Journal of Education and Teaching (JET)
Vol. 7 No. 3 2026

# Building Institutional Adaptability in Higher Education through Agile Leadership and Self-Organizing Capacity

Draft article history
Submitted: 06-01-2026;
Revised: 07-22-2026;
Accepted: 07-23-2026;

**Helina Apriyani**[1], **Aan Komariah**[2], **Asep Suryana**[3], **Nur Aedi**[4]
Educational Administration, Universitas Pendidikan Indonesia, Indonesia[1,2,3,4]
**Corresponding email:** helina.apriyani@upi.edu

**ABSTRACT:** This study examines how agile leadership contributes to institutional adaptability in higher education through self-organizing capacity. Using a quantitative explanatory design, data from 142 academic and managerial personnel were analyzed with Partial Least Squares Structural Equation Modeling. The results show that agile leadership significantly influences self-organizing capacity ($\beta = 0.812$, $p < 0.001$) and institutional adaptability ($\beta = 0.430$, $p < 0.001$), while self-organizing capacity also significantly affects institutional adaptability ($\beta = 0.515$, $p < 0.001$). The model explains 65.9% of the variance in self-organizing capacity and 81.0% in institutional adaptability. Mediation analysis confirms a complementary partial mediation effect ($\beta = 0.418$, $p < 0.001$), indicating that agile leadership strengthens adaptability both directly and by enabling distributed coordination, shared responsibility, and adaptive problem-solving. By integrating Dynamic Capabilities Theory, Complexity Leadership Theory, and Organizational Agility, this study positions self-organizing capacity as a meso-level mechanism connecting leader-level agility with institution-level adaptability. The findings suggest that universities should develop guided autonomy, cross-unit collaboration, continuous learning, and data-informed decision-making.

**Keywords**: agile leadership, higher education, institutional adaptability, self-organizing capacity, organizational agility.

**ABSTRAK:** *Penelitian ini menguji kontribusi agile leadership terhadap adaptabilitas institusi perguruan tinggi melalui self-organizing capacity. Dengan desain kuantitatif eksplanatori, data dari 142 tenaga akademik dan manajerial dianalisis menggunakan Partial Least Squares Structural Equation Modeling. Hasil menunjukkan bahwa agile leadership berpengaruh signifikan terhadap self-organizing capacity ($\beta = 0{,}812$; $p < 0{,}001$) dan adaptabilitas institusi ($\beta = 0{,}430$; $p < 0{,}001$), sedangkan self-organizing capacity juga berpengaruh signifikan terhadap adaptabilitas institusi ($\beta = 0{,}515$; $p < 0{,}001$). Model menjelaskan 65,9% variasi self-organizing capacity dan 81,0% variasi adaptabilitas institusi. Analisis mediasi mengonfirmasi complementary partial mediation ($\beta = 0{,}418$; $p < 0{,}001$), yang menunjukkan bahwa agile leadership memperkuat adaptabilitas secara langsung maupun melalui koordinasi terdistribusi, tanggung jawab bersama, dan pemecahan masalah adaptif. Dengan mengintegrasikan Dynamic Capabilities Theory, Complexity Leadership Theory, dan Organizational Agility, penelitian ini menempatkan self-organizing capacity sebagai mekanisme meso yang menghubungkan kelincahan pemimpin dengan adaptabilitas institusi. Temuan menegaskan pentingnya otonomi terarah, kolaborasi lintas unit, pembelajaran berkelanjutan, dan pengambilan keputusan berbasis data dalam tata kelola perguruan tinggi.*

***Kata kunci**: adaptivitas institusi, agile leadership, kelincahan organisasi, pendidikan tinggi, self-organizing capacity.*

## INTRODUCTION

Higher education institutions increasingly operate in environments marked by technological disruption, intensified accountability, shifting stakeholder expectations, and persistent uncertainty. Universities are no longer expected only to produce and transmit knowledge; they must also sustain educational quality, accelerate digital transformation, preserve social relevance, and maintain organizational continuity amid rapid change. The COVID-19 pandemic exposed this challenge by forcing institutions to redesign teaching, assessment, administration, student support, and governance practices within a short period. These pressures demonstrated that institutional continuity depends not only on infrastructure and formal policy, but also on the capacity of leaders and academic communities to interpret change, reorganize resources, and respond collectively. Consequently, higher education leadership is increasingly expected to move beyond rigid bureaucratic control toward more responsive, participatory, and learning-oriented forms of governance (Kele & Mzileni, 2021; Varga-Atkins et al., 2021; Wu & Yusuf, 2026).

Within this environment, institutional adaptability has become a critical capability. Institutional adaptability refers to the capacity of a university to adjust its strategies, structures, routines, resources, and relationships in response to emerging internal and external demands. Although closely related to resilience, adaptability emphasizes proactive adjustment and organizational renewal rather than merely recovering from disruption. Adaptive universities can revise learning systems, reconfigure decision-making processes, mobilize stakeholders, integrate digital technologies, and maintain institutional performance under changing conditions. Muir et al. (2025), for example, found that organizational resilience in a medicine and health sciences university was supported by preparedness, agility, team cohesion, social responsibility, and continuous learning. Similarly, Wu and Yusuf (2026) identify leadership agility, digital readiness, and strategic adaptation as important pathways through which higher education institutions strengthen resilience during digital transformation. These findings suggest that adaptability should be understood not as a temporary reaction to crisis, but as an institution-wide capability shaped by leadership, organizational processes, and internal coordination.

The Dynamic Capabilities Theory provides an important foundation for understanding this capability. It explains how organizations operating in rapidly changing environments renew their competencies by sensing environmental shifts, seizing emerging opportunities, and reconfiguring resources and organizational practices (Teece et al., 1997; Teece, 2007). Applied to higher education, this perspective suggests that universities become adaptive when they can detect changes in technology, policy, student needs, and stakeholder expectations and subsequently reorganize their academic and managerial practices. However, the dynamic capabilities perspective does not, by itself, fully explain how leadership behavior activates distributed organizational actors so that sensing and reconfiguration occur across faculties, departments, professional units, and academic teams. This limitation makes the leadership and internal


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

coordination mechanisms underlying institutional adaptability especially important.

One leadership approach that has gained attention in this context is agile leadership. Agile leadership refers to a leader's capacity to interpret changing conditions, make timely decisions, involve relevant stakeholders, encourage experimentation, and coordinate adaptive action across organizational boundaries. It encompasses self-leadership agility, context-setting agility, stakeholder agility, and creativity agility. In higher education, these capabilities are particularly relevant because universities must simultaneously respond to demands for academic quality, technological integration, student-centred services, financial sustainability, and public accountability. Samodien et al. (2024) found that agile leadership positively influences institutional performance in South African higher education. Nissim and Simon (2023) similarly demonstrated that agile leadership enabled a teacher-training institution to maintain organizational functioning during the COVID-19 crisis through rapid decision-making, direct communication, staff support, and continuous adjustment. Varga-Atkins et al. (2021) further showed that student-centred agile decision-making helped universities in Australia and the United Kingdom respond to uncertainty by rapidly using student-voice data, expanding learning choices, improving technological access, and prioritizing student welfare.

Although these studies establish the relevance of agile leadership, much of the existing literature treats it as a direct antecedent of performance, resilience, digital transformation, or crisis response. This direct-effect perspective leaves an important theoretical issue insufficiently explained: how does agility at the leadership level become adaptability at the institutional level? Leadership may initiate change, provide direction, and authorize experimentation, but institutional adaptability requires more than the actions of individual leaders. It depends on whether academic and administrative actors can coordinate their work, exercise responsible autonomy, solve emerging problems, exchange knowledge, and reorganize routines without waiting for continuous top-down instruction. Thus, the effects of agile leadership are likely to depend on an internal organizational mechanism through which leadership direction is translated into distributed and sustained adaptive action.

Complexity Leadership Theory helps explain this mechanism by conceptualizing leadership as a process that enables learning, creativity, emergence, and adaptation within complex adaptive systems. Rather than viewing leadership solely as formal authority, this theory emphasizes the interaction between administrative structures, enabling leadership practices, and adaptive dynamics. It also recognizes that complex organizations require both emergent self-organization and sufficient formal coordination to align adaptive activities with institutional missions (Uhl-Bien et al., 2007). This perspective is particularly applicable to universities because they are knowledge-intensive institutions composed of semi-autonomous faculties, departments, research groups, professional communities, and administrative units. Archer and Zhang (2021) similarly describe higher education as a complex adaptive environment in which


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

effective leadership must be interactive, responsive, and sensitive to diverse organizational and cultural conditions.

Within such an environment, self-organizing capacity can be understood as the ability of individuals, teams, and organizational units to coordinate activities, regulate work processes, distribute responsibilities, solve problems, and adjust practices with limited dependence on centralized intervention. Self-organization does not imply the absence of leadership or accountability. Instead, it reflects guided autonomy in which members act within shared institutional goals, values, information systems, and decision boundaries. Research in educational settings supports the importance of this capacity. Ritella and Loperfido (2021) found that self-organization in blended learning involved autonomy, self-regulation, and the purposeful arrangement of multiple learning environments. Sjølie et al. (2022) showed that self-organizing student teams adapted to online collaboration by modifying communication practices, strengthening reflection, and developing new socio-emotional and cognitive routines. Although these studies focus primarily on learning teams, their underlying logic is relevant to higher education institutions: adaptation becomes more sustainable when organizational members function as active agents of change rather than passive recipients of managerial instructions.

The connection among these concepts can also be clarified through the organizational agility perspective. Organizational agility refers to the capacity to sense environmental change and respond through timely and coordinated adjustments in resources, processes, and actions (Overby et al., 2006). From this perspective, agile leadership provides contextual awareness, strategic direction, stakeholder engagement, and support for experimentation, while self-organizing capacity enables organizational members to convert these leadership conditions into decentralized sensing, collaborative problem-solving, and operational reconfiguration. Institutional adaptability represents the broader organizational outcome of these processes. Therefore, leadership agility and institutional adaptability should not be treated as interchangeable concepts: the former concerns leaders' capacity to guide action under changing conditions, whereas the latter concerns the institution's collective capacity to adjust its structures, processes, and practices.

Despite growing interest in these areas, the literature remains fragmented. Research on digital agility emphasizes leadership, digital capabilities, and transformation processes (Srivastava et al., 2023), while studies of agile methodologies in education focus on teamwork, collaboration, metacognition, and student engagement (Thiyagarajan et al., 2023, 2024). Other studies examine agile performance management (Kanyangale & Chikandiwa, 2022), strategic development in higher education management (Cherepovska et al., 2021), culturally responsive leadership in complex adaptive systems (Archer & Zhang, 2021), and digitally supported learning journeys (Hodgkin et al., 2024). However, these streams have not been sufficiently integrated to explain how leader-level agility activates an organization-level capacity that subsequently strengthens institution-level adaptability. In particular, self-organizing capacity has rarely been


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

empirically examined as the mechanism connecting agile leadership with institutional adaptability in higher education.

This study addresses this gap by examining the direct and indirect relationships among agile leadership, self-organizing capacity, and institutional adaptability. It integrates Dynamic Capabilities Theory, Complexity Leadership Theory, and Organizational Agility to propose that agile leadership creates enabling conditions for distributed action, while self-organizing capacity translates those conditions into coordinated institutional adjustment. The study contributes theoretically by positioning self-organizing capacity as a meso-level organizational mechanism connecting leader-level agility with institution-level adaptability. Empirically, it tests whether agile leadership affects institutional adaptability directly and indirectly through self-organizing capacity. Practically, it offers evidence for university leaders seeking to balance strategic direction with responsible autonomy, distributed collaboration, continuous learning, and flexible decision-making. Accordingly, this study aims to determine how agile leadership contributes to institutional adaptability in higher education and to assess the mediating role of self-organizing capacity in that relationship.

## RESEARCH METHOD

This study employed a quantitative explanatory design to examine the direct and indirect relationships among Agile Leadership, Self-Organizing Capacity, and Institutional Adaptability in higher education. This design was appropriate because the study sought to estimate relationships among latent constructs, explain variance in the endogenous variables, and test the mediating role of Self-Organizing Capacity. The explanatory and predictive orientation of the study is consistent with the application of Partial Least Squares Structural Equation Modeling for examining complex relationships among organizational constructs (Hair et al., 2019).

The final dataset comprised 142 responses from academic and managerial personnel in higher education institutions. These respondents were included because their organizational roles provided relevant experience of leadership practices, internal coordination, and institutional responses to change. Data were collected using a structured questionnaire measuring three multidimensional constructs. Agile Leadership comprised Self-Leadership Agility, Context-Setting Agility, Stakeholder Agility, and Creativity Agility. Self-Organizing Capacity included Self-Management, Collaboration and Adaptability, Morality and Solidarity, and Systems Thinking and Problem-Solving. Institutional Adaptability consisted of Flexibility and Adaptability, Distributed Leadership and Collaboration, Emotional Intelligence and Sensemaking, Organizational Structure and Leadership, and Change Process and Integration. The use of multiple indicators and dimensions was intended to represent the conceptual breadth of each latent construct, consistent with established principles of questionnaire-based construct measurement (Hinkin, 1998).

Data were analyzed using PLS-SEM with SmartPLS 4. PLS-SEM was selected because the model combined explanatory and predictive objectives, tested direct


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

and mediated relationships, and involved multidimensional higher-order constructs. The three principal constructs were specified as reflective–reflective hierarchical component models using the repeated-indicator approach. This approach allows the indicators of the lower-order dimensions to be simultaneously assigned to their corresponding higher-order constructs, enabling the assessment of both hierarchical measurement relationships and structural paths within a single model (Becker et al., 2012; Hair et al., 2019).

The measurement model was assessed using indicator loadings, Cronbach's alpha, rho_A, composite reliability, and average variance extracted. Internal consistency and convergent validity were evaluated using the recommended reliability and AVE criteria (Fornell & Larcker, 1981). Discriminant validity was examined through the heterotrait–monotrait ratio because it provides a more sensitive assessment of construct distinctiveness than traditional cross-loading or Fornell–Larcker criteria (Henseler et al., 2015). Structural collinearity was assessed using inner variance inflation factor values, while approximate model fit was evaluated using the standardized root mean square residual. Because the data were self-reported and collected from a single source, common method bias could not be conclusively excluded solely through collinearity assessment (Podsakoff et al., 2003). Measurement invariance was not tested because the study did not compare predefined respondent groups.

The structural model was evaluated using path coefficients, t-statistics, p-values, 95% bootstrap confidence intervals, coefficients of determination, effect sizes, and direct, indirect, and total effects. Statistical significance was assessed through bootstrapping with 5,000 subsamples, a two-tailed test, and a 5% significance level. Out-of-sample predictive performance was examined using PLSpredict with 10 folds and 10 repetitions. Predictive relevance was assessed through $Q^2$_predict, while PLS-SEM prediction errors were compared with a linear-model benchmark. CVPAT was also used to determine whether the proposed model produced significantly lower prediction loss than the benchmark model (Hair et al., 2019; Shmueli et al., 2019).

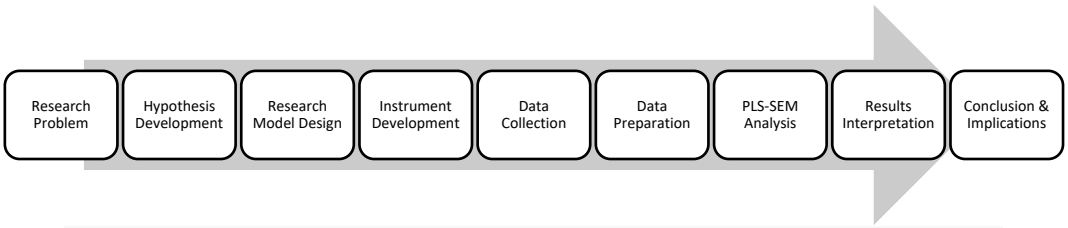



**Figure 1.** Research Flowchart (*Source: Authors' elaboration based on the quantitative procedure, 2026*)

## RESULT AND DISCUSSION

### Measurement Model Assessment

The measurement model was evaluated at the lower-order and higher-order construct levels. At the lower-order level, all indicators loaded adequately on their respective dimensions, with outer loading values ranging from 0.826 to 0.971. The lowest loading was observed for SM2 on Self-Management (0.826),


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

whereas the highest loadings were found for CPI1 and CPI2 on Change Process and Integration (0.971). Therefore, all indicators were retained in the model.

At the higher-order level, the four dimensions of Agile Leadership demonstrated significant loadings ranging from 0.846 to 0.914. Creativity Agility showed the strongest relationship with Agile Leadership (β = 0.914), followed by Context-Setting Agility (β = 0.892), Stakeholder Agility (β = 0.886), and Self-Leadership Agility (β = 0.846). The dimensions of Self-Organizing Capacity also loaded significantly on the higher-order construct, ranging from 0.705 to 0.882. Morality and Solidarity had the highest loading (β = 0.882), followed by Collaboration and Adaptability (β = 0.876), Systems Thinking and Problem-Solving (β = 0.873), and Self-Management (β = 0.705). Institutional Adaptability was significantly represented by Flexibility and Adaptability (β = 0.908), Organizational Structure and Leadership (β = 0.902), Change Process and Integration (β = 0.860), Emotional Intelligence and Sensemaking (β = 0.805), and Distributed Leadership and Collaboration (β = 0.798). All relationships between the higher-order constructs and their dimensions were statistically significant at $p < 0.001$.

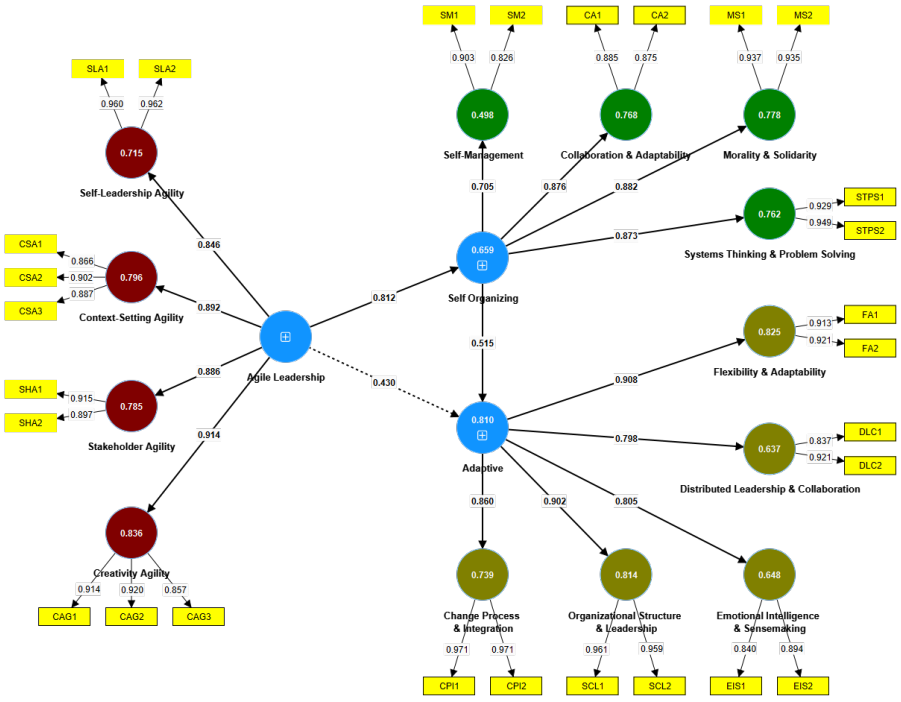



**Figure 2.** Measurement Model Assessment (*Source: SmartPLS output, 2026*)

Internal consistency and convergent validity were evaluated using Cronbach's alpha, rho_A, composite reliability, and average variance extracted. Composite reliability values ranged from 0.856 to 0.970, while all AVE values exceeded 0.50, ranging from 0.579 to 0.942. These results indicate satisfactory internal consistency and convergent validity.

Cronbach's alpha values for Self-Management (0.669) and Emotional Intelligence and Sensemaking (0.674) were slightly below 0.70. However, both constructs recorded adequate rho_A values, composite reliability values above 0.85, and AVE values above 0.70. Their retention was therefore supported by the


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

overall reliability evidence, although the findings were interpreted cautiously because each dimension was measured using only two indicators.

**Table 1.** Construct Reliability and Convergent Validity

| Construct | Cronbach's α | rho_A | rho_C | AVE |
|---|---|---|---|---|
| Agile Leadership | 0.940 | 0.940 | 0.949 | 0.649 |
| Self-Leadership Agility | 0.917 | 0.917 | 0.960 | 0.923 |
| Context-Setting Agility | 0.862 | 0.864 | 0.916 | 0.783 |
| Stakeholder Agility | 0.782 | 0.787 | 0.902 | 0.821 |
| Creativity Agility | 0.879 | 0.879 | 0.925 | 0.806 |
| Self-Organizing Capacity | 0.892 | 0.905 | 0.915 | 0.579 |
| Self-Management | 0.669 | 0.702 | 0.856 | 0.749 |
| Collaboration and Adaptability | 0.709 | 0.710 | 0.873 | 0.775 |
| Morality and Solidarity | 0.859 | 0.859 | 0.934 | 0.877 |
| Systems Thinking and Problem-Solving | 0.867 | 0.882 | 0.937 | 0.882 |
| Institutional Adaptability | 0.930 | 0.938 | 0.942 | 0.622 |
| Flexibility and Adaptability | 0.810 | 0.811 | 0.913 | 0.840 |
| Distributed Leadership and Collaboration | 0.716 | 0.773 | 0.873 | 0.774 |
| Emotional Intelligence and Sensemaking | 0.674 | 0.690 | 0.859 | 0.752 |
| Organizational Structure and Leadership | 0.915 | 0.916 | 0.959 | 0.922 |
| Change Process and Integration | 0.939 | 0.939 | 0.970 | 0.942 |

***Source:*** *SmartPLS output, 2026.*

Discriminant validity among the three higher-order constructs was assessed using the heterotrait–monotrait ratio. The HTMT values between Agile Leadership and Self-Organizing Capacity (0.881) and between Agile Leadership and Institutional Adaptability (0.899) were below the threshold of 0.90. However, the HTMT value between Self-Organizing Capacity and Institutional Adaptability was 0.939, indicating substantial empirical proximity between the two constructs. This result suggests that the distinction between these constructs should be interpreted cautiously, particularly because both include collaboration- and adaptability-related dimensions.

**Table 2.** HTMT among the Higher-Order Constructs

| Construct Pair | HTMT | Interpretation |
|---|---|---|
| Agile Leadership – Self-Organizing Capacity | 0.881 | Acceptable |
| Agile Leadership – Institutional Adaptability | 0.899 | Acceptable |
| Self-Organizing Capacity – Institutional Adaptability | 0.939 | Substantial conceptual proximity |

***Source:*** *SmartPLS output, 2026.*

Structural collinearity was assessed through inner VIF values. Agile Leadership and Self-Organizing Capacity each produced an inner VIF of 2.929 when predicting Institutional Adaptability. These values indicate that structural collinearity was not at a critical level. The SRMR values were 0.091 for the saturated model and 0.097 for the estimated model. Both values were below the more liberal threshold of 0.10 but above the stricter criterion of 0.08; therefore, model fit was regarded as marginally acceptable rather than optimal.

### *Structural Model Assessment*


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

The structural model was evaluated using bootstrapping with 5,000 subsamples. All three principal structural relationships were positive and statistically significant. Agile Leadership had a strong effect on Self-Organizing Capacity (β = 0.812, t = 21.763, p < 0.001, 95% CI [0.730, 0.876]). It also had a significant direct effect on Institutional Adaptability (β = 0.430, t = 4.681, p < 0.001, 95% CI [0.249, 0.611]). Self-Organizing Capacity significantly predicted Institutional Adaptability (β = 0.515, t = 5.609, p < 0.001, 95% CI [0.333, 0.690]). Because none of the confidence intervals included zero, all three structural hypotheses were supported.

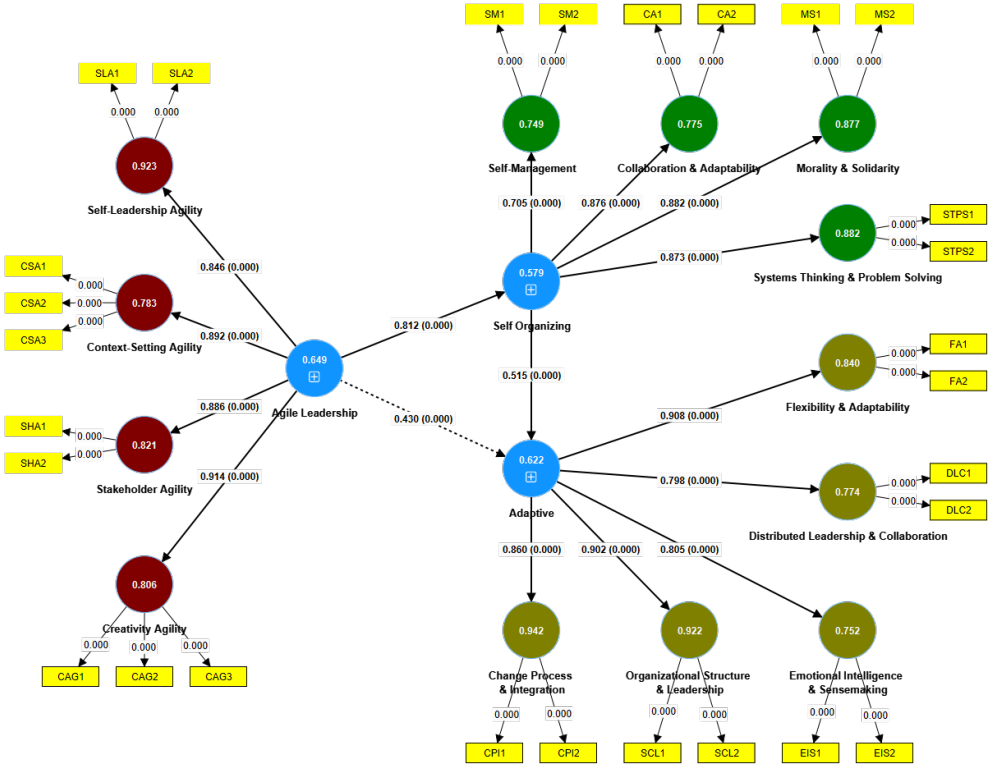



**Figure 3.** Structural Model with Path Coefficients (Source: SmartPLS bootstrapping output, 2026)

**Table 3.** Structural Model and Hypothesis Testing

| Hypo-thesis | Structural Relationship | B | t | p | 95% CI | $f^2$ | Decision |
|---|---|---|---|---|---|---|---|
| H1 | Agile Leadership → Self-Organizing Capacity | 0.812 | 21.763 | <0.001 | [0.730, 0.876] | 1.929 | Supported |
| H2 | Agile Leadership → Institutional Adaptability | 0.430 | 4.681 | <0.001 | [0.249, 0.611] | 0.332 | Supported |
| H3 | Self-Organizing Capacity → Institutional Adaptability | 0.515 | 5.609 | <0.001 | [0.333, 0.690] | 0.475 | Supported |

***Source:*** *SmartPLS bootstrapping output, 2026.*

The effect-size results further clarified the relative contribution of each predictor. Agile Leadership had a large effect on Self-Organizing Capacity ($f^2$ = 1.929), showing that it was a substantial determinant of the institution's internal capacity to coordinate and regulate adaptive action. Self-Organizing Capacity also


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

had a large effect on Institutional Adaptability ($f^2 = 0.475$). Meanwhile, the direct effect of Agile Leadership on Institutional Adaptability was moderate to large ($f^2 = 0.332$). Thus, Agile Leadership contributed to institutional adaptability both directly and through its strong contribution to Self-Organizing Capacity.

### *Coefficient of Determination*

Agile Leadership explained 65.9% of the variance in Self-Organizing Capacity ($R^2 = 0.659$; adjusted $R^2 = 0.656$). Agile Leadership and Self-Organizing Capacity jointly explained 81.0% of the variance in Institutional Adaptability ($R^2 = 0.810$; adjusted $R^2 = 0.807$). These findings demonstrate that the model had substantial explanatory power, particularly for Institutional Adaptability.

**Table 4.** Coefficient of Determination

| Endogenous Construct | $R^2$ | Adjusted $R^2$ | Interpretation |
|---|---|---|---|
| Self-Organizing Capacity | 0.659 | 0.656 | Moderate to substantial |
| Institutional Adaptability | 0.810 | 0.807 | Substantial |

***Source:*** *SmartPLS output, 2026.*

### *Mediation Effect*

The mediation analysis showed that Agile Leadership had a significant indirect effect on Institutional Adaptability through Self-Organizing Capacity ($\beta = 0.418$, $t = 5.518$, $p < 0.001$, 95% CI [0.270, 0.570]). The total effect of Agile Leadership on Institutional Adaptability was also significant ($\beta = 0.848$, $t = 27.956$, $p < 0.001$, 95% CI [0.782, 0.900]).

The indirect effect accounted for approximately 49.3% of the total effect. Because the direct and indirect effects were both positive and statistically significant, Self-Organizing Capacity demonstrated complementary partial mediation. Thus, Agile Leadership influenced Institutional Adaptability directly while also operating through the development of Self-Organizing Capacity.

**Table 5.** Mediation Analysis

| Mediation Path | Indirect Effect | t | p | 95% CI | VAF | Mediation Type |
|---|---|---|---|---|---|---|
| Agile Leadership → Self-Organizing Capacity → Institutional Adaptability | 0.418 | 5.518 | <0.001 | [0.270, 0.570] | 49.3% | Complementary partial mediation |

***Source:*** *SmartPLS bootstrapping output, 2026.*

### *Predictive Assessment*

The model's out-of-sample predictive performance was assessed using PLSpredict with 10 folds and 10 repetitions. Institutional Adaptability produced a $Q^2$_predict value of 0.716, while Self-Organizing Capacity produced a $Q^2$_predict value of 0.656. All indicators of both endogenous constructs had positive


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

$Q^2$_predict values, showing that the model had predictive relevance beyond a naïve benchmark.

For Institutional Adaptability, PLS-SEM generated lower RMSE values than the linear-model benchmark for eight of ten indicators. For Self-Organizing Capacity, PLS-SEM produced lower RMSE values for seven of eight indicators. This pattern indicates medium predictive power for both endogenous constructs.

The CVPAT results further showed that the PLS-SEM model achieved significantly lower prediction loss than the linear model for Institutional Adaptability (average loss difference = −0.041, $p < 0.001$) and Self-Organizing Capacity (average loss difference = −0.029, $p = 0.021$). The model also significantly outperformed the indicator-average benchmark for both constructs.

**Table 6.** Predictive Performance Assessment

| Endogenous Construct | $Q^2$_ predict | Indicators with $Q^2$_predict > 0 | PLS RMSE Lower than LM | CVPAT Difference vs. LM | Interpretation |
|---|---|---|---|---|---|
| Institutional Adaptability | 0.716 | 10 of 10 | 8 of 10 | −0.041, p < 0.001 | Medium predictive power |
| Self-Organizing Capacity | 0.656 | 8 of 8 | 7 of 8 | −0.029, p = 0.021 | Medium predictive power |

***Source:*** *SmartPLS PLSpredict and CVPAT output, 2026.*

The results supported all direct hypotheses and confirmed the mediating role of Self-Organizing Capacity. The model demonstrated strong explanatory and meaningful predictive performance, although the elevated HTMT value between Self-Organizing Capacity and Institutional Adaptability indicates that the empirical distinction between these two constructs should be treated cautiously.

## Discussion

### Agile Leadership as an Enabler of Self-Organizing Capacity

The strongest relationship in the model was the effect of Agile Leadership on Self-Organizing Capacity. This indicates that agile leaders contribute to change primarily by creating conditions in which members can exercise responsible autonomy rather than by centralizing every adaptive decision. As Uhl-Bien et al. (2007) explain, leadership in complex adaptive systems enables interaction, learning, and emergence alongside formal coordination. In universities, self-leadership agility supports reflection, context-setting agility clarifies direction, stakeholder agility connects dispersed interests, and creativity agility legitimizes experimentation. Together, these practices reduce dependence on repeated top-down instructions while preserving strategic alignment.

This interpretation is consistent with recent higher education evidence. Varga-Atkins et al. (2021) found that agile university responses during the pandemic relied on rapidly incorporating student-voice data, broadening learning choices, and addressing technological access. Nissim and Simon (2023) likewise showed that fast communication, staff support, training, and iterative adjustment helped sustain institutional operations. More recently, Laufer et al. (2025a) found


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

that leaders fostered technological innovation when they shared decision-making, trusted staff expertise, and created safe spaces for experimentation. These studies explain why leadership agility strengthens self-organization: it provides direction, legitimacy, and support for coordinated local action.

**Self-Organizing Capacity as a Foundation of Institutional Adaptability**

Self-Organizing Capacity exerted a strong effect on Institutional Adaptability, exceeding the direct effect of Agile Leadership. This suggests that institutional responses become sustainable only when leadership direction is translated into coordinated practices across faculties and professional units. Teece (2007) argues that dynamic capabilities require organizations to sense change, seize opportunities, and reconfigure resources; in universities, these activities cannot be performed by senior leaders alone. Self-managing actors distribute environmental sensing, collaboration supports knowledge exchange, and systems thinking helps units anticipate the wider consequences of local decisions.

Recent research supports this process-based explanation. Sjølie et al. (2022) showed that self-organizing teams adapted by revising communication, strengthening reflection, and developing new socio-emotional routines. At the institutional level, Shaya et al. (2023) conceptualized university resilience as a progression through anticipation, coping, and adaptation, supported by knowledge, resources, social relationships, innovative culture, and crisis leadership. Laufer et al. (2025b) similarly identified accumulating resources, engaging members, and reassembling routines as practices through which European universities combined resilience and creativity. Adaptability therefore emerges through distributed learning and reconfiguration, not merely through formal policy changes.

The elevated HTMT value between Self-Organizing Capacity and Institutional Adaptability nevertheless indicates substantial empirical proximity. This overlap is understandable because both constructs contain collaborative and adaptive elements, yet their theoretical roles remain distinct. Self-Organizing Capacity concerns the internal process through which members coordinate and reorganize work, whereas Institutional Adaptability concerns the broader outcome reflected in flexible structures, integrated change, and sustained responsiveness. Overby et al. (2006) similarly distinguish enabling processes from organizational agility as an outcome of sensing and responding. Further research should refine items that use similar collaboration- and adaptability-related language.

**Direct and Indirect Pathways to Institutional Adaptability**

Agile Leadership retained a significant direct effect on Institutional Adaptability, showing that some leadership responsibilities cannot be decentralized. Samodien et al. (2024) found that agile leadership contributed to higher education performance, while Wu and Yusuf (2026) linked leadership agility with resilience through digital readiness and strategic adaptation. Senior leaders remain responsible for setting priorities, allocating resources, engaging external


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

stakeholders, and ensuring regulatory compliance. These functions can directly accelerate structural adjustment, particularly when disruption requires institution-wide decisions beyond the authority of individual units.

The significant indirect effect confirms complementary partial mediation and explains how leader-level agility becomes institution-level adaptability. Agile leaders initiate sensemaking, stakeholder alignment, and experimentation, while self-organizing actors embed these conditions into routines and coordinated responses. Srivastava et al. (2023) similarly show that digital transformation leadership requires organizational capabilities that convert strategic intent into operational change. Because the indirect effect accounted for almost half of the total effect, leadership is most consequential when it develops an internal capacity that continues operating beyond individual interventions.

**Explanatory and Predictive Performance and Boundary Conditions**

The model's substantial explanatory power and positive $Q^2$_predict values indicate relevance for both explanation and prediction. Hair et al. (2019) caution that explanatory strength should be distinguished from predictive performance, and the present results support medium predictive power because PLS-SEM did not outperform the linear benchmark for every indicator. Nevertheless, the significant CVPAT results indicate meaningful predictive improvement for both endogenous constructs. This strengthens the practical relevance of treating self-organization as a mechanism rather than merely a descriptive organizational characteristic.

These effects should not be interpreted as support for unrestricted decentralization. Lee and Edmondson (2017) warn that less-hierarchical organizing may create role ambiguity, coordination burdens, and fragmented accountability when decision rights are unclear. Laufer et al. (2025a) similarly found that delegating digital-change responsibilities without adequate infrastructure, funding, or guidance demotivated university staff and constrained innovation. Complexity Leadership Theory therefore implies guided self-organization, not the removal of administration: universities require local autonomy alongside shared priorities, reliable information, escalation procedures, and clear accountability.

**Theoretical, Managerial, and Policy Implications**

Theoretically, the study integrates Dynamic Capabilities Theory, Complexity Leadership Theory, and Organizational Agility by positioning Self-Organizing Capacity as a meso-level mechanism. Teece (2007) explains sensing, seizing, and reconfiguring; Uhl-Bien et al. (2007) explain how leadership enables adaptive interaction; and Overby et al. (2006) explain how sensing becomes coordinated response. The mediation result shows that formal leadership and emergent self-organization are complementary rather than competing explanations of institutional adaptability.

Managerially, university leaders should assign clear decision rights to faculties and cross-functional teams while maintaining explicit boundaries and


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

accountability. Kanyangale and Chikandiwa (2022) emphasize continuous feedback and fluid performance management, which can be operationalized through short-cycle reviews, cross-unit problem-solving forums, and accessible data dashboards. Leadership development should therefore include contextual interpretation, stakeholder negotiation, systems thinking, and the ability to create safe but accountable spaces for experimentation.

From a policy perspective, adaptability should be treated as a governance capability rather than measured only through fixed outputs. Fernández et al. (2023) found that many higher education digital initiatives remained isolated from an integrated institutional strategy, showing why technology investment alone does not produce transformation. Quality-assurance frameworks should permit flexible programme and service adjustment while requiring transparent goals, data governance, continuity planning, and evidence of organizational learning.

### Limitations and Future Research

The findings remain limited by the cross-sectional, self-reported, and single-source design. Podsakoff et al. (2003) note that common method bias cannot be excluded solely through collinearity checks, while the high HTMT value indicates that the distinction between self-organizing processes and adaptive outcomes requires sharper measurement. Future studies should use longitudinal and multisource designs, compare institutional groups after establishing measurement invariance, and test moderators such as digital readiness, institutional autonomy, environmental turbulence, and innovation climate.

## CONCLUSION

This study advances the understanding of institutional adaptability in higher education by showing that adaptability is not produced solely by agile leaders or by decentralized organizational structures. Rather, it emerges when agile leadership creates the conditions for self-organizing capacity to develop across academic and managerial units. Agile leadership provides strategic direction, contextual awareness, stakeholder alignment, and support for experimentation, while self-organizing capacity enables organizational members to translate these conditions into coordinated decisions, collaborative problem-solving, and continuous adjustment of institutional practices.

The study's principal theoretical contribution lies in positioning self-organizing capacity as a meso-level mechanism connecting leader-level agility with institution-level adaptability. By integrating Dynamic Capabilities Theory, Complexity Leadership Theory, and Organizational Agility, the study clarifies that institutional adaptation depends on the interaction between formal leadership and distributed organizational agency. This perspective extends previous research that has commonly treated agile leadership as a direct predictor of institutional outcomes. It demonstrates that leadership becomes more consequential when it strengthens the institution's internal capacity to sense change, mobilize knowledge, reconfigure routines, and respond collectively.


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

Practically, higher education institutions should not interpret agility merely as faster decision-making or unrestricted decentralization. Adaptive governance requires guided self-organization, in which faculties, departments, and professional units receive sufficient autonomy to respond to emerging challenges while remaining aligned with shared priorities, clear decision boundaries, reliable information, and institutional accountability. University leaders should therefore strengthen cross-unit collaboration, continuous feedback, data-informed coordination, organizational learning, and distributed decision authority.

The conclusions should nevertheless be interpreted cautiously because the study used cross-sectional, self-reported data and identified substantial empirical proximity between self-organizing capacity and institutional adaptability. Future research should test the proposed mechanism through longitudinal, multisource, and cross-institutional designs and further refine the distinction between self-organizing processes and adaptive institutional outcomes.

## ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to Universitas Pendidikan Indonesia for providing the academic environment and institutional support that facilitated the completion of this research. The authors also extend their appreciation to all academic and managerial personnel who participated in this study and generously shared their insights and experiences. Their contributions were invaluable to the data collection process and the development of this research.

## REFERENCES

Archer, E., & Zhang, Y. (2021). The critical role of global and culturally responsive leadership for higher education in the 21st-century. *Journal of Interdisciplinary Studies in Education*, *10*(1), i–iv. https://doi.org/10.32674/jise.v10i1.2396

Becker, J.-M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: Guidelines for using reflective-formative type models. *Long Range Planning*, *45*(5–6), 359–394. https://doi.org/10.1016/j.lrp.2012.10.001

Cherepovska, T. V., Parubchak, I. O., & Karamyshev, D. V. (2021). Higher education management system based on principles of strategic development. *Journal of Higher Education Theory and Practice*, *21*(14), 31–40. https://doi.org/10.33423/jhetp.v21i14.4806

Fernández, A., Gómez, B., Binjaku, K., & Kajo Meçe, E. (2023). Digital transformation initiatives in higher education institutions: A multivocal literature review. *Education and Information Technologies*, *28*(10), 12351–12382. https://doi.org/10.1007/s10639-022-11544-0

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.1177/002224378101800104


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, *1*(1), 104–121. https://doi.org/10.1177/109442819800100106

Hodgkin, K., Davis, S., McInch, A., & Littlewood, J. (2024). Exploring the 'learner journey' of students undertaking a professional doctorate in Wales. *Research in Post-Compulsory Education*, *29*(3), 408–427. https://doi.org/10.1080/13596748.2024.2371647

Kanyangale, M. I., & Chikandiwa, C. (2022). Five pitfalls and solutions of performance management in a selected South African university during COVID-19. *Foundations of Management*, *14*, 111–126. https://doi.org/10.2478/fman-2022-0007

Kele, K., & Mzileni, P. (2021). Higher education leadership responses applied in two South African comprehensive universities during the COVID-19 pandemic: A critical discourse analysis. *Transformation in Higher Education*, *6*, Article a114. https://doi.org/10.4102/the.v6i0.114

Laufer, M., Deacon, B., Mende, M. A., & Schäfer, L. O. (2025a). Leading with trust: How university leaders can foster innovation with educational technology through organizational trust. *Innovative Higher Education*, *50*, 303–327. https://doi.org/10.1007/s10755-024-09733-5

Laufer, M., Schäfer, L. O., Kuper, F., & Deacon, B. (2025b). Building resilient and creative universities: Exploring the new normal for eight universities across Europe. *Discover Education*, *4*, Article 171. https://doi.org/10.1007/s44217-025-00580-w

Lee, M. Y., & Edmondson, A. C. (2017). Self-managing organizations: Exploring the limits of less-hierarchical organizing. *Research in Organizational Behavior*, *37*, 35–58. https://doi.org/10.1016/j.riob.2017.10.002

Muir, T., Poudyal, C. S., De Lima, R., & Otaki, F. (2025). Investigating organizational resilience in a medicine and health sciences university in United Arab Emirates. *PLOS ONE*, *20*(12), Article e0338728. https://doi.org/10.1371/journal.pone.0338728

Nissim, Y., & Simon, E. (2023). Agilecation: Agile leadership in a higher education institution (HEI) during the COVID-19 pandemic a test case. *European Journal of Contemporary Education*, *12*(1), 139–151. https://doi.org/10.13187/ejced.2023.1.139

Overby, E., Bharadwaj, A., & Sambamurthy, V. (2006). Enterprise agility and the enabling role of information technology. *European Journal of Information Systems*, *15*(2), 120–131. https://doi.org/10.1057/palgrave.ejis.3000600


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Ritella, G., & Loperfido, F. F. (2021). Students' self-organization of the learning environment during a blended knowledge creation course. *Education Sciences*, *11*(10), Article 580. https://doi.org/10.3390/educsci11100580

Samodien, M., Du Plessis, M., & Van Vuuren, C. J. (2024). Enhancing higher education performance: Transformational, transactional and agile leadership. *SA Journal of Human Resource Management*, *22*, Article a2768. https://doi.org/10.4102/sajhrm.v22i0.2768

Shaya, N., Abukhait, R., Madani, R., & Khattak, M. N. (2023). Organizational resilience of higher education institutions: An empirical study during COVID-19 pandemic. *Higher Education Policy*, *36*, 529–555. https://doi.org/10.1057/s41307-022-00272-2

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*, *53*(11), 2322–2347. https://doi.org/10.1108/EJM-02-2019-0189

Sjølie, E., Espenes, T. C., & Buø, R. (2022). Social interaction and agency in self-organizing student teams during their transition from face-to-face to online learning. *Computers & Education*, *189*, Article 104580. https://doi.org/10.1016/j.compedu.2022.104580

Srivastava, A. P., Yadav, M., Yadav, R., Singh, B., & Dewasiri, N. J. (2023). Exploring digital agility and digital transformation leadership: A mixed method study. *Journal of Global Information Management*, *31*(8), 1–23. https://doi.org/10.4018/JGIM.332861

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z

Thiyagarajan, S., Saldanha, P. R. M., Govindan, R., Leena, K. C., & Vasuki, P. P. (2023). Effectiveness of agile methodology on metacognitive ability, and clinical performance among nursing students—An interventional study. *Journal of Education and Health Promotion*, *12*, Article 283. https://doi.org/10.4103/jehp.jehp_1798_22

Thiyagarajan, S., Saldanha, P. R. M., Govindan, R., Leena, K. C., & Prathyusha, P. V. (2024). Opinion on agile methodology in education among the nursing students. *Journal of Education and Health Promotion*, *13*, Article 425. https://doi.org/10.4103/jehp.jehp_1955_23


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)

Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly*, *18*(4), 298–318. https://doi.org/10.1016/j.leaqua.2007.04.002

Varga-Atkins, T., Sharpe, R., Bennett, S., Alexander, S., & Littlejohn, A. (2021). The choices that connect uncertainty and sustainability: Student-centred agile decision-making approaches used by universities in Australia and the UK during the COVID-19 pandemic. *Journal of Interactive Media in Education*, *2021*(1), Article 16. https://doi.org/10.5334/jime.649

Wu, X., & Yusuf, A. (2026). Leadership agility and institutional resilience: The mediating roles of digital readiness and strategic adaptation in Chinese higher education digital transformation. *Power and Education* . Advance online publication. https://doi.org/10.1177/17577438261442768


Copyright (c)2026 Helina Apriyani, Aan Komariah, Asep Suryana, Nur Aedi
Corresponding author: Helina Apriyani (helina.apriyani@upi.edu)