ethic has a positive and significant effect on teachers' work motivation, with a path coefficient of 0.255, a t-statistic of 2.575 > 1.96, and a p-value of 0.023 < 0.05. Third, organizational climate has a positive and significant effect on teachers' work motivation, with a path coefficient of 0.443, a t-statistic of 4.923 > 1.96, and a p-value of 0.000 < 0.05. Fourth, entrepreneurial leadership has a positive and significant effect on teacher performance, with a path coefficient of 0.284, a t-statistic of 5.565 > 1.96, and a p-value of 0.000 < 0.05. Fifth, work ethic has a positive and significant effect on teacher performance, with a path coefficient of 0.469, a t-statistic of 5.596 > 1.96, and a p-value of 0.000 < 0.05. Sixth, organizational climate has a positive and significant effect on teacher performance, with a path coefficient of 0.383, a t-statistic of 5.071 > 1.96, and a p-value of 0.000 < 0.05. Seventh, work motivation has a positive and significant effect on teacher performance, with a path coefficient of 0.314, a t-statistic of 3.831 > 1.96, and a p-value of 0.000 < 0.05.

The indirect relationships are presented in Table 7. First, entrepreneurial leadership has a positive and significant indirect effect on teacher performance through work motivation, with a path coefficient of 0.105, a t-statistic of 6.174 > 1.96, and a p-value of 0.000 < 0.05. Second, work ethic has a positive and significant indirect effect on teacher performance through work motivation, with a path coefficient of 0.101, a t-statistic of 4.044 > 1.96, and a p-value of 0.000 < 0.05. Third, organizational climate has a positive and significant indirect effect on teacher performance through work motivation, with a path coefficient of 0.106, a t-statistic of 5.316 > 1.96, and a p-value of 0.000 < 0.05.

5. Discussion

The results of this study indicate both direct relationships among the research variables and indirect effects of Entrepreneurial Leadership (X_1), Work Ethic (X_2), and Organizational Climate (X_3) on Teacher Performance (Y_2) through Work Motivation (Y_1).

Entrepreneurial Leadership (X_1) was found to have a positive and significant effect on Work Motivation (Y_1) and Teacher Performance (Y_2). The findings show that the stronger the leadership characterized by innovation and vision, the higher the teachers' motivation and performance [56]. This supports theories suggesting that leaders who can inspire and strategically guide their teams create a work environment that enhances performance [57, 58]. These findings are consistent with previous studies, confirming that effective leadership has a substantial impact on both motivation and performance [22, 59].

Work ethic (X_2) also demonstrated a positive and significant influence on work motivation (Y_1) and teacher performance (Y_2). The study shows that teachers with a strong work ethic, such as responsibility and professionalism, are more motivated and perform better [60, 61]. This finding aligns with earlier research showing that a strong work ethic plays a critical role in improving teacher performance [62, 63].

Organizational Climate (X_3) was shown to significantly affect Work Motivation (Y_1) and Teacher Performance (Y_2). A supportive climate that encourages collaboration and communication among school members plays a vital role in enhancing teachers' motivation and performance [64, 65]. This study supports previous findings emphasizing that a positive organizational climate drives higher teacher performance [65, 66]. A healthy work environment enables teachers to grow professionally and improve their teaching effectiveness [67-72].

Work motivation (Y_1) was found to have a direct effect on teacher performance (Y_2). This suggests that motivated teachers tend to demonstrate better job performance [73, 74]. The findings are consistent with earlier studies confirming that work motivation has a strong relationship with improved teacher performance [22, 75].

Work motivation serves as a mediator that strengthens the relationship between Entrepreneurial Leadership (X_1), Work Ethic (X_2), and Organizational Climate (X_3) with Teacher Performance (Y_2). This means that improvements in leadership, work ethic, and organizational climate can enhance work motivation, which in turn leads to better teacher performance. These findings support previous studies showing that work motivation mediates the relationship between leadership and performance [59, 63].

The results of this study extend entrepreneurial leadership theory within the context of vocational education. Entrepreneurial leadership, which emphasizes innovation and empowerment, was found to significantly influence teacher performance [76-78]. This aligns with theories suggesting that entrepreneurship-oriented leaders can create a work environment that fosters creativity and initiative, ultimately improving teacher performance [76]. Therefore, this study contributes by highlighting entrepreneurial leadership as a key factor in vocational education [31, 79].

In addition, the findings regarding the effects of work ethic and organizational climate on teacher performance reinforce the theory that psychosocial aspects of the work environment play a critical role in enhancing individual performance [80, 81]. Research shows that a strong work ethic and a supportive organizational climate can improve teacher performance in vocational education [82]. In this context, teachers who demonstrate a high work ethic and operate within a supportive organizational climate are more likely to achieve stronger performance [83]. This study adds to the literature by providing insights into how ethical values and organizational structures influence teaching effectiveness [84].

Based on these findings, the practical implications point to the importance of developing entrepreneurial leadership at the principal level to foster a work culture that supports innovation and performance improvement [25, 77]. Principals need to create environments that allow teachers to grow,

for example, through professional training programs and entrepreneurial skill development aligned with industry needs [85, 86].

Moreover, greater attention should be given to strengthening the work ethic and organizational climate in vocational schools. Schools must ensure that available resources, both in terms of facilities and managerial support, create a work atmosphere that enhances teacher motivation and performance. Programs that encourage collaboration between teachers and principals, as well as provide recognition and incentives for performance achievements, can further boost motivation and work ethic [87].

This study makes a significant theoretical contribution to the fields of vocational education and leadership. By integrating entrepreneurial leadership theory into the vocational education model, the study provides empirical evidence supporting the claim that entrepreneurship-based leadership can enhance teacher motivation and performance, which in turn improves the quality of education at the vocational high school level [88, 89]. In addition, the study enriches the literature on the relationships among organizational climate, work ethic, and teacher performance, which have been more frequently examined in non-educational organizational contexts [90, 91].

6. Conclusion

Overall, this study demonstrates that Entrepreneurial Leadership, Work Ethic, and Organizational Climate play a significant role in improving Work Motivation and Teacher Performance in vocational high schools in Badung Regency. Work Motivation also serves as a mediator that strengthens the relationships among these variables and Teacher Performance. These findings carry important implications for educational policy and school management in creating environments that support teachers' professional development to improve the quality of education in vocational high schools.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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