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Improvement of Teacher Innovation through Strengthening Organizational Climate in Indonesia

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Abstract

This research aims to determine efforts to enhance teacher innovation by examining organizational climate variables' direct influence. The study employed a survey method with a Structural Equation Modeling (SEM) analysis approach. The research sample consisted of 205 teachers selected using proportional random sampling techniques. The researchers employed the data analysis method of action research, utilizing the SEM-PLS tool with WarpPLS software to analyze the data. The research findings concluded that organizational climate has a significant positive direct influence on innovation with a value of $\beta = 0.250$ and a p-value < 0.001. In conclusion, this research indicates that the organizational climate influences teacher innovation.

Keywords: *Teacher innovation; Organizational climate; Quantitative.*

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INTRODUCTION

Human resources now play a more significant role in the success of an organization. Many organizations realize that the human element within an organization can provide a competitive advantage. Human resources are perceived as a vital component of an organization (Chand et al., 2020). In this millennial era, there have been changes in the lifestyle patterns of society, influencing the economic, social, political, and cultural aspects of communities.

These conditions also impact the field of education, as educational institutions are expected to continually prepare themselves to be competent and competitive with other educational institutions in various countries. Competent educational institutions are those that possess quality resources (Rusmawati & B, 2021). As professionals, teachers are expected to interact with their environment, acquire, prepare, develop, deliver, and evaluate their work to provide added value to students, parents, and the community as customers and their educational institutions. Thus, managing human resources and professional practices have undergone significant changes to remain competitive (Etikariena & Kalimashada, 2021; Gilbert et al., 2021; Kwangmuang et al., 2021).

As agents of educational change, teachers have great potential to initiate and implement innovations within the school environment. Innovation involves the process of transforming new ideas into something practically applicable. It encompasses results, processes, and a mindset presenting a percentage of ideas that can be used commercially. Business success is defined as an increase in the performance of new products or a higher success rate for products (Ambarwati et al., 2022; Chand et al., 2020; Rahayu et al., 2018). Moreover,

innovation is perceived as discovery, novelty, and change, consisting of characteristics related to processes and elements involved, such as goals, actors, drivers and resources, inputs, activities and outcomes, value creation, structural and institutional contexts, and other contextual factors (Gilbert et al., 2021; Herlina, 2022).

Innovation introduces new elements into public services through new knowledge, new organizations, and/or new management skills or processes, representing discontinuity with the past (Hastari & Maawiyah, 2022; Yantoro et al., 2021). Innovation can be synthesized as actions taken by organizational members (individuals) that combine all abilities to acquire/adopt novelty and/or something new related to products, processes, and services to enhance efficiency and effectiveness, resulting in a competitive advantage (Etikariena & Kalimashada, 2021). Some dimensions and indicators of innovation include: (a) product innovation with indicators: (1) product development, (2) product creation; (b) process innovation with indicators: (3) work process efficiency, and (4) adaptability to change/innovation; (c) service innovation with indicators: (5) work standards, and (6) work strategies (Ambarwati et al., 2022).

Based on a systematic review of 11 international journals from 2004-2020, the research themes related to educational innovation, especially teacher innovation, were rarely found. Catherine, Wang, and Ahmed (2004) developed and validated a scale for organizational innovation, while Walker, Damanpour, and Devece (2010) focused more on innovation management. Hougan, Soutar, Kennedy, and Sweeney (2011) reconceptualized innovation capabilities in professional services in the legal field. Munksgaard, Evald, and Nielsen (2012) discussed barriers to innovation in the private-public sector. Bülbül (2012) conducted research similar to Catherine, Wang, and Ahmed, developing an assessment tool for innovation management in education. Jean, Sørensen, and Torfing (2013) discussed innovation in the public sector, including market competition and organizations. De Vries, Bekkers, and Tummers (2014, 2016) also emphasized research in the public sector with a literacy perspective.

One variable that influences teacher innovation is organizational climate. Organizational climate is a term created by and defined as a subtle blend of interpretations or perceptions of individuals within the organization regarding their work or role in others and their interpretation of others' roles in the organization. For a considerable time, the organizational climate has been considered as the feeling or impression of the organization (Dwiputri et al., 2022; Susanti & Indrati, 2022). It is also associated with (a) work challenges, motivation, and behavior; (b) job variation: job characteristics and roles in various positions; and (c) job feedback: employee needs. Organizational climate is employees' shared perception of organizational events, practices, and procedures (Anwar et al., 2020; Ependi et al., 2020; Yantu, 2018). Furthermore, organizational climate is seen as a multidimensional construct that encompasses various individual evaluations of the work environment related to (a) adaptability capabilities: making changes; customer focus; organizational learning; knowledge creation; customer perception of service quality; customer service orientation; acceptance of IT and innovation; (b) consistency: core values; consensus; coordination/integration; (c) employee satisfaction: reward systems; open communication/cohesion; job satisfaction; trust

in supervisors; performance orientation; stability; (d) employee engagement: empowerment; team orientation; capacity development; employee participation in decision-making processes; job autonomy; and (e) mission: strategic direction and intent; goals, objectives, and vision (Bustomi et al., 2022; Etikariena & Kalimashada, 2021).

Through this research, valuable insights are expected to be gained regarding the significant role of strengthening organizational climate in enhancing teacher innovation, significantly improving the quality of learning, and achieving a more competitive education system. Based on the above background, this research aims to identify efforts to enhance teacher innovation by examining the direct influence of organizational climate variables.

RESEARCH METHOD

This research uses a quantitative method. The validity and reliability of the research were tested using the Rasch model with Winstep software. The advantage of the Rasch model is its ability to predict missing data based on systematic response patterns. The research hypotheses were analyzed using the Partial Least Square (PLS) method and supported by SmartPLS 3.0 software. The population of this research consists of 390 permanent teachers from 18 private accredited A high schools in Bogor city. The sample size was determined using the proportional random sampling method. For a population size of 390 individuals (with a confidence level of 95%), based on the Krejcie and Morgan table, the minimum sample size required was 146. The research sample consisted of 205 teachers.

Questionnaires were used to measure the variables of innovation and organizational climate, comprising concept instruments that were piloted and final instruments directly used to measure innovation and organizational climate variables. This research's validity and reliability testing used the Rasch Model with Winstep software. The results indicated that some items were not well understood by respondents, as they did not meet the criteria for two of the three Outfit values (0.5<MNSQ<1.5), ZSTD (2.0<ZSTD<+2.0), and PT Measure Correlation (0.4<Pt Measure Cor<0.85). Therefore, those items were removed. The reliability test showed that instrument and person reliabilities fell into the highly diverse category. Cronbach’s alpha value was 0.96 for instrument reliability and 0.95 for person reliability, indicating a highly diverse range of respondents. Additionally, item reliability showed a value of 0.99, also falling into the highly diverse category, indicating a highly diverse range of items in the instrument.

The data analysis technique used in this research is the action research data analysis method, in which the researcher actively facilitates changes. Structural Equation Modeling (SEM) analysis was performed using the WarpPLS approach. The WarpPLS program can identify nonlinear relationships among latent variables and correct the path coefficient values based on these relationships. The SEM analysis using WarpPLS 7.0 involves the following steps: (1) Open/create project file, (2) Read raw data, (3) Pre-process data, (4) Define variables and links in SEM Model, (5) Perform/view SEM analysis/results. In testing using SEM-PLS, the acceptance criteria for hypotheses are as follows:

1) If the P-value < the significance value of 0.05, then this research accepts the hypothesis.
2) If the *P* values > the significance value of 0.05, then this research rejects the hypothesis.

RESEARCH RESULTS AND DISCUSSION

The data presented in this section were obtained from the measurements of Teacher Innovation and Organizational Climate based on respondents' responses to the items in the variable instruments. The data were collected from a sample of 205 teachers from private high schools in Bogor City, West Java, distributed across 18 schools.

Innovation Variable

There were no outlier respondents for the innovation variable, meaning that all respondents could be measured using the instruments created by the researcher, contributing to high-quality data in the research. All 205 teachers provided high-quality data that could be processed using these instruments, and no respondents were excluded from the innovation variable. The results of the Measure Person analysis can be seen in the following table.

Table 1. Measure Person for the Innovation Variable

TABLE 3.1 C:\Users\User\Desktop\Olah Inovasi sec ZOU572WS.TXTn Aug 19 2022 7:58
INPUT: 205 Person 35 Item REPORTED: 205 Person 35 Item 5 CATS WINSTEPS 4.8.0.0

SUMMARY OF 205 MEASURED Person

	TOTAL SCORE	COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	145.4	35.0	3.36	.36	.98	-.68	.92	-.74
SEM	1.0	.0	.12	.00	.06	.21	.06	.20
P.SD	14.7	.1	1.77	.06	.83	3.07	.82	2.92
S.SD	14.8	.1	1.78	.06	.83	3.07	.83	2.93
MAX.	169.0	35.0	6.66	.51	3.74	6.01	3.68	5.78
MIN.	98.0	34.0	-.85	.25	.10	-5.19	.11	-4.98
REAL RMSE	.41 TRUE SD		1.72	SEPARATION	4.18	Person RELIABILITY		.95
MODEL RMSE	.37 TRUE SD		1.73	SEPARATION	4.70	Person RELIABILITY		.96
S.E. OF Person MEAN = .12								

Person RAW SCORE-TO-MEASURE CORRELATION = .99
CRONBACH ALPHA (KR-20) Person RAW SCORE "TEST" RELIABILITY = .96 SEM = 2.96
STANDARDIZED (50 ITEM) RELIABILITY = .97

SUMMARY OF 35 MEASURED Item

	TOTAL SCORE	COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	851.7	204.9	.00	.15	1.07	.28	.92	-.96
SEM	14.0	.1	.28	.00	.07	.60	.07	.56
P.SD	81.6	.5	1.63	.02	.42	3.52	.39	3.28
S.SD	82.8	.5	1.65	.02	.43	3.57	.39	3.33
MAX.	990.0	205.0	3.84	.21	2.01	7.52	1.90	6.86
MIN.	603.0	202.0	-3.46	.11	.38	-6.67	.30	-7.86
REAL RMSE	.17 TRUE SD		1.62	SEPARATION	9.66	Item RELIABILITY		.99
MODEL RMSE	.15 TRUE SD		1.62	SEPARATION	10.74	Item RELIABILITY		.99
S.E. OF Item MEAN = .28								

Item RAW SCORE-TO-MEASURE CORRELATION = -.98
Global statistics: please see Table 44.
UMEAN=.0000 USCALE=1.0000

In the innovation variable, the person data did not experience misfit, but the items experienced misfit. This can be observed from Table 4.2 above, where there are 205 input persons and 205 reported persons, while there are 40 input items and 35 reported items. The values of MNSQ and ZSTD evidence this in Table 2.

Table 2. Data Fit to Innovation Variable Instrument

	Range (0,5 – 1,50) Nilai Ideal MNSQ= 1.0		**Range (-2,0 – 2,0) Nilai ideal ZSTD= 0.0**	
	Infit	**Outfit**	**Infit**	**Outfit**
Person	1,01	0,96	-0,68	-0,74
Item	1,11	0,96	-0,01	0,68

The MNSQ for persons is 1.01 (infit) and 0.96 (outfit). The MNSQ for items is 1.11 (infit) and 0.96 (outfit); ideally, the MNSQ range for persons and items should be between 0.5 and 1.50. In addition to MNSQ, the ZSTD values for persons and items are also considered. Table 2 shows that the ZSTD for persons is -0.68 (infit) and -0.74 (outfit), while the ZSTD for items is -0.01 (infit) and -0.68 (outfit), with an ideal ZSTD range for persons and items being -2.0 to 2. Overall, the data provided and the respondents who provided the data are good (high-quality) and can be processed using the Rasch model.

Rating Scale analysis/diagnostics in this study are conducted to determine whether respondents understand the given rating scale well. The analysis results, and criteria are in the figure and Table 3.

Table 3. Summary of Category Structure Model R for the Innovation Variable.

SUMMARY OF CATEGORY STRUCTURE. Model="R"

CATEGORY LABEL	SCORE	OBSERVED COUNT	%	OBSVD AVRGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	ANDRICH THRESHOLD	CATEGORY MEASURE	
1	1	41	1	-1.08	-2.46	2.29	2.64	NONE	(-4.37)	1
2	2	177	2	.05	-.93	1.99	2.51	-3.13	-2.44	2
3	3	826	12	.56	.83	1.00	.97	-1.64	-.61	3
4	4	3705	52	2.64	2.73	.76	.58	.29	2.40	4
5	5	2423	34	5.74	5.61	.94	.85	4.48	(5.59)	5
MISSING		3	0	1.71						

OBSERVED AVERAGE is mean of measures in category. It is not a parameter estimate.

The criteria are seen in the following table:

Table 4. Rating Scale for the Innovation Variable

Criteria:
Ideal 1.4 – 5.0 logits
Andrich Threshold Index value > 1.4 logits: merge rating scale

Andrich Threshold Index value < 5 logits: separate rating scale
None = 0.0 logits. Distance from score 1 (STS) to score 2 (TS): 0.00 to -3.13 = 3.13 (more than 1.4) Distance from score 2 (TS) to score 3 (N): -3.13 to -1.64 = 1.49 (more than 1.4) Distance from score 3 (N) to score 4 (S): -1.64 to +0.29 = 1.93 (more than 1.4) Distance from score 4 (S) to score 5 (SS): 0.29 to +4.48 = 4.77 (more than 1.4)

The mapping can be seen in the following figure:

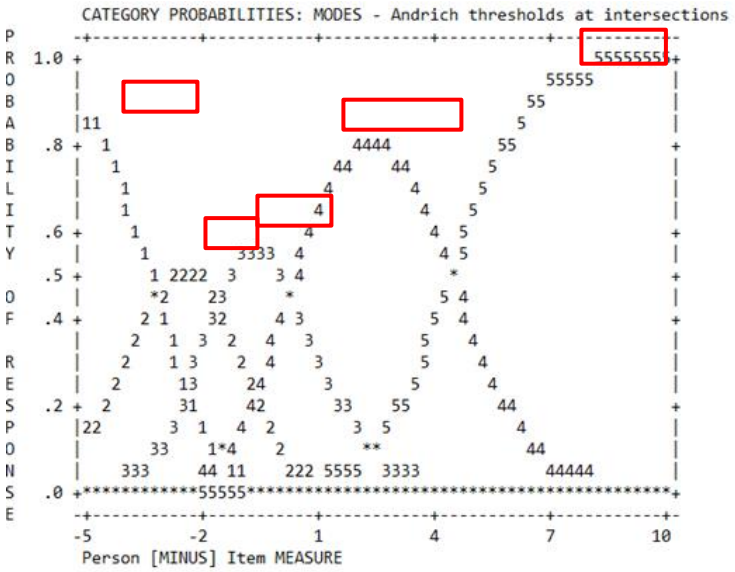


Figure 1. Category Probability Model for the Innovation Variable.

From the tables and figures above, it can be concluded that all category peaks are separated, indicating that the respondents very well understand all rating scales. Furthermore, the item instrument's Fit statistic or validity test uses validity testing based on the Rasch Model. Accepted items are those that meet the criteria of two values out of three: Outfit MNSQ (0.5<MNSQ<1.5), Outfit ZSTD (-2.0<ZSTD<+2.0), and Pt Measure Corr (0.4<Pt Measure Corr<0.85). Rejected items are items with negative Pt Measure Corr values and items that do not meet the criteria of two values out of three: Outfit MNSQ, Outfit ZSTD, and Pt Measure Corr.

The Rasch model can show the ideal item model for each item. Here is an example of item modeling in this research:

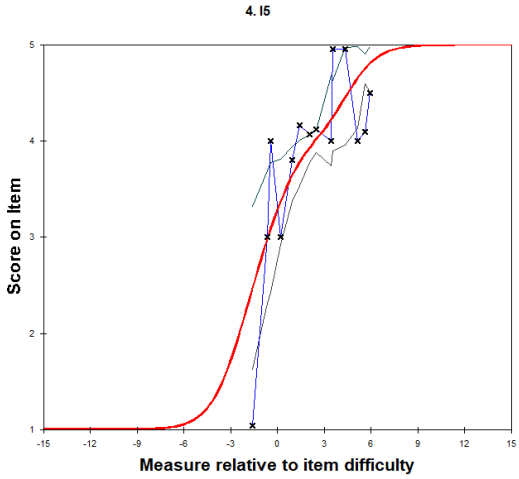


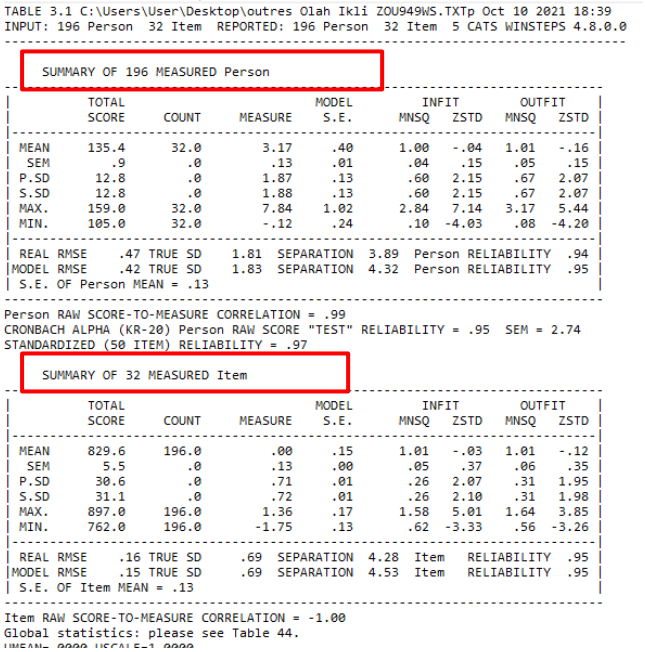
Figure 2. Rasch item modeling for item number 5 of the Innovation Variable.

Based on the Rasch item modeling in the figure above for item number 5, the red line represents the ideal line of item distribution. The blue line indicates the current researcher's data; to obtain ideal data with the Rasch model, the blue line should be aligned with the red line. Meanwhile, the black line represents the tolerance limit of the ideal Rasch model, and it can be observed that there is a black cross outside the tolerance limit of the ideal Rasch model in Figure 4.4, which means that the respondent is a misfit respondent.

Organization Climate Variable

There were two data processing stages in the organization climate variable, and outlier respondents were identified in both stages. There were three outlier respondents in the first data processing stage; in the second data processing stage, there were six outlier respondents. This means that nine individuals could not be measured using the organization climate instrument created due to the low quality of data provided by these respondents. The identified outlier respondents are 6, 20, 28, 40, 77, 137, 151, 159, and 171. After data reduction, high-quality data were obtained, as shown in Table 5.

Table 5. Measure Person for the Organization Climate Variable



```
TABLE 3.1 C:\Users\User\Desktop\outres Olah Ikli ZOU949WS.TXTp Oct 10 2021 18:39
INPUT: 196 Person  32 Item  REPORTED: 196 Person  32 Item  5 CATS WINSTEPS 4.8.0.0
-------------------------------------------------------------------------------

  SUMMARY OF 196 MEASURED Person

-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN     135.4      32.0        3.17     .40      1.00   -.04   1.01   -.16 |
|  SEM       .9        .0         .13     .01       .04    .15    .05    .15 |
| P.SD      12.8        .0        1.87     .13       .60   2.15    .67   2.07 |
| S.SD      12.8        .0        1.88     .13       .60   2.15    .67   2.07 |
| MAX.     159.0      32.0        7.84    1.02      2.84   7.14   3.17   5.44 |
| MIN.     105.0      32.0        -.12     .24       .10  -4.03    .08  -4.20 |
|-----------------------------------------------------------------------------|
| REAL RMSE    .47 TRUE SD    1.81  SEPARATION  3.89  Person RELIABILITY  .94 |
|MODEL RMSE    .42 TRUE SD    1.83  SEPARATION  4.32  Person RELIABILITY  .95 |
| S.E. OF Person MEAN = .13                                                   |
-------------------------------------------------------------------------------
Person RAW SCORE-TO-MEASURE CORRELATION = .99
CRONBACH ALPHA (KR-20) Person RAW SCORE "TEST" RELIABILITY = .95  SEM = 2.74
STANDARDIZED (50 ITEM) RELIABILITY = .97

  SUMMARY OF 32 MEASURED Item

-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE    S.E.      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN     829.6     196.0         .00     .15      1.01   -.03   1.01   -.12 |
|  SEM       5.5        .0         .13     .00       .05    .37    .06    .35 |
| P.SD      30.6        .0         .71     .01       .26   2.07    .31   1.95 |
| S.SD      31.1        .0         .72     .01       .26   2.10    .31   1.98 |
| MAX.     897.0     196.0        1.36     .17      1.58   5.01   1.64   3.85 |
| MIN.     762.0     196.0       -1.75     .13       .62  -3.33    .56  -3.26 |
|-----------------------------------------------------------------------------|
| REAL RMSE    .16 TRUE SD     .69  SEPARATION  4.28  Item   RELIABILITY  .95 |
|MODEL RMSE    .15 TRUE SD     .69  SEPARATION  4.53  Item   RELIABILITY  .95 |
| S.E. OF Item MEAN = .13                                                     |
-------------------------------------------------------------------------------
Item RAW SCORE-TO-MEASURE CORRELATION = -1.00
Global statistics: please see Table 44.
```

Table 5 shows that there were 196 input persons out of 205 respondents who provided data of good quality and could be processed using this instrument, as well as 32 items out of 40 statements that could be used in this research. The organization climate variable did not experience data misfits from the respondents and the items. This is evident from the MNSQ and ZSTD values in Table 6.

Table 6. Data Fit the Organization Climate Variable Instrument

	Range (0.5 – 1.50) Ideal Value for MNSQ = 1.0		**Range (-2.0 – 2.0) Ideal Value for ZSTD = 0.0**	
	Infit	**Outfit**	**Infit**	**Outfit**
Person	1,00	1,01	-0,04	-0,16
Item	1,01	1,01	-0,03	-0,12

MNSQ person is at infit 1.00 and outfit 1.01. MNSQ item is at infit 1.01 and outfit 1.01, where the ideal range for MNSQ person and item is between 0.5 – 1.50. Additionally, in Table 6, the ZSTD person is at infit -0.04 and outfit -0.16, while the ZSTD item is at infit -0.03 and outfit -0.12, with the ideal range for ZSTD person and item being -2.0 – 2.00. Overall, the obtained data and the respondents providing the data are good (of high quality) and can be processed using the Rasch model.

Rating Scale analysis/diagnostic in the research aims to determine whether the respondents understand the given rating scales well. The results of the analysis and the criteria can be seen in Figure and Table 7.

Table 7. Summary of Category Structure Model R for the Organization Climate Variable

SUMMARY OF CATEGORY STRUCTURE. Model="R"

CATEGORY LABEL	OBSERVED SCORE	COUNT	%	OBSVD AVRGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	ANDRICH THRESHOLD	CATEGORY MEASURE	
1	1	7	0	.88	-.46	1.60	2.57	NONE	(-3.89)	1
2	2	82	1	.91	.12	1.40	1.79	-2.65	-2.05	2
3	3	441	7	1.15	1.04	1.11	1.10	-1.12	-.66	3
4	4	3656	58	2.38	2.47	.84	.91	-.42	1.93	4
5	5	2086	33	5.09	4.99	.92	.85	4.20	(5.30)	5

OBSERVED AVERAGE is mean of measures in category. It is not a parameter estimate.

Based on the criteria seen in the following table:

Table 8. Rating Scale for the Organization Climate Variable

Criteria: Ideal 1.4 – 5.0 logits Andrich Threshold Index Value > 1.4 logits: merge rating scale Andrich Threshold Index Value < 5 logits: split rating scale
None = 0.0 logits Score 1 (STS) to Score 2 (TS): 0.00 to -2.65 = 2.65 (greater than 1.4) Score 2 (TS) to Score 3 (N): -2.65 to -1.12 = 1.53 (greater than 1.4) Score 3 (N) to Score 4 (S): -1.12 to -0.42 = 0.70 (less than 1.4) Score 4 (S) to Score 5 (SS): -0.42 to +4.20 = 4.62 (greater than 1.4)

The mapping can be seen in the following figure:

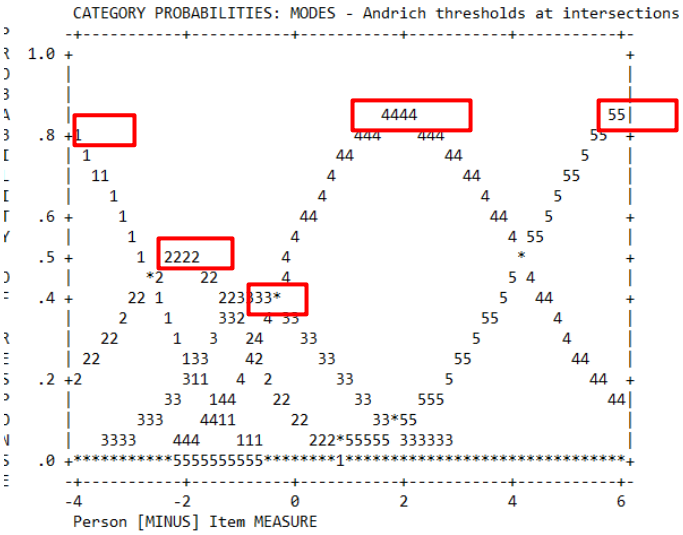


Figure 3. Category Probability Model for the Organization Climate Variable

From the tables and figures above, it can be concluded that all category peaks are separated, indicating that the respondents very well understand all rating scales. Fit statistic or item instrument validity testing is based on the Rasch Model. Accepted items are those that meet the criteria of two values out of three:

Outfit MNSQ (0.5<MNSQ<1.5), Outfit ZSTD (-2.0<ZSTD<+2.0), and Pt Measure Corr (0.4<Pt Measure Corr<0.85). Rejected items are items with negative Pt Measure Corr values and items that do not meet the criteria of two values out of three: Outfit MNSQ, Outfit ZSTD, and Pt Measure Corr. Items that do not fit and must be removed come from the internal system approach dimension, with four items (item numbers 1, 2, 10, and 14), the external approach dimension with two items (item numbers 20 and 23), and the rational purpose approach dimension with two items (item numbers 27 and 40), leaving 32 statement items.

The Rasch model can show the ideal item model for each item. Here is an example of item modeling in this research:

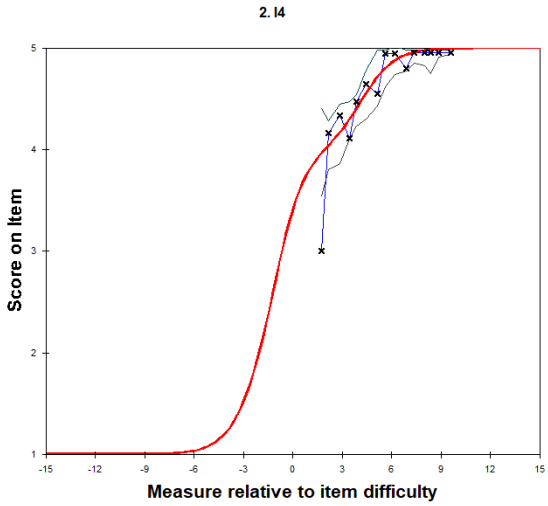


Figure 4. Rasch item modeling for item number 4 of the Organization Climate Variable

Based on the above figure, the red line represents the ideal line of item distribution. The blue line indicates the current researcher's data; to obtain ideal data with the Rasch model, the blue line should align with the red line. Meanwhile, the black line represents the tolerance limit of the ideal Rasch model, and it can be observed that there is a black cross outside the tolerance limit of the ideal Rasch model in Figure 4, indicating that the respondent is a misfit respondent. By observing the Rasch item modeling in Figure 4, it can be stated that item number 4 is close to ideal as there is only one misfit respondent.

Testing Requirements Analysis

The data analysis in this research examines the influence of several independent variables on the dependent and mediating variables. Hypothesis testing is conducted using the Partial Least Square (PLS) method. Partial Least Square is a method used to solve Structural Equation Modeling (SEM). This research uses SEM analysis with the WarpPLS 7.0 application to analyze the data.

The research results are considered diverse (reliable) when the Alpha Cronbach and Composite Reliability values meet the criteria. Alpha Cronbach is used to measure the lower bound value of a construct, while Composite Reliability measures the actual value of construct reliability. The rule of thumb used for

Composite Reliability is that it should be greater than 0.7, and the value of Alpha Cronbach should also be 0.7 (Ghozali, 2006). The reliability in this research has values ≥ 0.7 (expectation ≥ 0.6) for the innovation variable (0.870) and the organizational climate variable (0.504).

Next, the research results are considered valid when the discriminant and convergent validity values meet the criteria. Discriminant validity is conducted to ensure that each concept of each latent model is different from other variables. In this research, discriminant validity is obtained by comparing the correlations between constructs with the square root of Average Variance Extracted (AVE). The AVE values for the innovation variable (0.890) and the organizational climate variable (0.850).

The following criterion is convergent validity, which means that a set of indicators represents and supports a latent variable. Testing convergent validity can be done by looking at the values of outer loadings and the Average Variance Extracted. Good convergent validity is indicated by the higher correlation between indicators that make up a construct. The AVE values show that all four variables have AVE values above the minimum criterion, which is 0.5, and the loading factor values for each variable are above 0.7, as seen in the following table:

Table 9. AVE and Loading Values of Research Variables

No	Variable	Dimension	Loading Value	AVE Value
1	Innovation	Product	0.995	0.796
		Process	0.989	
		Service	0.993	
2	Organizational Climate	Internal System Approach	0.708	0.850
		Rational Purpose Approach	0.705	

Model Analysis

The analysis of the structural model (inner model) consists of testing the model goodness-of-fit and hypothesis testing. Model goodness-of-fit is examined by observing the values of R-square (R^2) and Q-square (Q^2). Partial hypothesis testing is conducted by considering the significance values of the relationships between variables. The R-Square (R^2) value is used to determine the predictive power of the structural model in SEM-PLS analysis. R-Square values approaching 0.67 are considered vital, 0.33 moderate, and 0.19 weak. Based on the test results, the R-Square value of the organizational climate variable towards teacher innovation is 0.07, indicating that organizational climate contributes 7% to teacher innovation.

Hypothesis testing is done by considering the estimate (β) values to examine the relationships between endogenous and exogenous variables and p-values (P) to determine the significance level of these relationships. A hypothesis is considered accepted if the P-value is < 0.05. Based on the analysis results, the estimated (β) value is 0.250, with an S.E. of 0.067 and a p-value < 0.001. The Organizational Climate variable has a direct positive influence on the Innovation variable, significantly indicated by the path coefficient value of $\beta = 0.250$, implying

that the organizational climate provides a 25% chance of positively influencing teacher innovation. The significance value (ρ-value) of Organizational Climate on Innovation is < 0.001 (expected $\rho < 0.05$), rejecting H_0 (accepting H_1), which means that the influence of the organizational climate on innovation is statistically significant and robust.

Discussion

The research results show that Organizational Climate has a direct positive influence on the Innovation variable, meaning that improving the organizational climate in schools will enhance teacher innovation. This finding aligns with a study conducted by Pradana and Izzati (2019), which stated that a positive relationship exists between organizational climate and innovation in teachers at Private Vocational High School X in Surabaya. Their research revealed that a quality organization provides a positive work climate for its members, including schools as educational organizations. A positive work climate will generate enthusiasm and creative ideas from teachers. This is consistent with the research conducted by Chairunnas, Hardhienata, and Rubini (2019), which stated that there is a 15.57% contribution of organizational climate to innovation. A conducive organizational climate can make the organization more vital, more resilient, and better able to accommodate its goals.

A school organization can be defined as all non-physical situations arising from the relationships between school management and teachers, teachers, and students, or managing relationships with other school staff in the teaching-learning process (Don et al., 2021; Widyaningsih et al., 2021). These non-physical situations can be understood as dimensions various experts use with terms such as cooperation, satisfaction, speed, formality, difficulty, and democracy in schools. This means that the better the cooperation, satisfaction, speed, formality, and democracy, the better the relationship between school management and teachers in the school's organizational climate, which can stimulate teachers to produce creative ideas and innovations in the learning situation (Dwiputri et al., 2022; Hussainy, 2022).

Furthermore, the research conducted by Manurwan and Sawitri (2017) showed a positive and significant relationship between organizational climate and innovative behavior (r_{xy}= .58; $p < .001$), indicating that the more positive the organizational climate in a company, the higher the innovative behavior displayed by employees. The organizational climate contributes 33.6% effectively to innovative behavior. The research revealed that a positive organizational climate tends to increase the desire of employees to behave innovatively. The organizational climate prepares worker innovations by providing encouragement and flexible situational changes, allowing employees to solve problems from different perspectives. This also applies to teachers as employees in schools (Anwar et al., 2020; Susanti & Indrati, 2022; Yantoro et al., 2021). Teachers with innovative behavior can create, develop, and implement new ideas, including products, processes, and educational services aimed at improving teacher performance effectiveness as members of the school organization and benefiting the school (Bustomi et al., 2022; Ependi et al., 2020; Etikariena & Kalimashada, 2021;

Surnaya, 2017; Yantu, 2018). Based on the empirical evidence above, the school's organizational climate is vital in enhancing teacher innovation.

CONCLUSION

Based on the research findings and discussions above, it can be concluded that there is a significant direct positive influence of the Organizational Climate variable on Innovation, meaning that a robust Organizational Climate can enhance Innovation. The results of this study can serve as a basis for relevant parties, such as the Ministry of Education or educational institutions, to develop policies that support the strengthening of the organizational climate in schools. Appropriate policies may include training school principals in creating a climate supporting innovation and a collaborative learning approach. The findings of this research can increase awareness of the importance of collaboration between teachers and school management in promoting innovation. A positive and collaborative organizational climate can encourage exchanging ideas and experiences, creating a more conducive environment for innovation.

Recommendations based on the research findings are as follows. First, school principals should create an organizational climate that supports innovation by fostering an open, inclusive, and collaborative environment. Second, teachers should take the initiative to develop innovative ideas for teaching and learning in the classroom. Third, future researchers should conduct further studies to delve into specific aspects not covered in this research.

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