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# How Academic Climate Shapes Mentorship and Enhances Lecturer Career Development

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## ABSTRACT

In this article we investigate how the academic climate and the research culture influence the career development of lecturers by embedding mentoring as a key developmental process in higher education. This paper contributes to the sparse literature on the interaction between institutional contexts and professional development by developing an integrated model of how relational (baselining from environments) and structural factors (features of academic activities that vary in degree to which they are individualized) intersect in the shaping lives of academics. The results demonstrate the direct role played by conducive academic atmospheres and robust research environments in facilitating career trajectories; they also work through mentorship, which may reinforce developmental support, professional growth and involvement in scholarly work. The study provides a new understanding of the role mentorship plays as a main conduit that institutional conditions are channeled through to affect individual academic advancement, providing further evidence regarding the strategic importance of merging support at an institutional level with personal development as practices. These findings enhance our understanding of academic human resource development and have implications for how universities can promote more productive, research-intensive and mentorship-based academic communities.

**Keywords:** Academic Culture; Research Environment; Mentorship; Career Advancement; Academia.

## INTRODUCTION

Higher education is a driving force behind the national agenda for long-term development, especially in the Golden Indonesia 2045 vision and future of globally competitive human resources (Mulyoto, 2019). A University are then challenged to run the Tri Dharma teaching, research and community service that is highly determined by the competency and performance of lecturers (Suwignyo, 2024). As human resources are known as professional educators and scientists (Undang - Undang No. 14 Tahun 2005), lecturer are considered a strategic national assets with academic quality that greatly affects the competence of graduates, research results, and national innovation capacity (Suwignyo, 2024). For that reason, career development on the promotion of academic functional route within those structures become the important investment to improve institutional excellence and quality of Tri Dharma implementation (Ilyas & Semiawan, 2012; Suherlan, 2017).

Despite its strategic importance, there is a persistent structural anomaly in the way that faculty careers are developed in Indonesia. This is frequently described as a career bottleneck. This issue is particularly evident in the transition towards the ranks of Associate Professor and Full Professor (Michalak & Ellixson, 2025; Solga et al., 2025). The distribution of faculty members is uneven, as evidenced by national data from Kemendiktisaintek

(2021–2023). This is evident in the substantial gap between Lecturer (115,702 individuals) and Associate Professor (33,352 individuals) in 2023, with more than 86% of faculty members concentrated in the lower ranks. While Indonesia is one of the most productive countries in Southeast Asia in terms of publication volume (447,794 documents), the average citation rate is low at only seven citations per document. This raises concerns about research quality and visibility, as well as the limited contribution to accelerating faculty promotion (Carter-Sowell et al., 2019; Dobele & Rundle-Theile, 2015; Van Miegroet et al., 2019).

The findings of the survey, which revealed that 83.75% of respondents viewed the management of the institute as adequate and 81.88% viewed the policy support as adequate, are at odds with the low number of respondents who reported a profitable response to the question, "Academic Environment and Organizational Culture". This is further supported by the fact that only 28.13% of respondents reported a profitable response. A lack of collegiality, coupled with an absence of scholarly communication and isolated research ecosystems, has been identified as a significant obstacle to academic productivity and promotion (Craig et al., 2025; Khalid et al., 2024; Ynalvez & Shrum, 2011). The findings reveal something that extends beyond the structural and policy levels: the cultural and environmental underpinnings that are crucial for supporting academic growth are not adequately reinforced (Chanda et al., 2025; Felix & Hennekam, 2025).

To address this issue, the current paper focuses on three contextual factors that are increasingly recognized as being crucial to academic success: Research Culture, Academic Climate, and Mentorship. Research culture encompasses the values and norms that influence scientific productivity through their impact on practices, behavior and structures (Brooker & Allum, 2024; Hurley, 1995). It is recognized that an excellent research environment is one of the most important contributors to publication quality and career progression. Academic climate refers to the relational and intellectual environment that fosters collegiality and scholarly engagement (Al-Kurdi et al., 2020; Romel et al., 2021) and has been found to prematurely affect research productivity and faculty motivation (Desselle, Andrews, et al., 2018; Owan et al., 2024). The idea of mentoring is to help senior and junior faculty work together to improve research productivity, make adjustments and help shape academic careers (Bell et al., 2024; Miller et al., 2024; Williams et al., 2023). New findings suggest that the effect of research culture and academic climate is influenced by mentorship. That is to say, mentors help convert institutional resources into personal professional skills (Çalıkoğlu et al., 2025; Chan et al., 2024).

New researchers are still struggling to get started, and the pre-survey results are not very encouraging. For example, the ratings for Research Culture, Academic Climate, and collegial mentorship support received were between 29–28%. So it is very important to look at these influences more closely. Based on interviews, institutional mentoring program were commonly perceived as 'not functioning as desired', which indicates a significant discrepancy between policy and practice. Empirical support for this problem comes from international research, with global studies demonstrating that academic promotion can be fast-tracked based on who you know (Abramo et al., 2021; Abramo, D'Angelo, & Reale, 2019). To ensure fair and sustainable academic human resources planning, it is vital to grasp how these contextual factors interact particularly how mentorship can serve as a unifying force within an otherwise lacking academic environment.

The purpose of the current study is to explore why Faculty Career Development occurs, by examining the state of Research Culture, Academic Climate, and Mentorship and how these contextual factors help develop faculty along an academic career trajectory. Special emphasis is placed on the Mediating effect of Mentorship, which is proposed to operate as an intermediary process transferring the influence of Research Culture and Academic Climate to observable career advancement. By synthesizing this array of factors into one analytic model, the article provides conceptual consistency about how institutional culture, scholarly settings, and social support networks together cultivate scholarly productivity and career attitudes. The results should improve theoretical conversations in HRM (Human Resource Management) literature and Higher Education scholarship as well as offer pragmatic advice for faculty who desire to fast-forward their academic careers, and inform university administrators seeking evidence-based strategies on how best to support research ecosystems, create positive academic climates and design structured mentorship programs that undergird sustained faculty development.

## THEORIES AND HYPOTHESES

### Supporting Theory

Lecturer career development: An integrated organizational behavior and human resource management perspective According to (Owan et al., 2024) and (Niso et al., 2022), there are constructs such as institutional culture, work climate, mentoring systems that cumulatively drive academic performance and promotion opportunities on the job. A research culture is the social conventions, customs of conduct or norms that determine how scholarship is created and appreciated; departments with strong research cultures with an operationally defined chain of co-operating within networks exhibit significantly higher rates of publication productivity and

subsequent career key progression (Abramo et al., 2021; C. J. Bland et al., 2005; Brooker & Allum, 2024). Academic climate encompasses lecturers' perceptions of communication, resources and administrative support; factors that are known to impact motivation, engagement and research outputs (Al-Kurdi et al., 2020; Desselle, Raja, et al., 2018). In these instances, mentoring function as career and psychological support that transforms institutional opportunities into individual competence and advancement ((Day & Allen, 2004; Miller et al., 2024).

**Research Culture and Lecturer Career Development**

Strong research culture is generally viewed as one of the cornerstones for lecturer development in their careers, given that it is interlinked with academics' promotion based on research productivity, publication quality and contribution to scientific advancement (Abramo et al., 2021; Brooker & Allum, 2024). Institutions with strong research norms (including integrity, working together and staying involved) produce lecturers with high scientific output and visibility ((C. J. Bland et al., 2005; Chung et al., 2017; Shin, 2011). Supporting mechanisms such as clear research focus, funding support, and normal academic interaction also have a positive influence on individuals' motivation and ability for meaningful research work (Åkerlind, 2008; Shin, 2011). This type of environment allows lecturers to build the expertise, networks and publication histories needed for career advancement, thus linking institutional culture with personal academic development.

**H1.** Research Culture will be positively associated with Lecturer Career Development.

**Academic Climate and Lecturer Career Development**

A supportive academic environment is considered one of the main factors that determine lecturer performance and long-term career development since institutional communication styles, supervision quality and resource availability significantly impact scholarly involvement. There is evidence that positive academic environments characterized by collegial, constructive supervision and efficiency in administration - may increase research motivation, collaboration and overall academic productivity (Al-Kurdi et al., 2020; Desselle, Raja, et al., 2018). Lecturers are more likely to involve in innovative research activities and maintain a higher level of academic motivation at work when their organizational climate is perceived as open and supporting (Huttunen et al., 2024; Romel et al., 2021; Salmela-Aro & Upadyaya, 2018). These climates also reduce psychological obstacles and enhance team work, and support is provided through available resources and institutional responsiveness to research efforts (Peterson & White, 1992; Shin, 2011). Therefore, chapter lecturers in collaborative academic climates would have higher research and clearer career advancement.

**H2.** Academic Climate will be positively associated with Lecturer Career Development.

**Mentorship and Career Advancement**

Mentoring is highly recognized as an essential mechanism for advancing lecturers' academic careers in the sense that it offers instrumental assistance, psychosocial support and developmental feedback that are indispensable for a lecturer's career in order to cope with the ambiguities of academic work. Empirical research indicates that mentors make strong contributions to protégés' career competencies via the provision of specific skill development, access to professional information and structured career support (Allen & Eby, 2008; Chao, 1997; Day & Allen, 2004). Mentorship also promotes emotional well-being and academic confidence, as they provide for affirmations, healthy dialogues and a secure relational place to share concerns (Allen et al., 2010; Keller, 2007). Role modelling provides additional support for professional identity formation, as mentors model ethical behavior, scholarly rigor and effective work habits that junior faculty can aspire to (Ragins & McFarlin, 1990; Rauvola et al., 2019; Rudolph et al., 2018; Seehusen et al., 2021). Recent evidence also points to mentorship as a key transformative element in increasing research productivity and readiness to publish - most notably in resource-limited environments (Miller et al., 2024; Owan et al., 2024; Pissardini et al., 2025; Williams et al., 2023). Taken together, these results demonstrate that mentorship is a critical institutional determinant of academic productivity and professional growth, and in doing so supports scholarly outcomes, builds the capacity to be successful in academia learning self-efficacy and enhances promotion readiness.

**H3.** Mentorship will be positively associated with Lecturer Career Development.

**Research Culture as an Antecedent of Mentorship**

A strong research environment is a critical precursor of effective mentorship; such an environment fosters collaboration, scholarly engagement and shared research ethos, which in itself facilitates mentoriship encounters. Research Intensive universities and those that have a high regard for research integrity, intellectual freedom and the collaborative nature of inquiry are likely to cultivate deeply embedded norms which promote senior academics taking on the responsibility to mentor junior colleagues through shared research activities, manuscript writing/updating and scientific problem solving (Åkerlind, 2008; Brooker & Allum, 2024). In these atmospheres, mentoring is not simply a formal requirement but an entrenched scholarly activity that has become part of the

normative culture as driven by institutional mandates for ongoing research output and the exchange of ideas among colleagues (C. J. Bland et al., 2005; Bozeman & Gaughan, 2011). Leadership−based support for research resources, funding and an institutional vision also increases the chances that senior researchers will value mentoring relationships, as ecosystems with strong resources and a bent toward innovation are conducive to rapid knowledge generation and inter-generational learning (Abramo et al., 2009; Shin, 2011, 2012). A strong research culture, therefore, not only contributes to the production of science and scholarship but also is a powerful driver for formal and informal mentorship, and is an important enabler that can impact upon quality of mentoring within higher education.

**H4.** There will be a positive relationship between Research Culture and Mentorship.

### Academic Climate and Mentorship

A supportive academic culture is generally considered to be an important influence on good mentoring, as it creates and maintains the inter-relational context needed for faculty members to share knowledge, participate in scholarly discourse and develop collegial trust. In supportive work environments that depend on good supervision, positive communication, and efficient administrative systems, institutional barriers to mentoring tend to be diminished and the relations develop more naturally (Deem, 2004; Peterson & White, 1992). By creating collegiality, collaboration and scholarly team-based engagement in academic units, they help underpin the social infrastructure relationships that mentor and mentee require to organize their research activities and negotiate their roles as academics (Al-Kurdi et al., 2020; Romel et al., 2021). Furthermore, climates with the availability of resources and supportive leadership foster psychological safety that makes more senior academics to invest their time into developmental and psychosocial mentoring as well as junior faculties to actively seek for guidance from them (Desselle, Raja, et al., 2018; Huttunen et al., 2024). Therefore, a constructive academic climate not only contributes to scholarly productivity but also facilitates the establishment of effective mentoring relationships as it offers both relational and structural conditions that are required to be in place for long-term academic support.

**H5.** Academic climate has been found to be negatively correlated with mentorship.

### Mentorship as a Mediator Between Research Culture and Career Development

Mentoring is a central vehicle for translating the values, norms and expectations of research culture into concrete career outcomes. In settings with institutionalized research agendas, mentors are the custodians of culture and work to orient junior staff members to scholarly norms, negotiate publication expectations, and cultivate academic expertise required for career advancement (Åkerlind, 2008; Kailu et al., 2025). Mentoring provides the means, through developmental, psychosocial and model role functions, for lecturer replicability of organizational research expectations as productive behavior develops the bridge from a culture of research to career success (Chen et al., 2025; Li et al., 2025; Rath et al., 2025).

**H6.** Mentorship will mediate the relationship between Research Culture and Lecturer Career Development.

### Mentorship as a Mediator Between Academic Climate and Career Development

A mentorship's potential to support lecturers' professional development effective works best under good academic environment for as long as those conditions are maintained. Workplaces in which there are good communication, collegiality and sufficient admin support and research infrastructure enhance mentors' ability to navigate junior academics through the institutional expectations and scholarly pressures (Al-Kurdi et al., 2020; Desselle, Raja, et al., 2018). In such climates, mentors guide protégés in obtaining resources, handling the academic load and developing good research practices with the result of turning organisational support as it is experienced into actual developmental outcomes (Seehusen et al., 2021; Williams et al., 2023). Mentorship, then, becomes a key conduit through which positive academic climates feed into career success over the long term.

**H7.** The effect of Academic Climate -Lecturer Career Development will be mediated by mentorship.

## METHODS

### Research Design

The study methodology incorporates a blend of quantitative, descriptive and causal survey research design. The quantitative approach is also used to test hypotheses and can perform statistical tests related to the relationship/strengthening among research culture, academic climate, mentorship and lecturer career development (Sugiyono, 2019; Sujarweni, 2021). The descriptive component is employed to accurately reflect the status of the research-related variables, while the causal component is used to examine the direction and size of occurrence among constructs. This includes the examination of how Research Culture and Academic Climate influence

Lecturer Career Development Murtono (2025), with Mentorship being located as an intervening link (Hindarsah et al., 2025; Miller et al., 2024; Rath et al., 2025).

The study is of a cross-sectional nature, which means that data are gathered at a single point in time from participants (Setiawati et al., 2024). This method is appropriate for non-experimental studies, where the perception and attitudes of research participants can be captured without manipulating the research site (Prayitno et al., 2025). The school teacher is the unit of analysis for the present study. The paper employs Path Analysis on SEM-PLS to investigate the structural relationships between variables. The SEM-PLS is a suitable choice in situations involving complex theoretical models, small to medium sample sizes and predictive relations between latent constructs (Sarstedt et al., 2022).

### Respondent Characteristics and Sampling Profile

For a more specific summary of the 184 lecturers involved in this study, refer to the demographic description in **Appendix Data A.1.** The gender breakdown of the sample includes a majority of female respondents (53.8%). Lower (early career) academic ranks have been found to be highly concentrated in terms of their distribution. Specifically, the ranks of Tenaga Pengajar (65.22%), Expert Assistant (14.67%) and Lector (15.76%) have been identified as being most prevalent. Only a few have the stature of either a Head Lecturer (3.26%) or a Professor (1.09%), which supports the observation that the sample is largely drawn from lecturers who are early in their academic careers. This profile is essential for understanding areas such as research culture, academic climate, mentorship and career development, which may act differently across career stages.

Institutional affiliation and geographical distribution also highlight a strong structural pattern in the sample. Most respondents are from private universities (75.54%), with public universities making up the remaining 24.46%, meaning that private higher education is most represented. Geographically, respondents are mainly from major academic city centres: DKI Jakarta (37.5%), West Java (15.22%), and East Java (12.5%). Lecturers from other provinces also contribute to geographic diversity, but they form a small proportion of the sample. However, the demographic profile set out in Appendix Data A.1 shows that early-career lecturers at private universities in high-density educational areas are a key factor that must be considered when interpreting the study's results.

### Data Collection

The survey was the main instrument for primary data collection and it was gathered from all the 184 lecturers that formed part of the sample. The instrument used in this study is a questionnaire based method which efficient for obtaining information from dispersed population and the ease with which perceptions, attitudes, experiences could be measured (Murtono & Prayitno, 2025; Syahrudin & Suryani, 2025). Our sample consisted of voluntary participants, such that the data reported in this study represented self-assessment responses to a set of scheduled training activities (Research Culture, Academic Climate, Mentorship and Career Development) for each respondent at their institution.

### Variable Classification and Measurement Scale

The operationalization of the built-form variable is used to underpin development of the questionnaire instrument. All constructs are operationalized using a 5-point Likert scale which is developed to measure the levels of agreement or disagreement of respondents against the indicators. The Likert scale has been known to enhance the accuracy of attitude asseessment and decrease response neutrality potentially increasing data quality (Anam, 2024; Arifah & Rizki Nugraha, 2024). The operational definitions, dimensions, indicators and measurement scales of the variables analyzed are shown in Appendix data A2.

## RESULT FINDING

### Measurement Model Evaluation (Outer Model)

As demonstrated in Table 1, all the measurement items have high levels of outer loading and demonstrate strong convergent validity. All indicators in the Academic Climate (AC) load between 0.834 and 0.876, which is higher than the suggested threshold of 0.70. This indicates that all items adequately represent their corresponding construct. Similarly, the loadings of the LCD indicators are also high, ranging from 0.892 to 0.925, suggesting a robust measurement model. Mentorship (MT) is also characterized by strong indicator performance, with loadings ranging from 0.855 to 0.890, suggesting a high degree of reliability and construct validity. In a similar way, all of the RC (Research Culture) indicators show a strong correlation between 0.856 and 0.899, which is a good sign for the strength of the measurement model. Overall, these findings suggest that the model has acceptable convergent validity and that the indicators are reliable and relevant for testing subsequent structural models.

**Table 1.** Outer Loadings and Convergent Validity Results

| Outer loadings | (AC) | (LCD) | (MT) | (RC) |
|---|---|---|---|---|
| AC1 | 0.872 | | | |
| AC2 | 0.849 | | | |
| AC3 | 0.834 | | | |
| AC4 | 0.865 | | | |
| AC5 | 0.859 | | | |
| AC6 | 0.876 | | | |
| AC7 | 0.874 | | | |
| LCD1 | | 0.892 | | |
| LCD2 | | 0.917 | | |
| LCD3 | | 0.925 | | |
| LCD4 | | 0.898 | | |
| LCD5 | | 0.919 | | |
| LCD6 | | 0.912 | | |
| MT1 | | | 0.877 | |
| MT2 | | | 0.890 | |
| MT3 | | | 0.856 | |
| MT4 | | | 0.864 | |
| MT5 | | | 0.855 | |
| MT6 | | | 0.862 | |
| RC1 | | | | 0.856 |
| RC10 | | | | 0.873 |
| RC2 | | | | 0.859 |
| RC3 | | | | 0.893 |
| RC4 | | | | 0.899 |
| RC5 | | | | 0.869 |
| RC6 | | | | 0.899 |
| RC7 | | | | 0.882 |
| RC8 | | | | 0.884 |
| RC9 | | | | 0.884 |

As shown in Table 2, by providing the indicators of construct reliability, it can be inferred from all latent variables that they all reach or exceed the thresholds for acceptable level of internal consistency. Specifically, ranges of Cronbach's Alpha values (0.934 to 0.968) and Composite Reliability (ρc) coefficients (0.948 to 0.972) are well above the minimum acceptable threshold scale value of 0.70, pointing towards high levels of measurement scales' reliability. The Average Variance Extracted (AVE) of all constructs is also satisfactory, with values between 0.742 and 0.829, which are greater than the cut-off value of 0.50, indicating that each construct accounts for a considerable amount of variance in its indicators. Taken together, these results indicate that the constructs Academic Climate (A), Lecturer Career Development (B), Mentorship (C) and Research Culture demonstrate strong reliability and convergent validity such that it is reliable to evaluate the measurement model in terms of structural model assessment.

**Table 2.** Construct Reliability (Cronbach's Alpha and Composite Reliability)

| Construct reliability and validity | Cronbach's alpha | (rho_a) | (rho_c) | (AVE) |
|---|---|---|---|---|
| Academic Climate (AC) | 0.942 | 0.944 | 0.953 | 0.742 |
| Lecturer Career Development (LCD) | 0.959 | 0.959 | 0.967 | 0.829 |
| Mentorship (MT) | 0.934 | 0.935 | 0.948 | 0.752 |
| Research Culture (RC) | 0.968 | 0.968 | 0.972 | 0.774 |

The discriminant validity test in Table 3 shows all the constructs in the model meet the Fornell–Larcker criterion. The were presented on the diagonal, and the square root of each construct's AVE listed after comments represent average variance extracted of that construct) is higher than most correlations between constructs (hair et al. 2016), indicating that each latent variable shares more variance with measures in its own scale than it does with measures from other scales. Academic Climate (AC) shows a high AVE value (0.861), higher than it correlations with Lecturer Career Development (LCD = 0.521), Mentorship MT = 0.556, and Research Culture RC = 0.055). Also, LCD indicates a diagonal value of 0.910 higher than those of its relationships with AC, MT and RC. Mentorship (MT) also shows good discriminant validity, by the square root of its AVE (0.867), being greater than the correlation with all other constructs. Research Culture (RC), 0.880 on the diagonal, also surpasses

its inter-construct correlations. The evidence from these tests support the empirical distinctness of each construct and its measurement of a separate conceptual domain, thus further confirming their discriminant validity.

**Table 3.** Discriminant Validity (Fornell–Larcker Criterion)

| FLc | (AC) | (LCD) | (MT) | (RC) |
|---|---|---|---|---|
| Academic Climate (AC) | 0.861 | | | |
| Lecturer Career Development (LCD) | 0.521 | 0.910 | | |
| Mentorship (MT) | 0.556 | 0.743 | 0.867 | |
| Research Culture (RC) | 0.055 | 0.546 | 0.638 | 0.880 |

The HTMT ratio results in Table 4 lend further support to the strong discriminant validity between all constructs. Each HTMT value is below the conservative 0.85 and liberal 0.90 thresholds, implying that there are no severely problematic overlapping constructs. More specifically, the HTMT values for the associations of AC with LCD (=0.545), MT (= 0.591) and RC (= 0.075) are significantly well below these cut-off levels, providing evidence of discriminant validity. Similarly, acceptable HTMT scores are also obtained for the relationships among Mentorship such as with MT–LCD (0.784) and MT–RC (0.671), well below than the recommended threshold. Discriminant validity is also supported by the HTMT ratio for Research Culture and Lecturer Career Development (0.565) indicating that these constructs are empirically distinct from one another. Taken together, the results in relation to HTMT provide further support for the measurement model by showing that all constructs are well measured and not overloaded with collinearity among latent variables.

**Table 4.** Discriminant Validity (HTMT Ratio)

| Construct | HTMT |
|---|---|
| Lecturer Career Development (LCD) <-> Academic Climate (AC) | 0.545 |
| Mentorship (MT) <-> Academic Climate (AC) | 0.591 |
| Mentorship (MT) <-> Lecturer Career Development (LCD) | 0.784 |
| Research Culture (RC) <-> Academic Climate (AC) | 0.075 |
| Research Culture (RC) <-> Lecturer Career Development (LCD) | 0.565 |
| Research Culture (RC) <-> Mentorship (MT) | 0.671 |

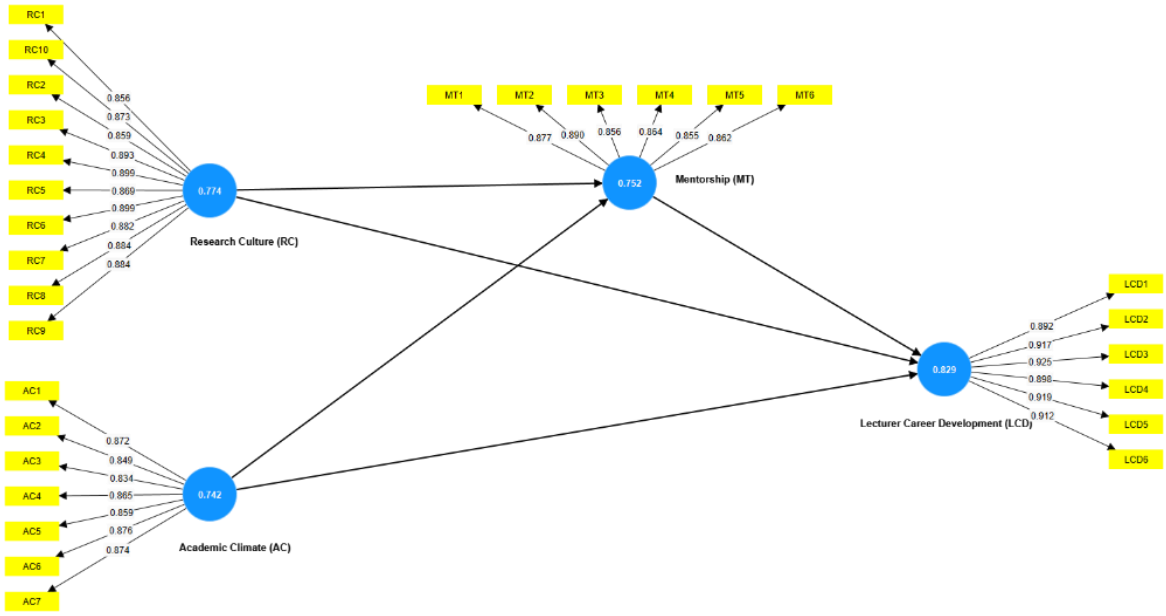



**Figure 1.** Measurement Model (Outer Model)

## Structural Model Evaluation (Inner Model)

The collinearity analysis (Table 5) reveal that each Variance Inflation Factor (VIF) is way below the generally recommended cut-off value of 5.00, and even comply with a more conservative zero tolerance threshold of 3.00 in most paths, thereby indicating no multicollinearity concerns among constructs in the structural model. The degrees of collinearity are especially small for theeffects of AC and MT (VIF = 1.003), indicating littleproblem with multicolliearity, thus suggesting that each factor makes a unique contribution toMT. While VIFs of the paths to LCD (i.e., for AC → LCD = 1.858; RC →LCD=2.165 and MT →LCD=3.126) tend to be higher, these are still

significantly short of leaving much cause for concern that problematic redundancy exists among these predictors. In general, the VIF value results indicate that there are evidence of stability in the structural model whereby none of the estimated path coefficients is inflated by multicollinearity among predictor constructs.

**Table 5.** Collinearity (VIF Values)

| Construct | VIF |
|---|---|
| Academic Climate (AC) -> Lecturer Career Development (LCD) | 1.858 |
| Academic Climate (AC) -> Mentorship (MT) | 1.003 |
| Mentorship (MT) -> Lecturer Career Development (LCD) | 3.126 |
| Research Culture (RC) -> Lecturer Career Development (LCD) | 2.165 |
| Research Culture (RC) -> Mentorship (MT) | 1.003 |

The evidence in Table 6 indicates that the structural model has a high degree of explanatory and predictive ability. The R2 value for LCD is 0.599, which means that Academic Climate, Research Culture, and Mentorship variables together explain 59.9% of the variance in LCD (moderate tolerance). Mentorship further has a high $R^2$ of 0.680, demonstrating that Academic Climate and Research Culture in combination explain positive correlation (68%) to it. The $Q^2$ redundancy as of the endogenous constructs are higher than zero (LCD = 0.491; MT = 0.506), indicating significant predictive relevance according to blindfolding procedure. The $Q^2$ values of communality of the constructs are higher than 0.60; which allows for accepting strong predictive relevance at indicator-level. Exogenous constructs such as AC and RC naturally do not possess any $R^2$ values, however by showing high $Q^2$ comm (0.652 and 0.717) support the reliability of their measures. Taken together, these results suggest that the structural model is both of high explanatory and predictive power (confirming interpretable linkages).

**Table 6.** Coefficient of Determination ($R^2$) and Predictive Relevance ($Q^2$)

| Construct | $R^2$ | $R^2$ Adjusted | $Q^2$ Redundancy | $Q^2$ Communality |
|---|---|---|---|---|
| Lecturer Career Development (LCD) | 0.599 | 0.593 | 0.491 | 0.752 |
| Mentorship (MT) | 0.68 | 0.677 | 0.506 | 0.647 |
| Academic Climate (AC) | – | – | 0 | 0.652 |
| Research Culture (RC) | – | – | 0 | 0.717 |

The results of the effect size analysis are shown in Table 7. These results show the importance of each structural path in the model. The importance is shown on a scale of different levels. AC has a small effect on LCD ($f^2 = 0.096$) and a large effect on MT ($f^2 = 0.852$), suggesting that AC is a significant factor in shaping mentorship dynamics within academic settings. LCD is affected by MT to a medium extent ($f^2 = 0.148$), illustrating the considerable impact it has on lecturers' professional development. Research Culture (RC): The RC's effect on LCD is small ($f^2 = 0.076$) for both MT and AC, but large for MT ($f^2 = 1.159$), making it the greatest predictor of mentorship quality and engagement. The evidence suggests that, while both AC and RC are strong forces for mentorship, MT is a useful way to turn some of this contextually focused strength into better career advancement.

**Table 7.** Effect Size ($f^2$) for Structural Relationships

| Path | $f^2$ | Interpretation |
|---|---|---|
| Academic Climate (AC) → Lecturer Career Development (LCD) | 0.096 | Small |
| Academic Climate (AC) → Mentorship (MT) | 0.852 | Large |
| Mentorship (MT) → Lecturer Career Development (LCD) | 0.148 | Medium |
| Research Culture (RC) → Lecturer Career Development (LCD) | 0.076 | Small |
| Research Culture (RC) → Mentorship (MT) | 1.159 | Large |

The findings of Table 8 reveal that all hypothesis paths in the structural model are statistically significant and positive. Academic Climate has a significant direct impact on Lecturer Career Development, the weight is large enough and there is great statistical support for it, indicating that the supportiveness of academic environment directly effects lecturers' professional development. The effect of Academic Climate upon Mentorship is also strong and very significant, suggesting that supportive academic environments improve the quality and amount of mentorship. This, in turn, demonstrates mentorship to have a strong positive effect on Lecturer Career Development and its centrality as the developmental vehicle that raises lecturer's career development. Research Culture (which continued to hold a significant relationship directly with Lecturer Career Development) also emerges as having highly positive effects on Mentorship, suggesting that institutions that engage in strong research norms and support are associated with both better mentoring relationships and career development outcomes.

These findings cumulatively emphasise the intertwined relationship between academic climate, a research culture and mentorship as driving forces to support lecturers in advancing their careers.

**Table 8.** Hypothesis Testing Results (Path Coefficients, t-values, p-values)

| Path | Original sample (β) | t-statistic | p-value | 95% CI |
|---|---|---|---|---|
| Academic Climate (AC) → Lecturer Career Development (LCD) | 0.267 | 3.95 | 0.000 | (0.132, 0.395) |
| Academic Climate (AC) → Mentorship (MT) | 0.523 | 12.197 | 0.000 | (0.436, 0.605) |
| Mentorship (MT) → Lecturer Career Development (LCD) | 0.431 | 4.785 | 0.000 | (0.255, 0.613) |
| Research Culture (RC) → Lecturer Career Development (LCD) | 0.256 | 3.412 | 0.001 | (0.110, 0.401) |
| Research Culture (RC) → Mentorship (MT) | 0.610 | 14.816 | 0.000 | (0.528, 0.687) |

The structural model extracted by PLS-SEM is presented in Figure 2, showing the directional relations between Research Culture (RC), Academic Climate (AC), Mentorship (MT) and Lecturer Career Development (LCD). RC and AC both have strong positive pathways to MT, as well as significant direct effects on LCD. The model's mediating role is supported by mentorship, which also has a significant positive impact on LCD. The figure presents the standardized path coefficients. It also presents the levels of significance. And it presents the explained variance ($R^2$). The $R^2$ for MT is 0.680. The $R^2$ for LCD is 0.599. These figures show that independent or joint RC-AC constructs explain much about mentoring outcomes. They also explain much about lecturers' career advancement. The model shows that a logical and well-thought-out set of causes exists, with an encouraging academic setting (in terms of the quality of advice they received from their mentors, as well as a strong research culture) having a positive effect on the quality of mentorship and on the development of careers for those who teach.

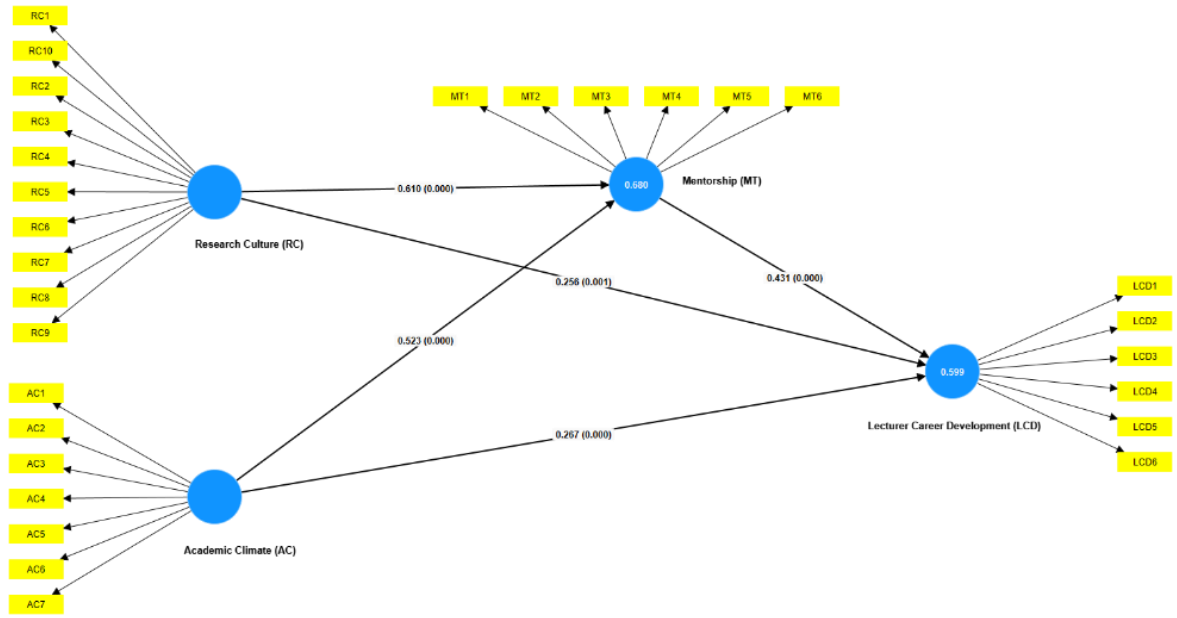



**Figure 2.** Structural Model (Inner Model)

## Mediation Analysis

As shown in Table 9, the mediation model was validated, and it was demonstrated that MT plays a significant mediating role between both AC and ³RC to LCD. The effect of AC on LCD via MT is positive and statistically significant ($\beta = 0.225$, $t = 4.445$, $p < 0.001$). The confidence interval does not include zero, which indicates robust mediation. Additionally, the indirect effect of RC on LCD via MT was significant ($\beta = 0.263$, $t = 4.415$, $p < 0.001$), as confirmed by the wide confidence interval. The promotion of lecturers' careers is associated with advancements in AC and RC, partially via mentoring, according to these findings. A supportive academic culture and an

established openness to research have a direct and indirect impact on career development. The former strengthens career development, while the latter strengthens it through positive mentoring practices.

**Table 9.** Mediation Effects of Mentorship on the Relationships Between Research Culture, Academic Climate, and Lecturer Career Development

| Indirect Path | Indirect effect (β) | t-statistic | p-value | 95% CI |
|---|---|---|---|---|
| Academic Climate (AC) → Mentorship (MT) → Lecturer Career Development (LCD) | 0.225 | 4.445 | 0.000 | (0.131, 0.329) |
| Research Culture (RC) → Mentorship (MT) → Lecturer Career Development (LCD) | 0.263 | 4.415 | 0.000 | (0.150, 0.384) |

**Importance–Performance Matrix Analysis (IPMA)**

As shown in Table 10, according to our IPMA findings, Research Culture (RC) is of the highest importance while CPPD has the lowest impacts on Lecturer Career Development (LCD) (sum effects = 0.519 and 50.842 respectively), thus this RC as a relatively strong driver and relatively high performance value refers to that it is well-implemented with the sample universities. Academic Climate (AC) also has a high impact (importance = 0.493) but performs slightly lower with the performance score of 47.727, which implies that modulating highly significant factors as greater communication flow, administrative services support and more innovative ways of conducting research may increase gains in LCD size enormously. Mentorship (MT) exhibits moderate but slightly lesser importance (0.431) with reasonable performance (49.404), indicating that building mentoring plug a hole career advancement points could further increase promotion speed. At the indicator level, RC4 (institutional support and research vision), RC8—RC9 (collaborative and adaptable research process) and MT1—MT3 (developmental and psychosocial mentoring) have high performance means, as well as high contributions to LCD. Taken together, they indicate that emphasis should be given to improving the academic climate and quality of mentorship while maintaining a strong research culture for optimal return on efforts invested in lecturer career development.

**Table 10.** IPMA Results for Lecturer Career Development

**Panel A.** Construct-Level IPMA

| Construct | Importance (Total Effect on LCD) | Performance |
|---|---|---|
| Academic Climate (AC) | 0.493 | 47.727 |
| Mentorship (MT) | 0.431 | 49.404 |
| Research Culture (RC) | 0.519 | 50.842 |

**Panel B.** Indicator-Level IPMA

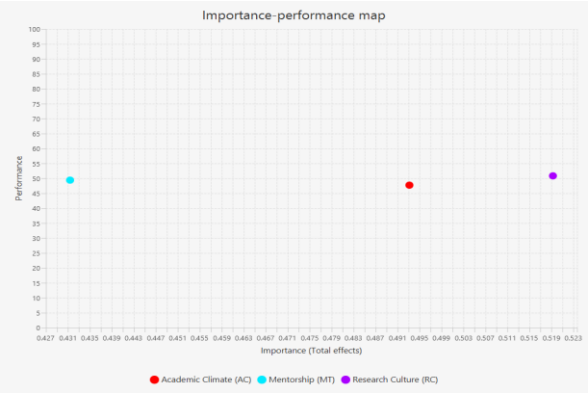
| Indicator | Importance (Total Effect on LCD) | Performance (MV Performance) |
|---|---|---|
| **Academic Climate (AC)** | | |
| AC1 | 0.083 | 47.962 |
| AC2 | 0.079 | 45.652 |
| AC3 | 0.07 | 48.641 |
| AC4 | 0.082 | 49.728 |
| AC5 | 0.081 | 46.739 |
| AC6 | 0.09 | 48.37 |
| AC7 | 0.086 | 47.011 |
| **Mentorship (MT)** | | |
| MT1 | 0.085 | 50.543 |
| MT2 | 0.084 | 48.641 |
| MT3 | 0.085 | 49.457 |
| MT4 | 0.082 | 49.049 |
| MT5 | 0.079 | 48.777 |
| MT6 | 0.082 | 49.864 |
| **Research Culture (RC)** | | |
| RC1 | 0.06 | 49.592 |
| RC10 | 0.058 | 51.087 |
| RC2 | 0.056 | 50.543 |
| RC3 | 0.06 | 50.543 |
| RC4 | 0.061 | 52.446 |

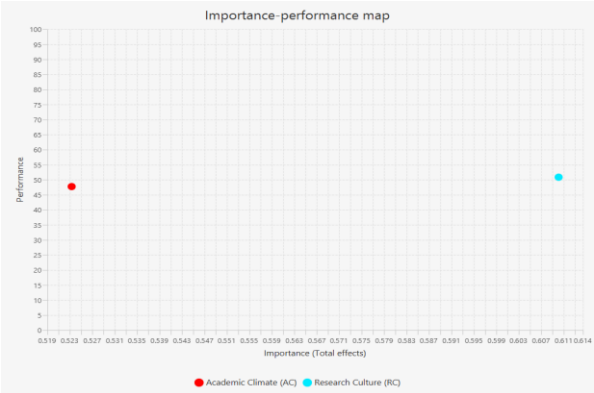
| | | |
|---|---|---|
| RC5 | 0.055 | 50.815 |
| RC6 | 0.06 | 49.728 |
| RC7 | 0.059 | 51.087 |
| RC8 | 0.059 | 51.902 |
| RC9 | 0.062 | 50.679 |

Figure 3 displays two IPMA views: one for LCD, and another for MT which captures the relative importance of key predictive constructs in relation to performance. In the upper-right quadrant, Research Culture (RC) is revealed as of greatest concern (highest relative importance with ≈0.519) and excellent performance (≈50.8), suggesting that enhancing RC delivers the highest marginal return for improving LCD. Further, Academic Climate (AC) is ranked an overall greater than medium performance indicator (> 47.7) that remains a substantial predictor of GV (0.493), meaning that improvements in communication flow, supervisory quality and administrative support are strategically valuable. Mentorship (MT) has a moderate level of importance (≈ 0.431) and a relatively high score (≈49.4), suggesting that while it is contributing in some way to career the development process, its maximization is important still.

Second to the MT map, RC is again found to exert a comparably powerful effect (≈0.610) and shows correlated power (> +.50) which makes it an "anchor" for mentorship quality, that is a supportive research culture enables effective mentorship practices. Academic Climate (AC) also has a positive impact on mentorship, (≈0.523), but with relatively less efficiency, suggesting areas where institutions can choose to improve their culture. Together, the plots emphasize the importance of Research Culture as a highest-performing driver overall and that Academic Climate is an area of most potential successful impact for both mentoring quality and lecturer career advancement.




IPMA. Lecturer Career Development (LCD)




IPMA. Mentorship (MT)

**Figure 3.** Importance–Performance Map Analysis (IPMA)

## DISCUSSION

The results illustrate that lecturer career development is highly influenced by the institutional research culture and academic climate in which academics work. Institutions with explicit research values, strong commitment to leadership and support from funding structures, and regular scholarly activities provide an academic climate in which academics can produce enduring research outputs consistent with earlier reports that ensuring robust research ecosystems foster scholarly productivity and visibility (Brooker & Allum; Åkerlind; Abramo et al., 2018). The resource effect might further be amplified in this direction, when an academic climate supports collegial communication and resources are available and supervisory interactions are constructive as has been previously reported supportive organisational climates will increase faculty members' engagement, motivation and scholarly performance (Al-Kurdi et al., 2020; Desselle et al., 2018; Salmela-Aro & Upadyaya, 2018). Such enablers are all the more significant under Indonesia's promotion system in which NL support is significant and career advancement is contingent on an accumulation of research-based outputs.

As previously discussed, the mediating effect of mentorship is equally significant; It acts as an intermediate developmental step through which the institutional culture and climate are translated into concrete career outcomes. This finding is in line with mentoring theory which posits that developmental and psychosocial support provided by mentors facilitates the abilities of junior academics to understand rules concerning research expectations, the publishing process and institutional norms (Allen & Eby, 2008; Ragins & McFarlin, 1990). Empirical studies of mentoring have indicated that the aforementioned influences contributed to increased research persistence and sense of academic identity as well as enhanced satisfaction and career confidence (See

Williams et al., 2023; Seehusen it al, 2021). If anything, it would appear that mentorship serves not to replace but to magnify contextual benefits including supporting evidence that mentoring accelerates the conversion of institutional support into personal scholarly return.

The study also points that a strong research culture is an essential antecedent of the quality of mentorship. Organizations which respect independence, cooperation, and innovation generally create conditions that facilitate senior academics' participation in coproduction of supervision, co authorship, and scientific communication (Bozeman & Gaughan, 2011; Jung et al., 2017). These environments support informal and formal networks of mentorship, which allows assistant professors to acquire the skills necessary to have successful research careers. Comparatively, in contexts where research culture is fragmented or only nascent, lecturers faced difficulties shifting teaching and service obligations into research outputs for promotion, mirroring general fears about academic stasis in systems without coherent standards of academic inquiry (Ynalvez & Shrum 2011; Suwignyo 2024).

The IPMA findings are practically useful for prioritizing institutional enhancements. Vi Research Culture (Table 5) is high in both importance and performance, indicating that participating institutions have been starting to meaningfully invest in the research environment. The difference is in the Academic Climate which highlights significant performance gaps, suggesting that ways of enhancing communication systems, administrative efficacy and collaborative efforts must be identified to sustain the overall academic environment (Deem, 2004; Peterson & White, 1992). Mentoring despite performing reasonably well, represents a significant area for improvement with the introduction for example of formalized mentoring program, more consistent role-modelling and greater clarity in developmental pathways. As lecturers depend on interpersonal guidance to negotiate academic pressures, investment in mentorship quality could have devolved career returns for the sector (Passmore et al., 2012; Miller et al., 2024).

From a theoretical standpoint, these results further justify the study of faculty careers from an integrative perspective encompassing both organizational behavior and human resource management literatures as well as that within higher education research. The academic career is revealed to be located within both cultural, relational and structural aspects of the academic workplace, in line with views that careers are configured through organizational context rather than as individual affairs (Armstrong & Taylor, 2020; Robbins & Judge, 2023). Future studies can consider enhancing this model with other meso-level variables such as distribution of workload, performance appraisal systems and digital scholarship infrastructure, as well as applying longitudinal perspective to examine how change in culture and climate may influence career trajectory.

## CONCLUSION

In this paper, we demonstrate the critical importance of institutional context such as research culture, academic climate and academic support for lecturer career development in Indonesian higher education. A supportive research culture characterised by robust scholarly norms, leadership support and collaboration structures underpins academic productivity, and an enabling academic climate facilitates involvement though resourcing, collegiality and constructive supervision. Mentoring is a key process that transfers these contextual strengths into career capital through development experiences, psychosocial support and socialisation into workroles. Collectively, these findings underscore the importance for universities to enhance their research ecosystems, develop healthy academic climates and establish formal mentoring programs that are necessary for sustainable and equitable faculty advancement.

## IMPLICATIONS

This research carries a few implications for the practice of higher education administration. There is a need for universities to invest in research infrastructure, sharing systems and collaborative portals which strengthen an institutional culture that promotes scholarly output. Second, positive academic climate—where communication is clear, administrative processes are manageable and administrators are collegial—may create an environment where lecturers get the opportunity to succeed. Third, organized mentorship is imperative: formal mentor –mentee matching, mentor training and learning outcomes could improve research productivity and assist early-career academics towards promotion expectations. Together, this suite of interventions can serve to 13 address patented blockages in academic career progression.

## LIMITATIONS

There are also some limitations to the present study despite providing in-depth and robust findings. However, casual inferences cannot be made due to the cross-sectional nature of design and observed associations may

change over time. Sample size is sizable but still heavily restricted to a few categories of institutional and geographic contexts, which may present a barrier to wider generalisability over the national higher education landscape. Self-reports could also lead to response bias, especially when assessing sensitive areas of research climate and mentorship. These could be limitations in interpreting the results.

## FUTURE RESEARCH DIRECTIONS

Future research could build onto this work via longitudinal designs to assess the dynamism of research culture, academic climate and mentoring practices over career continuum. Further extension of the model to encompass meso-level factors like workload policies, digital scholarship support, or performance appraisal systems is crucial for a better understanding of the institutional level factors that influence career development. Comparative research across nations or institutional types would foster the embedding of findings in larger higher education systems. Lastly, investigations of digital or peer-mentoring interventions may also provide novel strategies to enhance career development paths in low-resource settings.

### Author Contributions

Trinando developed the study, constructed the conceptual framework, supervised data collection and performed statistical analysis.

Ratna Komala Putri guided the methodological purification and validation of instruments, contributed to theoretical unification and critically reviewed the article.

The results were independently interpreted by both authors, and the manuscript was recast by the two authors with regard to intellectual content, approved for final submission, and each author agrees to be accountable for all aspects of the work.

### Findings Summary

This investigation demonstrates that career progression for lecturing staff is greatly determinate of institutional research culture and academic climate, for which mentoring serves as a central process that mediates these environmental factors into personal success. Good research culture supports collaborative norms, knowledge translation and scholarly productivity; a positive academic climate supports enhanced communication, supervisory support and collegial engagement. Mentoring extends these institutional advantages by providing direction to lecturers as they negotiate academic demands and develop their research skills, building their capacity to progress. Taken together, the results highlight the need to support and design integrated academic ecosystems that develop academic scaffolding, scholarly preparedness, and guided mentoring pathways.

### Ethical Considerations / Ethical Approval

This study adhered to standard ethical protocols for human related studies. All the participants were voluntary and had given consent to participate before data collection, and they were assured of anonymity before completing the questionnaires. The Research Ethics Commission of Telkom University Indonesia approved this, under the institutional review criteria at that time.

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### Competing interests / Conflicts of interest

There are no conflicts of interest regarding the authorship or publication of this paper. The authors have declared that no competing interests to have influenced the execution or conclusions of this study.

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## Appendix data A1. Comprehensive Demographic Profile of Respondents

| Category | Sub-category | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 85 | 46.2 |
| | Female | 99 | 53.8 |
| Academic Rank / Functional Position | Instructor | 120 | 65.22 |
| | Assistant Expert | 27 | 14.67 |
| | Senior Lecturer | 29 | 15.76 |
| | Associate Professor | 6 | 3.26 |
| | Professor | 2 | 1.09 |
| Type of Higher Education Institution | Private University (PTS) | 139 | 75.54 |
| | Public University (PTN) | 45 | 24.46 |
| Geographical Distribution (Province) | DKI Jakarta | 69 | 37.5 |
| | West Java | 28 | 15.22 |
| | East Java | 23 | 12.5 |
| | Central Java | 11 | 5.98 |
| | DI Yogyakarta (DIY) | 9 | 4.89 |
| | North Sumatra | 7 | 3.8 |
| | South Sumatra | 5 | 2.72 |
| | Banten | 5 | 2.72 |
| | Kalimantan (various provinces) | 2 | 1.09 |
| | Sulawesi (various provinces) | 2 | 1.09 |
| | Nusa Tenggara (NTT/NTB) | 2 | 1.09 |
| | Papua | 1 | 0.54 |
| | Bali | 1 | 0.54 |
| | Others (each 1 respondent) | 19 | 10.33 |
| Total | — | 184 | 100 |

## Appendix data A2. Operationalization of Variables

| Variable | Code | Dimension | Indicator | Scale | Source |
|---|---|---|---|---|---|
| Research Culture (RC) | RC1 | Environment | Adequacy of research facilities, laboratories, and digital libraries | Likert 1–5 | (Evans et al., 2010) |
| | RC2 | Environment | Social environment supports scientific discussion & collaboration | Likert 1–5 | (C. J. Bland et al., 2005) |
| | RC3 | Values | Institutional emphasis on research integrity & originality | Likert 1–5 | (Sharp et al., 2016) |
| | RC4 | Values | Research regarded as institutional priority | Likert 1–5 | |
| | RC5 | Leadership Support | Clear research vision from leadership | Likert 1–5 | (Cheol Shin et al., 2013) |
| | RC6 | Leadership Support | Policy and funding support for research | Likert 1–5 | (Abramo, 2018; Abramo et al., 2009; Abramo, D'Angelo, & Carloni, 2019) |

 

| | | | | | |
|---|---|---|---|---|---|
| | RC7 | Habits | Routine research seminars, discussions, colloquia | Likert 1–5 | (Åkerlind, 2008) |
| | RC8 | Habits | Regular publication of research output | Likert 1–5 | (J. M. Bland & Altman, 2007) |
| | RC9 | Research Networks | Ease of interdisciplinary collaboration | Likert 1–5 | (Bozeman & Gaughan, 2011; Jung et al., 2017) |
| | RC10 | Adaptability | Institution adapts to research trends and technology | Likert 1–5 | (Cheol Shin et al., 2013; Shin, 2012) |
| Academic Climate (AC) | AC1 | Research Innovation | Encouragement for innovative, novel research | Likert 1–5 | (Scott & Bruce, 1994) |
| | AC2 | Communication Flow | Smooth vertical and horizontal academic communication | Likert 1–5 | (Peterson & White, 1992) |
| | AC3 | Supervisory Support | Constructive academic supervision & guidance | Likert 1–5 | (Chiang et al., 2020) |
| | AC4 | Administrative Support | Efficiency of research administrative processes | Likert 1–5 | (Deem, 2004) |
| | AC5 | Team Spirit | Collegiality, mutual support, positive teamwork | Likert 1–5 | (Huttunen et al., 2024; Salmela-Aro & Upadyaya, 2018) |
| | AC6 | Resource Availability | Sufficient research tools, facilities, and funding | Likert 1–5 | (Shin, 2011, 2012) |
| | AC7 | Collaboration | Frequency & quality of research collaborations | Likert 1–5 | (Dietz & Bozeman, 2005; Yu & Bozeman, 2025) |
| Mentorship (MT) | MT1 | Career Development Support | Mentor assists skill development and research capabilities | Likert 1–5 | (Allen & Eby, 2008; Day & Allen, 2004) |
| | MT2 | Career Development Support | Mentor provides career advancement information | Likert 1–5 | (Chao, 1997; Higgins & Kram, 2001; Passmore et al., 2012) |
| | MT3 | Psychosocial Support | Mentor provides emotional support and encouragement | Likert 1–5 | (Keller, 2007; Ragins & McFarlin, 1990) |
| | MT4 | Psychosocial Support | Mentor is trustworthy and open to discussion | Likert 1–5 | (Allen et al., 2010) |
| | MT5 | Role Modeling | Mentor models ethical and professional conduct | Likert 1–5 | (Rauvola et al., 2019; Rudolph et al., 2018; Zacher & Rudolph, 2021) |
| | MT6 | Role Modeling | Mentor demonstrates effective and productive work habits | Likert 1–5 | (Seehusen et al., 2021) |
| Lecturer Career Development (LCD) | LCD1 | Teaching | Innovation in teaching materials and pedagogy | Likert 1–5 | (Trigwell & Shale, 2004) |
| | LCD2 | Teaching | Academic advising and student supervision | Likert 1–5 | (Feldman et al., 2009) |
| | LCD3 | Research | Publication productivity in reputable journals | Likert 1–5 | (Abramo et al., 2009, 2021; Abramo, D'Angelo, & Reale, 2019) |
| | LCD4 | Research | Grant acquisition and participation in academic forums | Likert 1–5 | (Shin, 2012) |
| | LCD5 | Community Service | Academic consulting & community empowerment activities | Likert 1–5 | (Mtawa et al., 2016) |

| | | | | | |
|---|---|---|---|---|---|
| | LCD6 | Supporting Activities | Engagement in journal management, committees, professional orgs | Likert 1–5 | (Quick & Feldman, 2011) |

 