



RECEIVED 13 June 2026
ACCEPTED 6 August 2026
PUBLISHED 31 October 2026

CITATION
Sunarti, Haryoto CY, (2026).
Organisational Learning Culture
and Sustainable Innovation
Performance in Senior High
Schools: the Mediating Roles of
Knowledge Sharing Capability and
Absorptive Capacity. Ijomata
International Journal of
Management. 7 (4), 1449-1459.
doi: 10.61194/ijim.v7i4.2559

TYPE Original Research
PUBLISHED 31 October 2026
DOI 10.61194/ijim.v7i4.2559
VOL 7 Issue 4 October 2026

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Organisational Learning Culture and Sustainable Innovation Performance in Senior High Schools: the Mediating Roles of Knowledge Sharing Capability and Absorptive Capacity

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Abstract

Sustainable innovation performance is increasingly important as educational institutions are expected to promote academic excellence, social responsibility, environmental awareness, and long-term educational value. Drawing on the Knowledge-Based View, this study examines the relationship between organisational learning culture and teacher-perceived school sustainable innovation performance, both directly and indirectly through knowledge sharing capability and absorptive capacity. Data were obtained from 240 valid responses collected through a cross-sectional survey of senior high school teachers in the Jabodetabek region of Indonesia and analysed using partial least squares structural equation modelling with SmartPLS. The results show that organisational learning culture is positively associated with knowledge sharing capability ($\beta = 0.620$, $p < 0.001$), absorptive capacity ($\beta = 0.610$, $p < 0.001$), and sustainable innovation performance ($\beta = 0.265$, $p < 0.001$). Knowledge sharing capability ($\beta = 0.358$, $p < 0.001$) and absorptive capacity ($\beta = 0.334$, $p < 0.001$) are also positively associated with sustainable innovation performance. Significant indirect associations are found through knowledge sharing capability ($\beta = 0.222$, $p < 0.001$) and absorptive capacity ($\beta = 0.204$, $p < 0.001$). The model explains 64.1% of the variance in sustainable innovation performance. These findings indicate that learning-oriented school cultures are associated with stronger sustainable innovation performance through knowledge sharing and absorptive capacity. Given the cross-sectional, self-reported, and purposive sampling design, the findings should not be interpreted as causal or generalisable to all school contexts.

KEYWORDS

organisational learning culture; knowledge sharing capability; absorptive capacity; sustainable innovation performance; knowledge-based view; knowledge management.

Introduction

Senior high schools play an important role in shaping students' academic competence, social awareness, environmental responsibility, and readiness to respond to future challenges (Baker, 2021). Teachers play a key role in generating, sharing, and applying knowledge. Their ability to exchange experience and adopt new insights is essential for sustainability-oriented educational innovation. (Sayehvand et al., 2025).

From the perspective of knowledge management, innovation in schools depends on how effectively teachers and school communities mobilize knowledge (Ibarra-Cisneros et al., 2023). Organisational learning culture supports continuous learning, while knowledge sharing capability and absorptive capacity help teachers exchange internal knowledge and apply external knowledge in practice (Rad et al., 2021). Consistent with the Knowledge-Based View, knowledge is a strategic resource for sustaining organisational performance and innovation. Sustainable innovation is therefore increasingly essential for balancing economic, social, environmental, and operational goals. (Ureta et al., 2025).

The bar for innovative results is raised by this expectation. Making something new is simply one aspect of sustainable innovation performance; another is making sure that novelty is in line with ethical behavior and long-term effects (F. S. Lee et al., 2025). Therefore, organizations need more than just creativity; they also require the organizational ability to learn continually and transform that learning into innovations that can be put into practice (Sumarmi, 2025).

From a knowledge management perspective, sustainable innovation depends on acquiring, integrating, and systematically applying knowledge from multiple sources and experiences (Georgakellos et al., 2024). Sustainability initiatives often fail when knowledge remains fragmented, siloed, or disconnected from implementation, highlighting the importance of mobilising knowledge into lasting innovation outcomes (Alsammak, 2025).

In the educational sector, sustainable innovation has become increasingly relevant because schools are expected not only to deliver academic outcomes but also to cultivate responsible, adaptive, and sustainability-oriented learning environments (Escala et al., 2025). Senior high schools play an important role in shaping students' awareness of sustainability values through curriculum implementation, pedagogical innovation, school programmes, and community-based activities (Padilla et al., 2025). In this context, teachers are central actors because they translate institutional goals into classroom practices, exchange pedagogical knowledge with colleagues, and adapt external educational and sustainability-related insights into practical learning innovations (Khalid Malik et al., 2023). Understanding sustainable innovation in schools requires examining how teachers learn, share, and absorb knowledge. This study focuses on Jabodetabek, a diverse metropolitan educational context shaped by digital transformation and growing sustainability demands.

(Rosliani et al., 2025). Schools in this area operate within a complex environment shaped by urban development, social diversity, technological change, and growing demands for more future-oriented education (Le & Vu, 2025). Jabodetabek provides a relevant context for examining sustainable innovation, while the Knowledge-Based View explains how knowledge integration and application support organisational performance (Danko & Crhová, 2025). From this perspective, sustainable innovation depends on knowledge capabilities that transform organisational learning into consistent and responsible innovation practices (Wongmahesak et al., 2025). An essential place to start in this approach is with the organization's learning culture. Experimentation, introspection, receptivity to new concepts, and ongoing development are all encouraged by a robust learning culture (Cheong et al., 2024). It lessens resistance to change and validates learning as a necessary component of everyday tasks. However, robust, long-lasting innovation performance is not guaranteed by learning culture alone (Kucharska & Bedford, 2020).

Although prior empirical studies have linked organisational learning culture with innovation-related outcomes, the existing literature still leaves several important gaps. Studies such (Cai et al., 2026; Malik et al., 2025; R. A. Wibowo et al., 2026) have generally positioned organisational learning culture as a direct antecedent of innovation performance, but they provide limited explanation of the knowledge-based mechanisms through which a learning-oriented school environment is translated into sustainable innovation performance. Other studies have examined knowledge sharing capability and absorptive capacity in relation to innovation, but these capabilities have often been treated separately rather than being tested together in an integrated mediation model. For example, (Ben Slimane, 2021; Mao et al., 2021; H. Wu et al., 2025) highlight the

relevance of knowledge sharing or absorptive capacity for innovation, yet they do not specifically examine how both capabilities simultaneously mediate the relationship between organisational learning culture and sustainable innovation performance.

This study addresses these gaps by examining knowledge sharing capability and absorptive capacity as parallel mediators between organisational learning culture and sustainable innovation performance. The former reflects internal teacher knowledge exchange, while the latter captures the recognition and application of external educational knowledge. Its novelty lies in integrating both capabilities within one model using teacher perceptions from senior high schools in Jabodetabek. The metropolitan context is relevant because schools vary in institutional capacity and are increasingly exposed to digital learning and sustainability-related educational demands. (Rosliani et al., 2025). Knowledge mobilization is especially important because of these conditions, which force educators to change their pedagogical strategies, adjust to changing educational regulations, and integrate outside knowledge into school-based innovation (Farley-Ripple & MacGregor, 2024). As a result, this study views Jabodetabek as an educational setting where the relationship between learning culture, knowledge-based capabilities, and sustainable innovation performance can be investigated under dynamic urban school conditions rather than just as a new research location.

Organizational learning culture is supposed to serve as an enabling intangible condition that promotes knowledge mobilization and innovation, according to the Knowledge-Based View (Alshammari & Alshammari, 2026). Teachers' ability to share and absorb knowledge may be strengthened by a learning-oriented school culture that promotes introspection, teamwork, openness to new ideas, and continuous improvement (Serpa et al., 2020). By assisting schools in converting internal and external knowledge into teaching strategies, curricula, and institutional procedures that are focused on sustainability, these two competencies may then enhance sustainable innovation performance (Rolls, 2026). Therefore, this study looks at a parallel mediation model that links organizational learning culture to sustainable innovation performance both directly and indirectly through absorptive and knowledge-sharing capacities.

Based on the proposed structural model, this study formulates seven hypotheses.

H1: Organisational learning culture has a positive effect on knowledge sharing capability.

H2: Organisational learning culture has a positive effect on absorptive capacity.

H3: Organisational learning culture has a positive effect on sustainable innovation performance.

H4: Knowledge sharing capability has a positive effect on sustainable innovation performance.

H5: Knowledge sharing capability mediates the relationship between organisational learning culture and sustainable innovation performance.

H6: Absorptive capacity has a positive effect on sustainable innovation performance.

H7: Absorptive capacity mediates the relationship between organisational learning culture and sustainable innovation performance.

This study shows how organisational learning culture is associated with sustainable innovation performance through two parallel knowledge-based mechanisms: internal knowledge sharing and external knowledge absorption.

Methods

Research Type

This study used a quantitative cross-sectional survey to examine relationships among organisational learning culture, knowledge sharing capability, absorptive capacity, and sustainable innovation performance through statistical analysis of latent variables (Bougie & Sekaran, 2020; Creswell & Creswell, 2022). This study used a cross-sectional design with individual teachers as the unit of analysis. All constructs were interpreted as teacher-perceived school conditions rather than aggregated school-level characteristics. Because no multilevel or within-school analysis was conducted, the findings should not be interpreted as school-level effects.

Population and Sample/Informants

The target population comprised active senior high school teachers in Jabodetabek. Purposive sampling required respondents to have at least one year of teaching experience and familiarity with school learning, knowledge sharing, and innovation practices (Memon et al., 2025). Incomplete, ineligible, or unusable responses were excluded. The survey was conducted from February to March 2026, yielding 240 valid responses from 300 submissions. Because purposive sampling was used and school identifiers were not collected, teachers were treated as the unit of analysis and findings as teacher-perceived rather than school-level effects.

An a priori power analysis was conducted using G*Power 3.1 with F tests for linear multiple regression (fixed model, R^2 deviation from zero) and three predictors, reflecting the maximum number of paths directed toward sustainable

Table 1. Item Wording

Construct	Code	Adapted Item Wording
Organisational Learning Culture	OLC1	Teachers in my school actively seek relevant information to improve teaching and school practices.
	OLC2	Teachers in my school interpret new information to support improvement in learning and school programmes.
	OLC3	Teachers in my school are encouraged to discuss problems, ideas, and improvement opportunities.
	OLC4	Communication among teachers and school leaders supports shared learning and improvement.
	OLC5	My school provides formal learning opportunities such as training, workshops, or professional development activities.
	OLC6	Teachers in my school learn informally through daily practice, peer feedback, and reflection.
Knowledge Sharing Capability	KSC1	Teachers in my school use a shared language when discussing teaching practices and school improvement.
	KSC2	Teachers in my school share experiences or stories that help colleagues understand effective practices.
	KSC3	Teachers in my school communicate directly with colleagues to exchange teaching ideas and school-related knowledge.
	KSC4	Teachers in my school use digital tools or online channels to share learning resources and information.
	KSC5	Teachers in my school are willing to contribute knowledge and experience to support their colleagues.
	KSC6	Useful knowledge is transferred across teachers, subject groups, or school teams.
Absorptive Capacity	AC1	Teachers in my school identify external knowledge that is relevant to improving learning and school practices.
	AC2	Teachers in my school obtain new ideas from training, policy updates, professional networks, universities, or community partners.
	AC3	Teachers in my school interpret external educational information according to school needs.
	AC4	Teachers in my school discuss external knowledge internally before applying it in school activities.
	AC5	Teachers in my school apply external knowledge to improve teaching, learning activities, or school programmes.
	AC6	Teachers in my school use external knowledge to develop new learning methods, services, or improvement initiatives.
Sustainable Innovation Performance	SIP1	My school develops learning activities that promote environmental awareness and sustainability values.
	SIP2	My school improves school routines to reduce waste, save resources, or use energy more efficiently.
	SIP3	My school involves teachers and students in sustainability-related initiatives or school improvement activities.
	SIP4	My school supports well-being, safety, inclusiveness, and social responsibility through its innovation activities.
	SIP5	My school develops innovations that improve operational efficiency and the effective use of school resources.
	SIP6	My school develops innovations that create long-term educational value for students, teachers, and the school community.

Source : Data Processed, 2026

innovation performance (Nicholson et al., 2021). With $\alpha = 0.05$, power = 0.80, and $f^2 = 0.05$, G*Power indicated a minimum sample of 222. The final sample of 240 exceeded this requirement and was also adequate for estimating the reflective PLS-SEM model and testing the proposed mediation effects.

Research Location

The study was conducted in Jabodetabek, Indonesia, covering Jakarta, Bogor, Depok, Tangerang, and Bekasi. Its diverse educational context was suitable for examining the study variables, although purposive sampling limits generalisation beyond the region.

Instrumentation or Tools

Data were collected using a 24-item reflective questionnaire, with six indicators per construct measured on a five-point Likert scale. The items were adapted from prior studies and contextualised for the senior high school setting. Organisational Learning Culture was measured using indicators adapted from the dimensions of information acquisition and interpretation, supportive relationships and communication, and formal and informal learning (Laubengaier et al., 2025; Viterouli et al., 2024; Vos et al., 2025). Knowledge Sharing Capability was measured using indicators reflecting cognitive, network ties, and cultural dimensions, including shared language, communication patterns, willingness to share knowledge, and knowledge transfer among teachers (Eletter et al., 2022; Nguyen & DO, 2021; D. Wu et al., 2024). Absorptive Capacity was measured using indicators related to acquisition, assimilation, and exploitation of external educational knowledge (Angulo-Ruiz et al., 2026; Crespi et al., 2022; Lenart-Gansiniec et al., 2022). Sustainable Innovation Performance was measured using school-adapted indicators reflecting environmental, social, and economic sustainability in educational practice (Baba et al., 2024; Da Silva & De AzevedoAlmeida, 2019; Lizana et al., 2021) (Table 1).

Items were adapted to the school context, reviewed by experts and teachers, and refined through translation and back-translation. All constructs were specified as reflective.

Data Collection Procedures

Data were collected through an anonymous cross-sectional online survey of eligible senior high school teachers in Jabodetabek. Participants provided informed consent, and incomplete or ineligible responses were excluded.

Data Analysis

PLS-SEM with SmartPLS was used because the study involved multiple latent constructs, mediation effects, and prediction-oriented analysis. The analysis included descriptive statistics, followed by measurement model and structural model evaluation (Chua, 2023; Hair et al., 2022; Kline, 2023; Radomir et al., 2023). The measurement model was assessed using outer loadings (> 0.70), Cronbach's alpha and composite reliability (> 0.70), and AVE (> 0.50). Discriminant validity was evaluated using HTMT and the Fornell-Larcker criterion. (Chua, 2023; Hair et al., 2022; Kline, 2023; Radomir et al., 2023). The structural model was evaluated using R^2 , f^2 , Q^2 , SRMR, NFI, and bootstrapping to test direct and mediated effects (Chua, 2023; Hair et al., 2022; Kline, 2023; Radomir et al., 2023).

Hypotheses were tested using 5,000 bootstrap subsamples at the 5% level, with significance set at $t > 1.96$ and $p < 0.05$. Direct, indirect, and potential common method effects were assessed (Yao & Xu, 2024). By guaranteeing respondents' anonymity and confidentiality, using precise questionnaire wording, and separating the assessment of predictor and result components, procedural remedies were

implemented (Kaltsonoudi et al., 2022). Variance inflation factor values were used to statistically evaluate common method bias; values below the suggested threshold indicated that multicollinearity and common method bias were not serious issues.

Ethical Approval

The study followed ethical principles for low-risk research. Formal approval was not required because participation was anonymous, voluntary, and involved no sensitive data or experimental procedures. Informed consent was obtained, and all data were securely stored and reported in aggregate.

Result and Discussion

Descriptive Analysis

Table 2 summarises the respondent profile and survey screening. Of 300 responses collected between February and March 2026, 240 were retained, yielding an 80.0% usable response rate. Respondents were predominantly male (58.3%), aged 26–35 years (40.8%), bachelor's degree holders (62.9%), from public schools (55.0%), senior high schools (65.0%), and A-accredited institutions (70.0%). They were distributed across Jakarta (24.2%), Bekasi (23.3%), Tangerang (21.3%), Bogor (17.9%), and Depok (13.3%). Because purposive sampling was used, the sample should not be considered statistically representative of all senior high school teachers in Jabodetabek.

Measurement Analysis

The measurement model was assessed before testing the structural relationships to ensure that each construct was measured accurately and reliably (Chua, 2023). Indicator reliability required outer loadings > 0.70 , while Cronbach's alpha and composite reliability > 0.70 indicated adequate internal consistency. The average variance extracted (AVE) was

Table 2. Demographic of Respondent

Variable	Category	n	%
Survey Screening	Initial responses received	300	100.0
	Excluded after screening	60	20.0
	Valid responses used in analysis	240	80.0
Gender	Male	140	58.3
	Female	100	41.7
Age Group	≤25 years	54	22.5
	26–35 years	98	40.8
	36–45 years	61	25.4
	46 years and above	27	11.3
Education	Diploma	31	12.9
	Bachelor	151	62.9
	Master	45	18.8
	Doctorate	13	5.4
School Ownership	Public school	132	55.0
	Private school	108	45.0
School Type	Senior High School	156	65.0
	Vocational High School	60	25.0
	Islamic Senior High School / equivalent	24	10.0
School Accreditation	A	168	70.0
	B	60	25.0
	C or other	12	5.0
School Location	Jakarta	58	24.2
	Bogor	43	17.9
	Depok	32	13.3
	Tangerang	51	21.3
	Bekasi	56	23.3

Source : Data Processed, 2026

used to evaluate convergent validity; values greater than 0.50 indicated that the concept adequately explained the variation in its indicators (Radomir et al., 2023). In order to characterize the respondents' overall opinions on each construct, the mean values were also presented. The Fornell-Larcker criteria

and the heterotrait-monotrait ratio (HTMT) were used to assess discriminant validity. When each construct's square root of AVE was greater than its correlations with other constructs, the Fornell-Larcker criteria was satisfied, and HTMT values below the suggested threshold showed that the

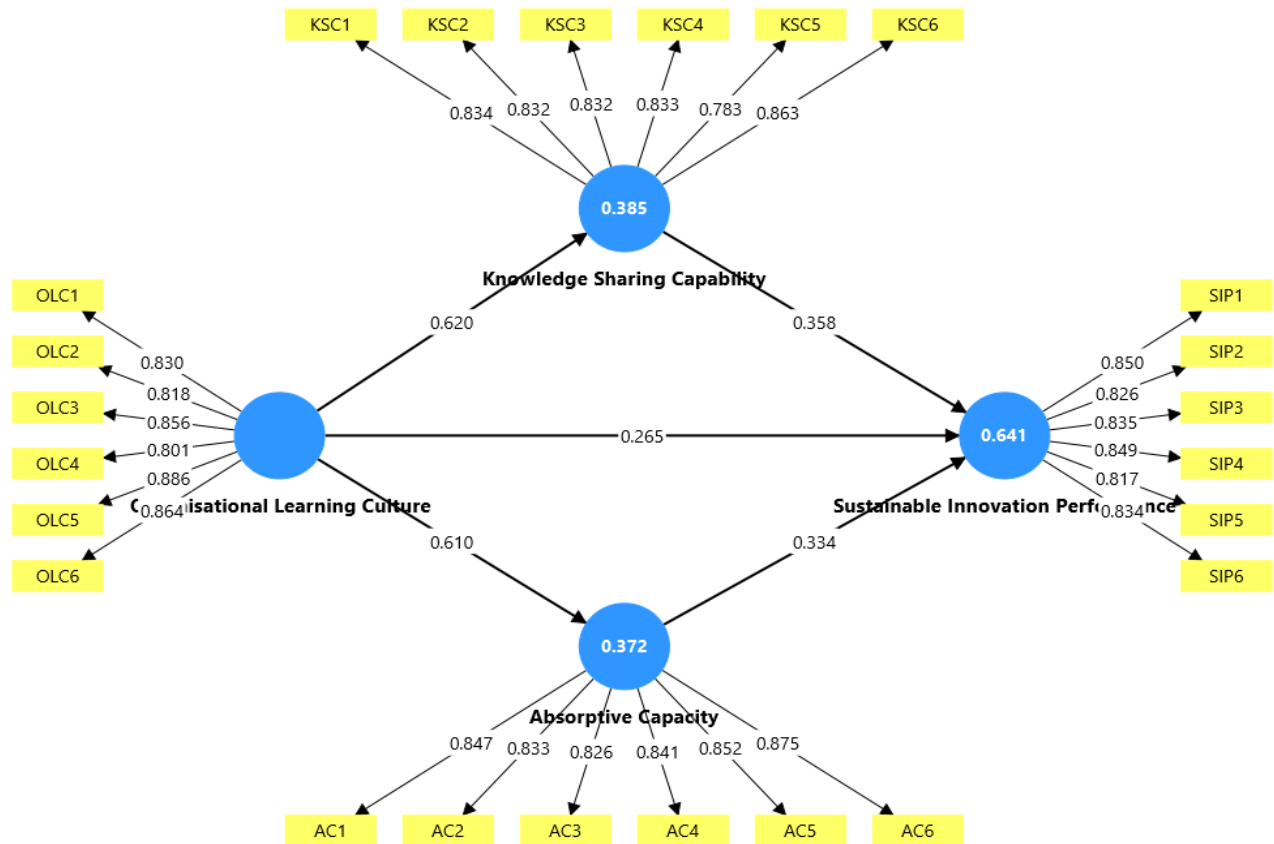


Figure 1. Measurement Model

Source : Data Processed, 2026

Table 3. Measurement Analysis

Construct	Item	Mean	Outer Loading	VIF	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	AVE
Absorptive Capacity	AC1	4.254	0.847	2.525	0.920	0.922	0.938	0.715
	AC2	4.296	0.833	2.482				
	AC3	4.292	0.826	2.445				
	AC4	4.217	0.841	2.524				
	AC5	4.304	0.852	2.629				
	AC6	4.254	0.875	3.005				
Knowledge Sharing Capability	KSC1	4.263	0.834	2.309	0.909	0.913	0.930	0.688
	KSC2	4.246	0.832	2.324				
	KSC3	4.250	0.832	2.375				
	KSC4	4.242	0.833	2.350				
	KSC5	4.279	0.783	1.937				
	KSC6	4.258	0.863	2.578				
Organisational Learning Culture	OLC1	4.263	0.830	2.356	0.919	0.921	0.936	0.711
	OLC2	4.292	0.818	2.190				
	OLC3	4.242	0.856	2.587				
	OLC4	4.233	0.801	2.200				
	OLC5	4.279	0.886	3.196				
	OLC6	4.283	0.864	2.789				
Sustainable Innovation Performance	SIP1	4.254	0.850	2.501	0.913	0.914	0.933	0.698
	SIP2	4.263	0.826	2.291				
	SIP3	4.263	0.835	2.412				
	SIP4	4.213	0.849	2.568				
	SIP5	4.258	0.817	2.217				
	SIP6	4.250	0.834	2.285				

Source : Data Processed, 2026

constructs were empirically different from one another (Hair et al., 2022). In order to identify any collinearity between indicators and constructs, variance inflation factor (VIF) values were also analyzed. Multicollinearity was not a significant worry in the model, according to VIF values below the suggested level (Kline, 2023). The measurement model results are illustrated in Figure 1..

Table 3 shows that the measurement model met the recommended reliability and validity criteria. Mean values ranged from 4.213 to 4.304, while outer loadings ranged from 0.783 to 0.886. Cronbach's alpha (0.909–0.920), rho_a (0.913–0.922), rho_c (0.930–0.938), and AVE (0.688–0.715) confirmed strong reliability and convergent validity. VIF values (1.937–3.196) indicated no serious multicollinearity.

Discriminant validity was confirmed, with HTMT values of 0.473–0.751 below 0.85, square roots of AVE exceeding inter-construct correlations, and all indicators loading highest on their intended constructs (Table 4). Thus, the constructs were empirically distinct and suitable for structural analysis.

Structural Analysis

Table 4. Discriminant Validity

Heterotrait-Monotrait Ratio				
	Absorptive Capacity	Knowledge Sharing Capability	Organisational Learning Culture	Sustainable Innovation Performance
Absorptive Capacity				
Knowledge Sharing Capability	0.473			
Organisational Learning Culture	0.660	0.672		
Sustainable Innovation Performance	0.708	0.731	0.751	
Fornel Larcker Criterion				
	Absorptive Capacity	Knowledge Sharing Capability	Organisational Learning Culture	Sustainable Innovation Performance
Absorptive Capacity	0.846			
Knowledge Sharing Capability	0.436	0.830		
Organisational Learning Culture	0.610	0.620	0.843	
Sustainable Innovation Performance	0.652	0.668	0.691	0.835
Cross Loading				
	Absorptive Capacity	Knowledge Sharing Capability	Organisational Learning Culture	Sustainable Innovation Performance
AC1	0.847	0.423	0.522	0.569
AC2	0.833	0.323	0.484	0.473
AC3	0.826	0.307	0.499	0.543
AC4	0.841	0.345	0.518	0.543
AC5	0.852	0.368	0.503	0.567
AC6	0.875	0.434	0.564	0.602
KSC1	0.359	0.834	0.544	0.551
KSC2	0.362	0.832	0.524	0.531
KSC3	0.321	0.832	0.464	0.523
KSC4	0.361	0.833	0.476	0.563
KSC5	0.359	0.783	0.459	0.532
KSC6	0.402	0.863	0.602	0.618
OLC1	0.479	0.498	0.830	0.594
OLC2	0.565	0.534	0.818	0.607
OLC3	0.501	0.584	0.856	0.632
OLC4	0.435	0.458	0.801	0.494
OLC5	0.538	0.547	0.886	0.582
OLC6	0.555	0.504	0.864	0.574
SIP1	0.607	0.527	0.594	0.850
SIP2	0.518	0.527	0.562	0.826
SIP3	0.549	0.550	0.567	0.835
SIP4	0.527	0.589	0.568	0.849
SIP5	0.494	0.550	0.551	0.817
SIP6	0.568	0.602	0.618	0.834

Source : Data Processed, 2026

After confirming the adequacy of the measurement model, the structural model was evaluated to test the hypotheses and assess explanatory and predictive performance. R^2 was used to measure explained variance in the endogenous constructs, while f^2 assessed the contribution of each predictor (Chua, 2023); (Kline, 2023). Predictive relevance was evaluated using Q^2 , and overall model fit was assessed using relevant PLS-SEM fit diagnostics, including the standardized root mean square residual (SRMR) and normed fit index (NFI) (Radomir et al., 2023). Bootstrapping path coefficients, t-values, and p-values were used to test direct effects, while specific indirect effects assessed mediation through knowledge sharing capability and absorptive capacity (Hair et al., 2022); (Kline, 2023). The structural model with path coefficients and t-values is presented in Figure 2.

Table 5 shows that the model explains 64.1% of sustainable innovation performance, 37.2% of absorptive capacity, and 38.5% of knowledge sharing capability, indicating adequate explanatory power. The adjusted R-square values for absorptive capacity (0.370), knowledge sharing capability (0.382), and sustainable innovation performance (0.636) are

close to their respective R-square values. The model showed stable explanatory power. Organisational learning culture had large effects on knowledge sharing capability ($f^2 = 0.625$) and absorptive capacity ($f^2 = 0.593$), while both had moderate effects on sustainable innovation performance. SRMR (0.046–0.048), NFI (0.913–0.914), and positive Q^2 predict values confirmed acceptable fit and predictive relevance.

Bootstrapping supported all seven hypotheses. Organisational learning culture positively affected knowledge sharing capability ($\beta = 0.620$), absorptive capacity ($\beta = 0.610$), and sustainable innovation performance ($\beta = 0.265$), while knowledge sharing capability ($\beta = 0.358$) and absorptive capacity ($\beta = 0.334$) also positively affected sustainable innovation performance (all $p < 0.001$). Both mediation paths were significant through knowledge sharing capability ($\beta = 0.222$) and absorptive capacity ($\beta = 0.204$) (Table 6).

Knowledge sharing capability ($\beta = 0.222$) and absorptive capacity ($\beta = 0.204$) both showed significant partial mediation. Their VAF values were 32.1% and 29.5%, with a combined 61.7%. The knowledge sharing pathway was slightly stronger, while future studies should consider multilevel analysis.

Because the study used cross-sectional self-reported data, the findings should be interpreted as associations rather than causal effects. H1 and H2 were supported, with organisational learning culture showing strong relationships with knowledge sharing capability ($\beta = 0.620$, $p < 0.001$) and absorptive capacity ($\beta = 0.610$, $p < 0.001$). The slightly stronger association with knowledge sharing capability suggests that learning culture may be reflected more directly in everyday teacher interaction, collaboration, mentoring, and reflective practices (Cristache et al., 2025; Herlina et al., 2024; S. Lee & Han, 2024).

The strong OLC–KSC relationship also supports prior

evidence that teacher collaboration, peer learning, and professional communities strengthen practical knowledge exchange and school improvement (Tran & O'Connor, 2024). When schools provide a learning-oriented environment, such knowledge is more likely to be exchanged and discussed collectively (Zeinabadi, 2022; Zhang, 2022; Zhang et al., 2025). The strong association between organisational learning culture and knowledge sharing capability ($\beta = 0.620$) supports the importance of internal knowledge mobilisation for school innovation, particularly through teacher collaboration. A similarly strong relationship with absorptive capacity ($\beta = 0.610$) indicates that learning-oriented schools are also better positioned to recognise and apply external knowledge (Makhloufi et al., 2021; Vičič Krabonja et al., 2024; Witthöft et al., 2025).

In Jabodetabek schools, external knowledge may come from curriculum reforms, digital platforms, training, partnerships, and policy initiatives. Because such knowledge must be recognised, interpreted, and adapted, this may explain why the OLC–AC coefficient is slightly lower than OLC–KSC.

H3 was also supported, as organisational learning culture was positively associated with sustainable innovation performance ($\beta = 0.265$, $p < 0.001$). Its smaller coefficient suggests that learning culture is more strongly related to knowledge-capability development than directly to innovation performance, consistent with the Knowledge-Based View that knowledge creates value when it is shared, absorbed, and applied (Alqatan et al., 2025; Cristache et al., 2025).

Therefore, the lower direct coefficient does not weaken the role of learning culture; rather, it suggests that learning culture may be more closely associated with sustainable innovation performance when it is translated into operational knowledge practices.

Knowledge sharing capability ($\beta = 0.358$, $p < 0.001$) and

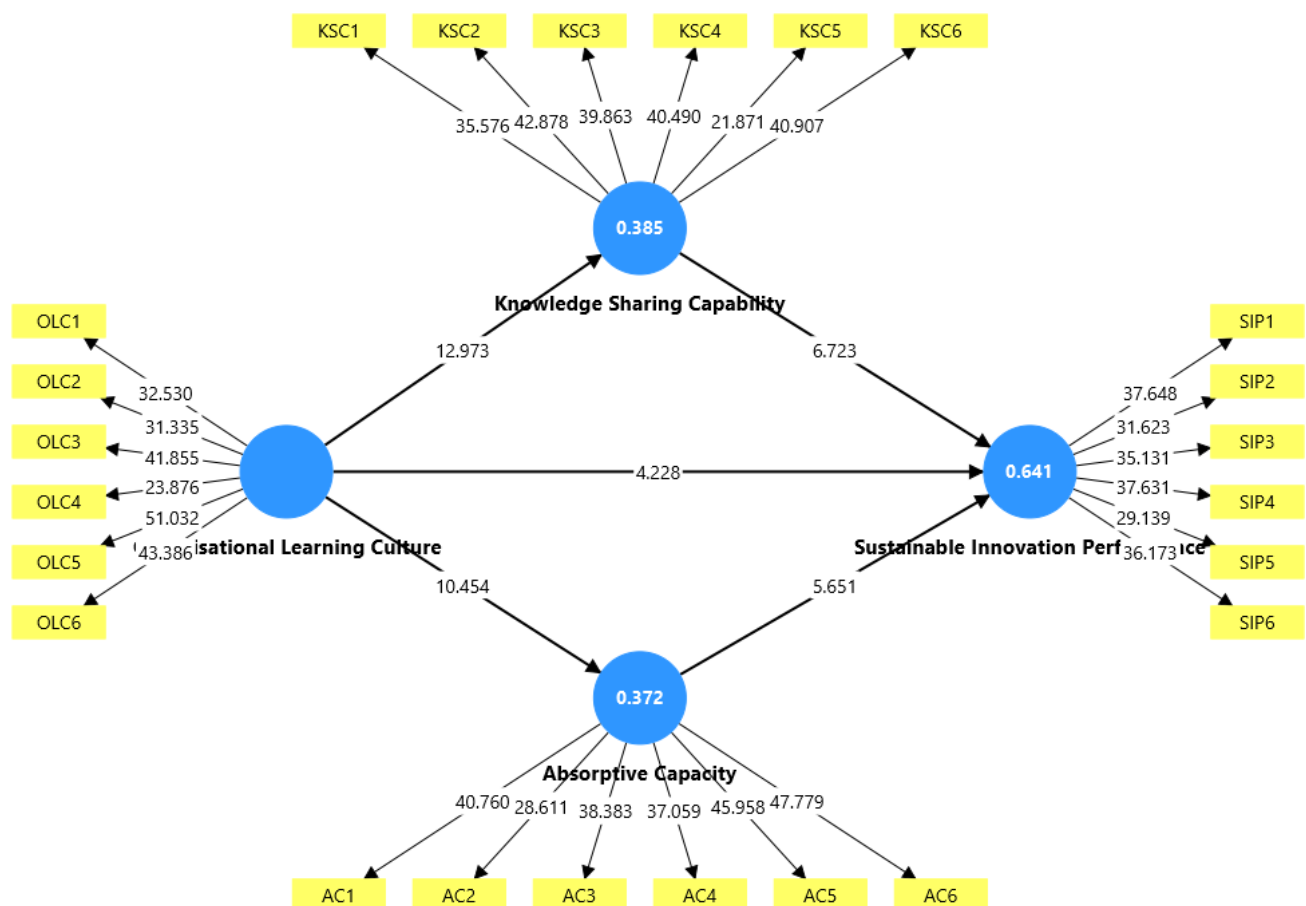


Figure 2. Structural Model

Source : Data Processed, 2026

absorptive capacity ($\beta = 0.334$, $p < 0.001$) were both positively associated with sustainable innovation performance, supporting H4 and H6. The slightly stronger

effect of knowledge sharing capability suggests that internal teacher knowledge exchange may contribute more directly to sustainable innovation, which often depends on collective

Table 5. Structural Analysis

R Square					
			R-square	R-square adjusted	
Absorptive Capacity			0.372	0.370	
Knowledge Sharing Capability			0.385	0.382	
Sustainable Innovation Performance			0.641	0.636	
F Square					
	Absorptive Capacity	Knowledge Sharing Capability	Organisational Learning Culture	Sustainable Innovation Performance	
Absorptive Capacity				0.193	
Knowledge Sharing Capability				0.218	
Organisational Culture	Learning	0.593	0.625	0.093	
Sustainable Innovation Performance					
Model Fit					
			Saturated model	Estimated model	
SRMR			0.046	0.048	
d_ ULS			0.634	0.682	
d_ G			0.276	0.274	
Chi-square			379.094	373.838	
NFI			0.913	0.914	
Q Square					
			Q²predict	RMSE	MAE
Absorptive Capacity			0.365	0.805	0.633
Knowledge Sharing Capability			0.379	0.796	0.639
Sustainable Innovation Performance			0.472	0.735	0.584

Source : Data Processed, 2026

Table 6. Hypothesis

Hypothesis	Relationship	Original Sample	Sample Mean	STDEV	T Statistics	95% CI	P Values	VAF	Decision
H1	Organisational Learning Culture -> Knowledge Sharing Capability	0.620	0.619	0.048	12.973	[0.515, 0.707]	$p < 0.001$	-	Supported
H2	Organisational Learning Culture -> Absorptive Capacity	0.610	0.609	0.058	10.454	[0.482, 0.712]	$p < 0.001$	-	Supported
H3	Organisational Learning Culture -> Sustainable Innovation Performance	0.265	0.263	0.063	4.228	[0.147, 0.395]	$p < 0.001$	-	Supported
H4	Knowledge Sharing Capability -> Sustainable Innovation Performance	0.358	0.357	0.053	6.723	[0.251, 0.461]	$p < 0.001$	-	Supported
H5	Organisational Learning Culture -> Knowledge Sharing Capability -> Sustainable Innovation Performance	0.222	0.221	0.037	5.954	[0.154, 0.299]	$p < 0.001$	32.1%	Supported
H6	Absorptive Capacity -> Sustainable Innovation Performance	0.334	0.336	0.059	5.651	[0.212, 0.445]	$p < 0.001$	-	Supported
H7	Organisational Learning Culture -> Absorptive Capacity -> Sustainable Innovation Performance	0.204	0.205	0.044	4.632	[0.122, 0.291]	$p < 0.001$	29.5%	Supported

Source : Data Processed, 2026

implementation (Lockyer et al., 2024). Teaching innovation, sustainability-based learning activities, curriculum adaptation, digital learning practices, and school improvement programmes are more likely to be sustained when teachers exchange ideas and convert individual experience into collective school-level practices (Davis-Singaravelu, 2022). This interpretation is consistent with studies that highlight knowledge sharing as a mechanism for scaling ideas, reducing repeated trial-and-error, and improving consistency in organisational practice (Koster, 2022; Wan et al., 2024).

Absorptive capacity was also strongly associated with sustainable innovation performance, supporting the importance of adapting to external knowledge, technologies, policies, and institutional change (Pietrzak, 2025; Qadeer & Hussain, 2025). Absorptive capacity may show a slightly weaker effect because external knowledge must first be adapted to school priorities and routines. Both knowledge sharing capability ($\beta = 0.222$, $p < 0.001$) and absorptive capacity ($\beta = 0.204$, $p < 0.001$) significantly mediated the relationship, supporting H5 and H7, with knowledge sharing showing the slightly stronger pathway (Koster, 2022; Rahim et al., 2023).

The absorptive capacity pathway also remains important, indicating that learning-oriented schools are better able to recognise and apply external knowledge to support innovation. (Makhloufi et al., 2021); (Ismail et al., 2026); (Witthöft et al., 2025). The significant direct effect confirms partial mediation. Effect sizes show that organisational learning culture contributes more strongly to knowledge sharing capability ($f^2 = 0.625$) and absorptive capacity ($f^2 = 0.593$) than directly to sustainable innovation performance ($f^2 = 0.093$). The model explains 64.1% of sustainable innovation performance, suggesting that learning culture operates mainly through knowledge-based capabilities (Liu & Yang, 2024); (M. A. Wibowo, 2022); (Krawczyk & Urban, 2026).

School leadership may partly explain the observed relationships, as stronger leadership could simultaneously enhance learning culture, knowledge capabilities, and sustainable innovation performance (Ogunbayo & Yassim, 2025); (Shatat, 2026). School resources may also influence the findings, as better funding, digital facilities, training, and partnerships can strengthen knowledge capabilities and sustainable innovation (Santosa et al., 2025); (Shehzad et al., 2022). Third, digital infrastructure may be especially relevant in Jabodetabek, where access to digital platforms, online teacher networks, and technology-supported learning may vary across schools (Yaqin et al., 2023); (Basatha et al., 2025). Fourth, common-method effects may have inflated the observed associations because all variables were measured using teacher self-reports at one point in time. Teachers who evaluate their schools positively in one area may also evaluate other areas positively (Tuytens & Devos, 2017). The findings should be interpreted as perceived associations rather than causal effects. Future studies should examine additional contextual factors and use longitudinal, multi-source, or mixed-method designs to test the robustness and temporal direction of these relationships.

Theoretical Implications

This study extends the Knowledge-Based View to senior high schools by showing that organisational learning culture is associated with knowledge sharing capability and absorptive capacity. These capabilities represent the internal exchange of teacher knowledge and the recognition and application of external educational knowledge. The findings suggest that learning culture is linked to sustainable innovation mainly through the development and use of these knowledge-based capabilities.

Practical Implications

Schools should translate a learning-oriented culture into concrete practices that strengthen knowledge sharing and absorptive capacity. Peer mentoring, professional learning communities, collaborative planning, training, digital learning, university partnerships, and community projects may support these capabilities and sustainable innovation. However, these implications should be interpreted as evidence-based recommendations rather than causal prescriptions.

Limitations And Future Research

This study is limited by its cross-sectional design, purposive sampling, self-reported data, and potential common method bias, which restrict causal inference and generalisability. Future research should use longitudinal, probability-based, multi-source, or mixed-method designs across broader school contexts. Additional factors such as leadership, resources, digital infrastructure, workload, psychological safety, innovation climate, accreditation, school type, and policy support should also be examined to provide a more comprehensive explanation of sustainable innovation performance.

Conclusion

This study found that organisational learning culture was positively associated with knowledge sharing capability ($\beta = 0.620$, $p < 0.001$), absorptive capacity ($\beta = 0.610$, $p < 0.001$), and sustainable innovation performance ($\beta = 0.265$, $p < 0.001$). The model explained 37.2% of absorptive capacity, 38.5% of knowledge sharing capability, and 64.1% of sustainable innovation performance. Knowledge sharing capability ($\beta = 0.358$, $p < 0.001$) and absorptive capacity ($\beta = 0.334$, $p < 0.001$) were also positively associated with sustainable innovation performance and partially mediated the relationship between organisational learning culture and sustainable innovation performance, with indirect effects of $\beta = 0.222$ and $\beta = 0.204$, respectively.

These findings extend the Knowledge-Based View by showing that learning-oriented school cultures are associated with sustainable innovation through internal knowledge sharing and external knowledge absorption. Schools may therefore strengthen collaboration, professional learning, training, digital learning, and external partnerships. However, the cross-sectional, self-reported, and purposive sampling design limits causal inference and generalisability. Future studies should use longitudinal, multi-source, broader, and multilevel designs. Overall, organisational learning culture is associated with teacher-perceived sustainable innovation performance both directly and through knowledge sharing capability and absorptive capacity.

Author contributions

Sunarti contributed to the study conceptualization, methodology, research design, data collection, data curation, provision of research materials, and formal analysis. Cecep Yoto Haryoto contributed to the interpretation and validation of findings, manuscript drafting, critical review, revision, and publication-related activities. Both authors reviewed and approved the final manuscript and agreed to be accountable for the integrity and accuracy of the work.

Acknowledgements

The authors thank the senior high school teachers in Jabodetabek who participated in this study, as well as the schools, professional networks, academic peers, and

colleagues who supported respondent access, data collection, administrative processes, and manuscript

development.

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