

Neuroticism and Perceived Research Productivity : Mediating and Moderating Roles of Learning Orientation and Job Autonomy

Jondry Adrin Hetharie*, Robbi Djefri Lakatua, dan Mozes D. Istia

Faculty of Economics and Business Universitas Kristen Indonesia Maluku, Ambon, 97115, Indonesia

ABSTRACT

Purpose – This study aims to examine the effect of neuroticism on faculty Perceived Research Productivity by considering the mediating role of learning orientation and the moderating effect of job autonomy.

Design/methodology/approach – This study used a quantitative approach with a cross-sectional survey design. Data were collected from 100 faculty members at Universitas Kristen Indonesia Maluku through online questionnaires. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Finding/Results – The results show that neuroticism has a positive effect on faculty Perceived Research Productivity, both directly and indirectly through learning orientation. Learning orientation mediates the relationship between neuroticism and Perceived Research Productivity. Job autonomy strengthens the effect of neuroticism on Perceived Research Productivity but weakens the relationship between neuroticism and learning orientation. The moderated mediation model explains 71.6% of the variance in Perceived Research Productivity.

Originality/Value – This study contributes to the literature by applying Trait Activation Theory in the context of academic Perceived Research Productivity. It highlights the importance of psychological traits, learning orientation, and job autonomy in improving faculty research performance. The findings also offer practical implications for higher education institutions in designing autonomy-based and learning-oriented human resource development strategies.

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*Corresponding Author at:

Jondry Adrin Hetharie, Faculty of Economics and Business, Universitas Kristen Indonesia Maluku, Ambon, 97115, Indonesia E-mail address: jondry_ub@rocketmail.com (Jondry Adrin Hetharie)

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1. Introduction

The increasing demand for Perceived Research Productivity at universities worldwide has highlighted the importance of personality traits in shaping faculty performance. Neuroticism, a personality trait characterized by emotional instability, anxiety, and mood fluctuations, has traditionally been viewed as a barrier to academic success (Apostolov & Geldenhuys, 2022). However, recent studies suggest that neuroticism does not necessarily impede performance. On the contrary, in specific contexts, this trait may serve as a driving force, particularly in environments that provide autonomy and opportunities for self-development (Batilmurik et al., 2025). This is especially relevant in the context of higher education, where faculty members are expected not only to contribute to teaching but also to advance scientific knowledge through research. In Indonesia, where higher education institutions face increasing pressure to meet national research output targets, understanding the factors that influence Perceived Research Productivity is crucial. Therefore, the role of personality traits such as neuroticism in fostering academic productivity warrants further investigation (Batilmurik et al., 2025).

Recent literature has explored the complex relationship between neuroticism and job performance, often revealing contradictory findings. On one hand, individuals with high levels of neuroticism tend to be more vulnerable to stress, which can impair job performance (Sosnowska et al., 2020). On the other hand, some studies suggest that neuroticism can have a positive influence on productivity in specific work environments, particularly when individuals face challenges that require effective coping mechanisms (Duan & Deng, 2025; Wihler et al., 2017). In the academic context, neurotic individuals may channel their anxiety into research activities, thereby enhancing their output. However, the presence of supportive working conditions, such as job autonomy, can be a crucial moderating factor in this relationship. Given this complexity, it is essential to explore how neuroticism, through its interaction with other psychological constructs such as learning orientation and job autonomy, affects Perceived Research Productivity.

In addition, empirical research has demonstrated that personality traits influence job performance through affective mechanisms. (Zhang et al., 2017) found that neuroticism indirectly affects job performance through emotional exhaustion and job satisfaction, indicating that emotional processes play a critical mediating role. This evidence suggests that neuroticism does not operate in isolation but interacts with psychological states that determine performance outcomes. In academic contexts, unmanaged emotional strain may weaken research engagement, whereas adaptive coping strategies may transform emotional tension into productive effort.

This study aims to investigate the impact of neuroticism on Perceived Research Productivity among university faculty, particularly in Indonesia. The main challenge lies in understanding the mechanisms through which neuroticism may either facilitate or hinder research outcomes. Although previous studies have reported that neuroticism can impair performance due to emotional instability and stress (Ahmad Munjirin et al., 2023; Shchebetenko et al., 2023), this research seeks to offer a more nuanced perspective by considering the potential of neuroticism

as a driver of productivity when individuals are motivated to cope with anxiety through their work. Furthermore, the study investigates the role of learning orientation as a mediator and job autonomy as a moderator in the relationship between neuroticism and productivity. The proposed hypothesis posits that individuals with high levels of neuroticism may exhibit higher Perceived Research Productivity, provided they possess a strong learning orientation and experience sufficient job autonomy. To investigate this, a moderated mediation model will be employed, incorporating the variables of neuroticism, learning orientation, Perceived Research Productivity, and job autonomy. This model is grounded in Trait Activation Theory (TAT), which posits that personality traits are more likely to be activated under specific situational conditions, such as high levels of job autonomy (Alam et al., 2024). By testing this model, the study aims to provide valuable insights into the conditions under which neuroticism may contribute positively to academic productivity, as well as how learning orientation and job autonomy function as mediators or moderators in this relationship.

A substantial body of research has examined the relationship between neuroticism and job performance across various contexts. For instance, neuroticism has been shown to negatively impact task performance due to increased susceptibility to stress and emotional instability (McCrae, 1990; Sosnowska et al., 2020). However, more recent studies highlight the potential of neuroticism to contribute positively to performance in specific work environments. (Tett et al., 2021) argue that neurotic individuals may exhibit higher levels of motivation and determination when facing challenges, particularly when the work environment allows them to manage tasks independently. This aligns with Trait Activation Theory, which posits that personality traits are activated in specific situations, thereby influencing behavior (Alam, 2025). In this context, the presence of job autonomy can activate neuroticism and transform it into a motivational driver to enhance research output.

Learning orientation also plays a critical role in mediating the relationship between neuroticism and performance. Research by (Amabile & Pratt, 2016) suggests that individuals with a strong learning orientation tend to view challenges as opportunities for growth rather than as threats. This mindset is particularly relevant in academic settings, where continuous learning is a key component of Perceived Research Productivity. For neurotic individuals, possessing a strong learning orientation may help mitigate the adverse effects of emotional instability by encouraging them to embrace learning opportunities and focus on skill development, thereby enhancing Perceived Research Productivity. Recent empirical evidence further supports the mediating role of learning orientation in the relationship between personality traits and performance outcomes. (Hasanah et al., 2022) demonstrated that dimensions of the Big Five personality model significantly predict learning orientation, which subsequently enhances job performance. Their findings confirm that personality traits influence work outcomes indirectly through motivational orientations rather than through direct linear effects. This empirical evidence strengthens the theoretical justification for positioning learning orientation as a mediating construct in the relationship between neuroticism and Perceived Research Productivity in academic contexts.

Moreover, the role of job autonomy as a moderator has been widely discussed in the literature. (Morgeson et al., 2005). Emphasized the importance of job autonomy in shaping performance, as it allows individuals to make decisions and control their work processes. This autonomy not only enhances job satisfaction but also promotes productivity, particularly among individuals with high levels of neuroticism. By granting neurotic individuals the freedom to structure their work environment and manage their time, job autonomy can buffer the adverse effects of anxiety and emotional instability, thereby fostering increased research output. Therefore, the interaction among neuroticism, learning orientation, and job autonomy presents a promising avenue for further research.

The relationship between personality traits, particularly neuroticism, and job performance has been extensively studied, yet the findings remain inconsistent. Early research generally emphasized the negative impact of neuroticism on job performance, arguing that neurotic individuals tend to be prone to anxiety and stress, which can hinder their effectiveness (Feng et al., 2024; Lee Ping et al., 2024). However, more recent studies have begun to acknowledge the potential of neuroticism as a source of motivation, especially when individuals are confronted with tasks that require self-regulation and coping strategies (Duan & Deng, 2025). For instance, neurotic individuals may leverage their heightened emotional sensitivity as a driving force to achieve better performance in challenging situations (Ahmad Munjirin et al., 2023). These findings underscore the importance of context in determining whether neuroticism has a positive or negative impact on performance.

Although various studies have provided valuable insights, a gap remains in understanding the specific mechanisms that mediate or moderate the relationship between neuroticism and performance. While learning orientation has been shown to influence performance outcomes (Dweck, 1986), its role as a mediator in the relationship between neuroticism and productivity has not been sufficiently explored in academic contexts. Furthermore, although job autonomy is recognized as an important job characteristic for enhancing performance (Morgeson et al., 2005), its role as a moderator in the relationship between neuroticism and performance still requires further empirical validation. This study addresses these gaps by examining the dual role of learning orientation as a mediator and job autonomy as a moderator, thereby offering a more comprehensive understanding of how neuroticism influences Perceived Research Productivity.

Importantly, the positive consequences of neuroticism should not be interpreted as universal. Trait Activation Theory argues that the behavioral expression of personality traits depends on situational cues and work characteristics, suggesting that neuroticism may produce either adaptive or maladaptive outcomes depending on the organizational context (Tett et al., 2021). Consistent with this perspective, although several recent studies have reported that neuroticism may enhance individual performance under specific circumstances, a substantial body of evidence has linked this personality trait to burnout, emotional exhaustion, avoidance behavior, and psychological distress. These contrasting findings indicate that neuroticism is unlikely to exert a uniformly positive or negative influence on Perceived Research

Productivity. Rather, its effects appear to depend on contextual and motivational mechanisms that shape how individuals respond to research-related demands. Accordingly, this study conceptualizes job autonomy and learning orientation as critical boundary conditions that determine whether neurotic tendencies are translated into productive research behavior or, conversely, into emotional exhaustion and reduced Perceived Research Productivity. Faculty members who experience adequate autonomy and maintain a strong learning orientation are more likely to channel research-related anxiety into persistence, self-regulated learning, and sustained scholarly effort. In contrast, limited autonomy and weak learning orientation may amplify the maladaptive consequences of neuroticism, increasing the likelihood of withdrawal and diminished research performance. Accordingly, the present study extends the neuroticism–performance literature by explaining the organizational and motivational conditions under which neurotic tendencies become adaptive rather than maladaptive within the context of higher education institutions.

The proposed hypothesis posits that neuroticism, under conditions of high learning orientation and job autonomy, can have a positive impact on Perceived Research Productivity. This hypothesis is grounded in Trait Activation Theory (TAT), which posits that personality traits are activated in specific contexts, leading to distinct behaviors (Tett et al., 2021). By testing this hypothesis, the study aims to offer practical recommendations for enhancing Perceived Research Productivity among faculty members, particularly in institutions where job autonomy and learning orientation are critical factors. The scope of this study is limited to university lecturers at Universitas Kristen Indonesia Maluku (UKIM).

2. Literature Review & Hypothesis Development

The primary theoretical foundation of this study is Trait Activation Theory (TAT), developed by Tett and Burnett to explain how specific personality traits can be activated by situational cues in the workplace. TAT emphasizes that personality traits, such as neuroticism, do not uniformly impact individual performance unless environmental conditions trigger the activation of these traits into actual behavior (A. Nguyen et al., 2021). In this context, job autonomy can serve as a relevant situational cue, encouraging the positive expression of neuroticism, which has traditionally been viewed as detrimental to performance. The relevance of this theory in higher education is reinforced by findings that basic psychological needs, such as autonomy and competence, play a significant role in mediating the relationship between personality traits and faculty members' intrinsic motivation to engage in research (Stupnisky et al., 2023)

2.1 Neuroticism

Neuroticism is one of the five dimensions of personality in the Big Five Personality Traits model, describing an individual's tendency to experience negative emotions such as anxiety, anger, or depression (McCrae et al., 2003). Individuals with high levels of neuroticism tend to be more easily disturbed by stress and uncertainty; however, under certain conditions, neuroticism may also drive achievement as a form of coping with the fear of failure

(Rahmadhani & Cucuani, 2024). In academic contexts, neuroticism presents a complex relationship with performance, which is mediated or moderated by factors such as motivation, learning orientation, or the work environment.

As a personality trait, neuroticism is marked by a tendency to experience negative emotions like anxiety, uncertainty, and vulnerability to stress. In the workplace, neuroticism is often associated with lower performance due to high sensitivity to pressure and conflict (Firat, 2022). Nevertheless, more context-sensitive studies highlight that neuroticism does not universally have adverse effects. In demanding and competitive environments such as higher education, individuals with high neuroticism may be driven to work harder to reduce uncertainty and meet social expectations. In certain situations, neurotic tendencies can become a source of motivation if channeled through adaptive strategies or influenced by supportive environmental factors (Bailey, 1995). Therefore, in the context of Indonesian lecturers who face administrative pressures and high publication targets, neuroticism may foster productive impulses in the form of enhanced research performance.

2.2 Job Autonomy

Job autonomy refers to the extent to which an individual has the freedom, discretion, and responsibility in carrying out work-related tasks (Morgeson & Humphrey, 2008). In Job Characteristics Theory, autonomy is considered a core dimension that fosters intrinsic motivation and job satisfaction. Research indicates that job autonomy not only enhances performance but also functions as a moderator that strengthens the positive influence of personality traits on work outcomes, including Perceived Research Productivity (Batilmurik et al., 2025; Cho et al., 2021). Furthermore, job autonomy can amplify the relationship between neuroticism and Perceived Research Productivity. When neurotic individuals are granted the freedom to design and execute research projects according to their preferences, internal pressures stemming from anxiety and perfectionism can be transformed into organized and productive research behavior.

Studies in academic contexts have demonstrated that high autonomy can enhance the impact of personal characteristics on research performance by providing individuals with the space to express their work styles and preferences in overcoming psychological barriers (Stern, 2018). In bureaucratic university environments, such as those in Indonesia, job autonomy can serve as a vital resource that enables neurotic faculty members to navigate structural pressures constructively.

Empirical findings further indicate that autonomy-related job crafting behaviors strengthen the relationship between individual psychological characteristics and wellbeing outcomes (Peña et al., 2020). Autonomy enables employees to restructure tasks in ways that align with their internal dispositions. In academic environments, such flexibility allows lecturers to regulate research pacing, select methodological approaches, and adjust workloads, thereby buffering the emotional instability associated with neuroticism. This reinforces the argument that job autonomy functions as a situational activator in line with Trait Activation Theory.

2.3 Learning Orientation

Learning orientation refers to an individual's tendency to pursue skill mastery and personal competence development as the primary goal of their activities (Dweck, 1986; Karuniawati Hasanah et al., 2022; Rahmadhani & Cucuani, 2024). Goal Orientation Theory explains that individuals with a learning orientation focus more on the process and self-development rather than on immediate outcomes. In the context of research, learning orientation is critical, as it motivates faculty members to actively seek new knowledge, solve complex problems, and engage in continuous self-improvement (Vandewalle, 1997). Studies have shown that learning orientation is positively related to creativity and Perceived Research Productivity (Shchebetenko et al., 2023).

Learning orientation also serves as a key predictor of Perceived Research Productivity among faculty members. Individuals with a strong learning orientation tend to take initiative in seeking self-development opportunities through research activities and demonstrate persistence when facing academic challenges. Empirical studies suggest that intrinsic motivation, rooted in a learning orientation, correlates positively with publication frequency, the quality of academic writing, and international research collaboration (A. Nguyen et al., 2021). In the Indonesian higher education environment, where institutional support for research remains uneven, personal motivation, in the form of a learning orientation, becomes a crucial asset for maintaining productivity amid systemic limitations.

2.4 Perceived Research Productivity

Perceived Research Productivity refers to the quantity and quality of scholarly outputs produced by academics, including journal articles, books, conference proceedings, and other scientific works (Abramo et al., 2017; Kwiek, 2018). According to prior evidence, Perceived Research Productivity is influenced by a combination of individual factors (such as motivation and competence), organizational elements (including autonomy, resources, and leadership), and institutional culture (Abramo et al., 2017; N. D. Nguyen et al., 2021; Stupnisky et al., 2019). Moreover, recent studies have shown that psychological characteristics—such as personality, learning orientation/motivation, and perceived institutional support—are key determinants of enhancing Perceived Research Productivity (Djupe et al., 2020; N. D. Nguyen et al., 2021; Stupnisky et al., 2019). Several previous studies have examined the relationship between neuroticism and academic productivity, although findings have been inconsistent. Some research has found that neuroticism is negatively correlated with research performance due to individuals' tendencies toward anxiety and emotional instability (Firat, 2022). However, other studies suggest that individuals with high neuroticism also tend to be highly sensitive to social expectations and professional pressures, which, under supportive job autonomy, can motivate increased productivity through adaptive coping mechanisms (Bailey, 1995). Within this framework, learning orientation emerges as a potential mediator linking psychological conditions and academic outcomes. Research indicates that a strong learning orientation can mediate the adverse effects of neuroticism on productivity by channeling emotional energy into a drive for achievement and self-improvement (Feng et al., 2024).

Although numerous studies have explored the relationships among personality, motivation, and productivity, several gaps remain underexplored. First, there is a lack of research that explicitly tests an integrative model involving neuroticism, learning orientation, and job autonomy within a single mediation-moderation framework. Second, the majority of existing studies have been conducted in Western contexts or within STEM fields, rendering them less representative of the sociocultural contexts and academic workloads faced by faculty in

developing countries, such as Indonesia (Stern, 2018). Third, research on learning orientation as a mediator and job autonomy as a moderator has often been treated separately, without being embedded within a unified theoretical framework. This creates an opportunity to develop a more holistic and contextualized model that reflects the actual dynamics observed in the field.

This article strategically positions itself to address these gaps by simultaneously examining the influence of neuroticism on faculty Perceived Research Productivity, as well as the roles of learning orientation as a mediator and job autonomy as a moderator, within the framework of Trait Activation Theory (TAT). Previous research has shown that personality traits, particularly neuroticism, significantly shape variations in faculty publication performance and scientific impact (Djupe et al., 2020). TAT provides a theoretical foundation by emphasizing how situational cues in the workplace activate trait expression, with job autonomy serving as a critical moderator that conditions the relationship between traits and performance (Muldoon et al., 2017; Tett et al., 2021). Furthermore, learning orientation plays a mediating role in academic performance, as demonstrated in studies highlighting its function in linking individual motivation to achievement outcomes (Rivers, 2021). Focusing on faculty members at Universitas Kristen Indonesia Maluku, this study offers an empirical contribution based on primary data relevant to the Indonesian context, aligning with findings that heavy teaching and administrative workloads often reduce research time and thus suppress Perceived Research Productivity (Escobar et al., 2021). The study also contributes theoretically by extending the application of TAT to the domain of academic resource management. It enriches international literature by highlighting the unique dynamics of higher education in Indonesia, which remains underrepresented in global scholarship. From a methodological standpoint, many recent studies have employed advanced analytical techniques rather than simple correlational designs. For example (Prasojo et al. (2025) used a cross-sectional survey design combined with Partial Least Squares Structural Equation Modeling (PLS-SEM) to investigate the influence of research climate, collaboration, and competence on research performance among Indonesian faculty. PLS-SEM is particularly well-suited for testing complex theoretical models, including direct, mediating, and moderating effects, simultaneously, even with smaller sample sizes or non-normal data distributions (Sarstedt et al., 2021) ; (J. Hair & Alamer, 2022). Furthermore, most previous research has focused on students or early-career researchers. In contrast, fewer studies explicitly examine faculty, despite their unique structural complexities and performance pressures (Stupnisky et al., 2023)

2.5 Hypothesis Development

Based on the theoretical and empirical review above, this study develops six main hypotheses:

- a. Neuroticism has a positive and significant effect on perceived Perceived Research Productivity.
- b. Neuroticism has a positive effect on learning orientation.
- c. Learning orientation has a positive effect on perceived Perceived Research Productivity.
- d. Job autonomy moderates the relationship between neuroticism and learning orientation.
- e. Job autonomy moderates the relationship between neuroticism and perceived Perceived Research Productivity.
- f. Learning orientation mediates the relationship between neuroticism and perceived Perceived Research Productivity.

The development of these hypotheses is grounded in Trait Activation Theory (Tett et al., 2021), which posits that personality traits such as neuroticism are activated by relevant situational

cues, particularly in complex and autonomous work environments. Empirical evidence (Batilmurik et al., 2025). Supports the idea that job autonomy can moderate the effect of neuroticism on creativity and performance, highlighting the importance of autonomy as a condition that activates personality-driven outcomes. Moreover, as discussed by (K and Ranjit, 2022) and (Alikaj et al., 2021), learning orientation not only enhances intrinsic motivation but also plays a mediating role in translating psychological traits into productive behaviors. Additionally, studies on faculty performance confirm that Perceived Research Productivity is significantly influenced by learning-driven motivation, autonomy, and individual disposition under structural academic pressures (Stupnisky et al., 2023);(Prasojo et al., 2025)

3. Methodology

This study employs a quantitative approach. The sample consists of participants from the Universitas Kristen Indonesia Maluku (UKIM), with a total of 100 faculty members involved in the study. The sampling technique used is census sampling, in which the entire population of faculty members at the university was targeted to ensure that the sample represents the entire academic body. Faculty members were invited to participate through an online survey, and data were collected using a customized online questionnaire distributed electronically. To ensure a high response rate and maintain data integrity, the survey was conducted by best practices in survey distribution, as outlined by (Dillman et al., 2014) The survey also included an informed consent section to ensure adherence to ethical standards, ensuring that participants fully understood the purpose of the study and their rights regarding data confidentiality.

The design of this study employs a cross-sectional survey approach, in which data were collected at a single point in time. The online questionnaire included five-point Likert scale items for each variable: neuroticism, learning orientation, Perceived Research Productivity, and job autonomy. This scale format was chosen due to its proven effectiveness in capturing variation in participant responses (Mehrad et al., 2015). Participants were asked to respond to items related to their personality traits, learning orientation, perceptions of job autonomy, and self-reported Perceived Research Productivity.

For data analysis, Structural Equation Modeling (SEM) was employed, utilizing SmartPLS software, to assess the relationships among constructs, including mediation and moderation effects (Sarstedt et al., 2021). This approach allows for the testing of the proposed moderated mediation model and the analysis of interactions between neuroticism and job autonomy on learning orientation and Perceived Research Productivity.

The primary parameters in this study include the independent variable (neuroticism), the mediator (learning orientation), the moderator (job autonomy), and the dependent variable (perceived Perceived Research Productivity). Neuroticism was measured using the Big Five Inventory, which includes items that assess emotional instability and tendencies toward anxiety and stress (John & Srivastava, 1999). Learning orientation was measured using the work-domain goal orientation scale developed by (Vandewalle, 1997). Perceived Perceived Research Productivity was measured using self-reported indicators adapted from (Williams & Anderson, 1991) and contextualized to academic research activities. Because objective publication and grant data were not uniformly available, the construct captures respondents' perceived level of Perceived Research Productivity. This approach may be subject to social desirability bias, which is acknowledged as a study limitation.

This study employs Partial Least Squares (PLS) analysis, a multivariate Structural Equation Modeling (SEM) technique, to simultaneously estimate the effects among variables, with an emphasis on prediction or exploratory research. This method was selected because it enables the evaluation of both the measurement model and the structural model within a single integrated analysis. The validity and reliability of the model were assessed to ensure that the constructs were accurately measured (Fornell & Larcker, 1981). Subsequently, the structural model was evaluated to test the hypothesized relationships among neuroticism, learning orientation, Perceived Research Productivity, and job autonomy. Mediation and moderation effects were analyzed using the bootstrapping technique as outlined (Hayes, 2013), which provides robust estimates of indirect and interaction effects. Moderation was estimated using the Product Indicator approach in SmartPLS. Significance testing employed bootstrapping with 5,000 resamples and bias-corrected 95% confidence intervals. Inner VIF values were examined to assess potential collinearity among predictor constructs. The analysis results were then interpreted to determine the significance of the relationships and to assess the overall model fit (J. F. Hair et al., 2019). All variables were measured as first-order reflective-reflective constructs.

4. Result and Discussion

To gain a general overview of the respondents' characteristics in this study, a descriptive analysis was conducted on demographic data, including age, highest educational attainment, years of employment, and academic rank. This information is essential for understanding the context and background of the participants. It provides an interpretive foundation for analyzing the research findings, particularly in examining the relationships among the variables being studied. The distribution of respondents based on each of these characteristics is presented in Table 1 as follows:

Table 1. Characteristics of Respondents

Age category	Frequency	Percentage (%)
< 30 years	0	0
30-39 years	18	18
40-49 years	49	49
50-59 years	25	25
≥60 years	8	8
Highest Educational Attainment	Frequency	Percentage (%)
Master's Degree	69	69
Doctoral Degree	31	31
Years of Work Experience	Frequency	Percentage (%)
> 5 years	91	91
3-4 years	6	6
< 1 years	2	2
1-2 years	1	1
Academic Rank	Frequency	Percentage (%)
Associate Lecturer	56	56
Senior Lecturer	28	28
Assistant Lecturer	13	13

Professor

3

3

Based on the demographic characteristics of the respondents, the age distribution shows that the majority of faculty members are in the 40–49 age range (49%), followed by those aged 50–59 (25%) and 30–39 (18%). In contrast, the ≥ 60 age group comprises 8% of the total respondents, and there were no participants under the age of 30. In terms of highest educational attainment, most respondents hold a Master's degree (69%). In comparison, the remaining 31% hold a Doctoral degree, indicating that all respondents possess an adequate academic background for conducting research activities. Regarding work experience, the respondents are predominantly faculty members with over five years of experience (91%), with a small proportion having 3–4 years (6%), less than one year (2%), and 1–2 years (1%) of experience, reflecting a high level of professional maturity within the sample. In terms of academic rank, the majority of respondents are Associate Lecturers (56%), followed by Senior Lecturers (28%), Assistant Lecturers (13%), and Professors (3%), collectively representing a diverse range of academic ranks and potential contributions to Perceived Research Productivity within the higher education institution.

4.1 Measurement Model Evaluation

Table 2. Measurement Model Evaluation

Variable	Item/ Dimension	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Neuroticism	NR1	0.884	0.973	0.977	0.843
	NR2	0.890			
	NR3	0.933			
	NR4	0.951			
	NR5	0.925			
	NR6	0.943			
	NR7	0.934			
	NR8	0.881			
Job Autonomy	OK1	0.902	0.956	0.963	0.765
	OK2	0.924			
	OK3	0.858			
	OK4	0.841			
	OK5	0.876			
	OK6	0.876			
	OK7	0.872			
	OK8	0.846			
Learning Orientation	OB1	0.830	0.960	0.966	0.783
	OB2	0.904			
	OB3	0.880			
	OB4	0.886			
	OB5	0.833			
	OB6	0.915			
	OB7	0.922			
	OB8	0.903			
Productivity	PR1	0.898	0.961	0.967	0.785

Variable	Item/ Dimension	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
	PR2	0.887			
	PR3	0.881			
	PR4	0.860			
	PR5	0.908			
	PR6	0.915			
	PR7	0.892			
	PR8	0.846			

The neuroticism variable was measured using eight valid itemDils with factor loadings ranging from 0.881 to 0.951. All items were deemed acceptable for measuring the neuroticism personality construct. The item with the highest loading was NR4 (LF = 0.951), which reflects feelings of anxiety and emotional pressure when facing research challenges. The neuroticism dimension is represented by respondents' tendencies to experience emotional instability, anxiety regarding research outcomes, concerns about academic performance, and sensitivity to research-related stress. This suggests that neuroticism, in the context of faculty research, is reflected in affective responses to academic workload and productivity expectations.

The learning orientation variable was measured using eight indicators with factor loadings ranging from 0.830 to 0.922. The highest loading item was OB7 (LF = 0.922), indicating a commitment to continuously developing research capacity independently. The learning orientation dimension is reflected in the motivation to face research challenges as learning opportunities, the courage to embrace failure as part of the process, and a commitment to enhancing knowledge and research quality. These findings suggest that a faculty learning orientation reflects a growth mindset in the academic context, thereby strengthening the relationship between personality and productivity.

The job autonomy variable was measured using eight indicators with factor loadings ranging from 0.841 to 0.924. The highest loading indicator was OK2 (LF = 0.924), reflecting the freedom to make decisions regarding research methods. Autonomy is manifested in the freedom to design research agendas, determine work methods, and independently regulate work rhythms without rigid intervention. These findings suggest that job autonomy is a crucial aspect of academic research, capable of enhancing the influence of personality traits on learning behaviors.

Faculty Perceived Research Productivity was also measured with eight valid indicators, with factor loadings ranging from 0.846 to 0.915. The indicator with the highest contribution was PR6 (LF = 0.915), which reflects the ability to complete research and produce scholarly publications consistently. Perceived Research Productivity is indicated by successful project management, the ability to generate academically recognized research outputs, and active involvement in continuous research activities. These findings support the argument that

Perceived Research Productivity is an outcome of professional behavior influenced by personality traits and learning motivation.

The reliability levels of the measurement models for all four variables were deemed acceptable, as indicated by Cronbach's Alpha and Composite Reliability values, all of which exceeded 0.95. Additionally, the Average Variance Extracted (AVE) values for each construct were above 0.75, indicating that the measured latent constructs explain more than 75% of the variance in the indicators. Thus, the measurement model in this study demonstrates high-quality instrumentation in terms of both convergent validity and internal consistency and is suitable for testing causal relationships in the proposed structural model.

All constructs demonstrated satisfactory internal consistency, with Cronbach's alpha and composite reliability values exceeding recommended thresholds. However, coefficients above 0.95 may also indicate potential item redundancy. Because the indicators were adapted from previously validated instruments and represent multiple conceptual aspects of each construct, all indicators were retained for the present analysis while acknowledging this issue as a consideration for future scale refinement

Figure 1. Validity Testing Based on Outer Loadings

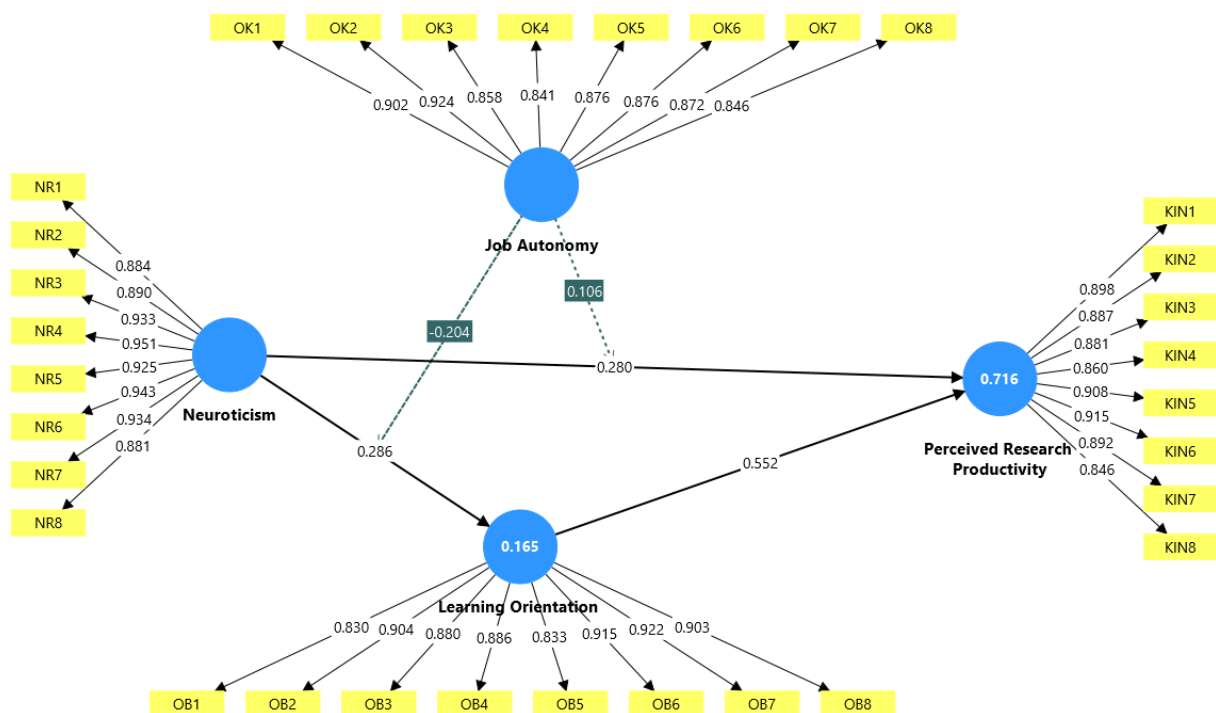


Table 3. Discriminant Validity Testing: Fornell & Larcker

Variabel	Neuroticism	Learning Orientation	Job Autonomy	Productivity
Neuroticism	(0.918)			
Learning Orientation	0.214	(0.885)		

Job Autonomy	0.130	0.279	(0.875)	
Productivity	0.495	0.686	0.526	(0.886)

Table 4. Discriminant Validity Testing: HTMT

Variable	Neuroticism	Learning Orientation	Job Autonomy	Productivity
Learning Orientation	0.217			
Job Autonomy	0.129	0.285		
Productivity	0.507	0.711	0.543	
Job Autonomy × Neuroticism	0.311	0.255	0.443	0.082

The results of discriminant validity testing, using the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT), indicate that all constructs in the model, namely, neuroticism, learning orientation, job autonomy, and Perceived Research Productivity, meet the requirements for discriminant validity. According to the Fornell-Larcker criterion, the $\sqrt{\text{AVE}}$ value for each construct (e.g., 0.918 for neuroticism and 0.886 for productivity) is higher than its correlation with any other construct, indicating that each construct measures a distinct and non-overlapping dimension. This result is further supported by HTMT values between constructs, all of which fall below the conservative threshold of 0.85, such as 0.711 between learning orientation and productivity and 0.507 between neuroticism and productivity, including very low values for interaction moderation constructs (e.g., 0.082 between moderation and productivity), which demonstrate clear conceptual distinctions among constructs. Therefore, it can be concluded that the research model exhibits strong discriminant validity and is suitable for subsequent testing of structural relationships.

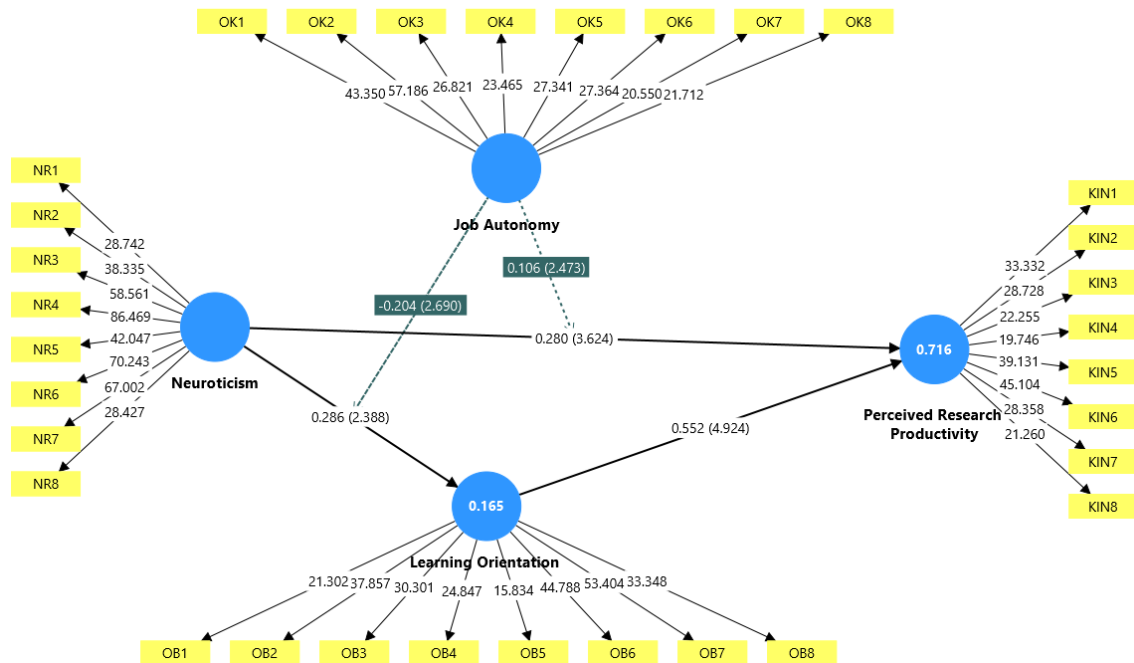
4.2 Structural Model Evaluation

The structural model evaluation relates to hypothesis testing regarding the influence of variables. This evaluation includes examining collinearity among variables using the Inner VIF (Variance Inflation Factor), which should be below 5; testing the significance of path coefficients; and assessing the 95% confidence intervals of the path coefficients. Additionally, the impact of each variable at the structural level is evaluated using the f-squared (f^2) effect size, where $f^2 = 0.02$ indicates a small effect, $f^2 = 0.15$ a medium effect, and $f^2 = 0.35$ a significant effect (Sarstedt et al., 2021). All inner VIF values were below the conservative threshold of 5.0, indicating that collinearity among predictor constructs was not a serious concern. Bootstrapped 95% confidence intervals for all significant paths did not include zero, supporting the statistical robustness of the reported relationships.

Table 4. Path Coefficients and Significance of Effects

Hypothesis	Path Coefficient	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	f Square	R Square	Q Square
Neuroticism → Learning Orientation	0.286	0.121	2.357	0.019	0.080	0.165	0.126
Neuroticism → Productivity	0.280	0.077	3.651	0.000	0.209		
Learning Orientation → Productivity						0.716	0.554
Productivity → Job Autonomy	0.552	0.106	5.225	0.000	0.894		
Neuroticism × Learning Orientation → Job Autonomy	-0.204	0.077	2.644	0.008			
Neuroticism × Learning Orientation → Productivity	0.106	0.043	2.456	0.014			

Figure 2. Diagram of Path Coefficients, Loading Factors, and P Values



The results of the Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis indicate that the proposed structural model explains the relationships among the study variables in a statistically meaningful manner. The first hypothesis (H1) demonstrates that neuroticism is positively associated with perceived research productivity ($\beta = 0.280$, $t = 3.651$, $p < 0.001$, $f^2 = 0.209$). This finding indicates that, within the institutional context examined in this study, faculty members with higher levels of neuroticism tend to report higher levels of perceived research productivity. However, this result should not be interpreted as evidence that neuroticism is inherently beneficial. Rather, it suggests that neurotic tendencies may become adaptive under supportive contextual conditions, enabling faculty members to redirect performance-related anxiety into persistence, careful planning, and sustained research effort. This interpretation is consistent with Trait Activation Theory and the Job Demands–Resources (JD-R) framework, which propose that the behavioral consequences of personality traits depend on the availability of facilitating work resources and contextual support.

The second hypothesis (H2) reveals that neuroticism has a positive and significant effect on learning orientation ($\beta = 0.286$, $t = 2.357$, $p = 0.019$, $f^2 = 0.080$). This finding suggests that faculty members with higher levels of neuroticism are more likely to develop stronger learning-oriented behaviors as an adaptive strategy for managing research-related demands and uncertainties. From the perspective of Trait Activation Theory, neurotic tendencies may stimulate greater self-regulation and continuous learning efforts when the work environment provides opportunities for constructive adaptation. Consequently, learning orientation appears to function as an important psychological mechanism through which neurotic faculty members cope with research-related pressures and enhance their perceived research productivity.

Meanwhile, the third hypothesis (H3) demonstrates that learning orientation has a positive and significant effect on Perceived Research Productivity, with a path coefficient of 0.552, a t-statistic of 5.225 ($p < 0.001$), and a large effect size of 0.894. These findings indicate that learning orientation is a key predictor of faculty Perceived Research Productivity, suggesting that the drive to continually learn and develop one's capacity significantly contributes to the quality and quantity of research output.

Next, The fourth hypothesis (H4) indicates that job autonomy negatively moderates the relationship between neuroticism and learning orientation ($\beta = -0.204$, $t = 2.644$, $p = 0.008$). This finding suggests that higher levels of job autonomy weaken the positive influence of neuroticism on learning orientation. From the perspective of Trait Activation Theory, the expression of personality traits depends on situational characteristics of the work environment (Tett et al., 2021). Faculty members with greater job autonomy have increased discretion and control over how they organize and perform their research activities. Consequently, highly neurotic individuals may rely less on learning-oriented behaviors as a coping mechanism because autonomy itself provides greater opportunities to manage research demands and reduce uncertainty. Thus, greater job autonomy appears to partially substitute for the motivational role of learning orientation in translating neurotic tendencies into work-related behavior.

Finally, the fifth hypothesis (H5) demonstrates that job autonomy positively moderates the relationship between neuroticism and perceived Perceived Research Productivity ($\beta = 0.106$, $t = 2.456$, $p = 0.014$). This finding suggests that greater job autonomy strengthens the positive association between neuroticism and perceived Perceived Research Productivity. Consistent with Trait Activation Theory, work environments characterized by higher autonomy provide situational cues that enable individuals to express personality traits in more adaptive ways (Tett et al., 2021). Faculty members with greater discretion over how they organize and execute their research activities are better able to transform performance-related anxiety into persistence, proactive problem solving, and sustained scholarly effort. Consequently, neurotic tendencies that might otherwise contribute to stress or emotional strain can be redirected toward productive research behaviors when sufficient autonomy is available. When considered together with the previous finding, the results indicate that job autonomy performs two complementary functions. On the one hand, it reduces the dependence of highly neurotic faculty members on learning orientation as a coping strategy. On the other hand, it provides the flexibility and control necessary for them to translate research-related anxiety directly into productive academic performance. These findings offer a coherent explanation for the seemingly opposite moderation effects observed in this study and reinforce the argument that job autonomy represents a critical boundary condition shaping the adaptive expression of neuroticism in academic settings.

Overall, the structural model shows an R^2 value of 0.716 for the Productivity construct, indicating that the combination of neuroticism, learning orientation, and the interaction effect of job autonomy can explain 71.6% of the variance in faculty Perceived Research Productivity .

A Q^2 value of 0.554 reflects a high and empirically relevant predictive capacity of the model. Thus, these findings support the proposed moderated mediation model and contribute to the literature on personality, learning motivation, and workplace dynamics in academic settings.

4.3 Boundary Conditions of Adaptive Neuroticism

The present findings should not be interpreted as evidence that neuroticism is inherently beneficial. Rather, the results suggest that neurotic tendencies may become adaptive under specific organizational conditions, particularly when faculty members experience sufficient job autonomy and maintain a strong learning orientation. Within this context, research-related anxiety appears to be more effectively channeled into persistence, self-regulated learning, and sustained scholarly effort, thereby contributing to higher perceived Perceived Research Productivity. Conversely, in environments characterized by limited autonomy, inadequate organizational support, or excessive workload, the same neurotic tendencies may be more likely to contribute to emotional exhaustion, avoidance behavior, and lower Perceived Research Productivity. These findings support the central premise of Trait Activation Theory, which posits that the behavioral expression of personality traits depends on situational cues, and are consistent with the broader personality–performance literature indicating that the consequences of neuroticism vary according to contextual and motivational conditions (Tett et al., 2021).

Table 5. Mediation Testing

Variable	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Neuroticism → Learning Orientation → Productivity	0.158	0.168	0.079	1.998	0.046

The sixth hypothesis (H6) indicates that learning orientation significantly mediates the relationship between neuroticism and faculty Perceived Research Productivity, with an indirect path coefficient of 0.158, a t-statistic of 1.998, and a p-value of 0.046. The p-value of 0.05 or less indicates that the indirect effect of neuroticism on productivity through learning orientation is statistically significant. This finding suggests that faculty members with high levels of neuroticism tend to enhance their Perceived Research Productivity not directly, but through an increase in learning orientation as an adaptive psychological mechanism.

In other words, learning orientation serves as a critical pathway that bridges the impact of personality traits on scholarly output, supporting the conceptual framework that personality characteristics traditionally viewed as negative, such as neuroticism, can have a positive influence on work performance when channeled through motivational patterns that support learning and self-development.

These findings align with previous research demonstrating that personality traits influence performance through affective and motivational mechanisms rather than through direct effects (Zhang et al., 2017). The present study extends this evidence by confirming that, in

academic settings, learning orientation serves as an adaptive pathway that channels neurotic tendencies into sustained Perceived Research Productivity.

4.4 Model Fit Evaluation

In the Structural Equation Modeling (SEM) approach, model fit evaluation aims to assess whether the theoretically formulated relationships among latent variables align with the covariance structure of the collected data. In the context of Partial Least Squares SEM (PLS-SEM), this evaluation also includes predictive accuracy and explanatory power (predictive relevance and explanatory power).

Table 6. SRMR

Estimated model	
SRMR	0.069

Table 7. PLS Predict

Item	Model PLS		Model LM	
	RMSE	MAE	RMSE	MAE
OB1	1.150	0.974	1.140	0.919
OB2	1.064	0.843	1.013	0.787
OB3	1.044	0.822	1.098	0.826
OB4	1.101	0.927	1.162	1.929
OB5	1.114	0.946	1.174	0.909
OB6	1.053	0.835	1.030	0.802
OB7	1.109	0.857	1.119	0.874
OB8	1.081	0.839	1.091	0.857
OK1	1.015	0.897	1.042	0.899
OK2	1.067	0.926	1.076	0.933
OK3	0.927	0.725	0.913	0.751
OK4	1.095	0.945	1.168	0.981
OK5	0.883	0.735	0.878	0.737
OK6	0.817	0.666	0.838	0.681
OK7	0.975	0.818	1.020	0.883
OK8	1.073	0.947	1.108	0.961
KIN1	0.744	0.523	0.676	0.526
KIN2	0.748	0.573	0.773	0.588
KIN3	0.886	0.709	0.943	0.794
KIN4	0.887	0.710	0.954	0.698
KIN5	0.744	0.581	0.699	0.851
KIN6	0.740	0.578	0.693	0.645
KIN7	0.721	0.554	0.672	0.525
KIN8	0.844	0.703	0.840	0.664

The SRMR value of 0.069 indicates an acceptable level of model approximation according to commonly recommended thresholds for PLS-SEM. Nevertheless, consistent with recent methodological guidance, SRMR should be interpreted cautiously because PLS-SEM is primarily prediction-oriented rather than covariance-based, and SRMR does not serve the same confirmatory function as model fit indices in covariance-based SEM (Sarstedt et al., 2022).

Furthermore, the PLS Predict assessment suggests moderate predictive power. Although the PLS model produced prediction errors that were lower than those of the linear benchmark model for several indicators, this pattern was not observed consistently across all indicators. Therefore, the model demonstrates acceptable predictive relevance, while its out-of-sample predictive performance should be interpreted as moderate rather than uniformly strong.

Meanwhile, the PLS Predict analysis demonstrated the model's predictive ability for indicators of endogenous variables, which in this study include items under the constructs of Learning Orientation (LO), Job Autonomy (JA), and Perceived Research Productivity. In PLS Predict, predictive validity is considered adequate when the model's error metrics (RMSE and MAE) are smaller than or at least comparable to those of a linear benchmark model (LM). For the LO indicators, most of the eight items had RMSE and MAE values in the PLS model that were comparable to or only slightly higher than the LM model, with no practically significant differences. For instance, in items LO2 and LO4, the PLS model had slightly higher RMSE values, but within acceptable limits. In some items, such as LO4 and LO5, the PLS model's MAE was slightly larger. However, the RMSE was lower than that of the LM model, indicating that PLS still demonstrated competitive predictive accuracy.

For the JA (Job Autonomy) indicators, most items exhibited RMSE and MAE values in the PLS model that were close to or better than those of the LM model, particularly in JA4 and JA6, where the PLS model showed lower error values. This reflects strong local predictive validity, especially in estimating perceptions of autonomy within academic work contexts.

Regarding the Productivity construct, the PLS model generally demonstrated adequate predictive performance, with some items such as PROD1 and PROD2 showing higher RMSE values than the LM model, but with competitive MAE values. Conversely, for items PROD5, PROD6, and PROD7, the PLS model yielded lower error values compared to the benchmark model, indicating that it maintains stable predictive strength for the research performance dimension.

Overall, based on the combination of an SRMR value below 0.08 and the model's competitive predictive capability compared to the linear model, it can be concluded that the research model demonstrates good model fit and acceptable predictive validity. Therefore, it is appropriate to draw theoretical conclusions and derive practical implications in the context of faculty Perceived Research Productivity.

5. Conclusion and Suggestion

Based on the findings of this study, neuroticism was found to be positively associated with faculty members' perceived Perceived Research Productivity, both directly and indirectly through learning orientation, which serves as an important mediating mechanism. The findings further indicate that job autonomy plays a complex moderating role by strengthening the positive association between neuroticism and perceived Perceived Research Productivity while weakening the relationship between neuroticism and learning orientation. These results suggest that, within the institutional context of Universitas Kristen Indonesia Maluku, neurotic

tendencies may become adaptive when supported by adequate job autonomy and a strong learning orientation, enabling faculty members to channel research-related anxiety into productive academic activities. Accordingly, higher education institutions should focus on developing supportive work environments by providing structured job autonomy, strengthening learning orientation through continuous professional development, and offering appropriate mentoring and organizational support, rather than encouraging neurotic tendencies themselves. Nevertheless, because this study employed a cross-sectional design, relied on self-reported measures of perceived Perceived Research Productivity, and was conducted within a single university, the findings should be interpreted as associational rather than causal and should not be generalized broadly to faculty members across other higher education institutions in Indonesia.

6. Limitations and Future Research

This study has several limitations that should be acknowledged. First, the cross-sectional design limits the ability to draw causal inferences regarding the relationships among the study variables. Second, the findings are based on a sample drawn from a single higher education institution, which may limit their generalizability to other institutional contexts. Third, perceived Perceived Research Productivity was measured using self-reported data rather than objective performance indicators, making the results potentially susceptible to social desirability bias. Therefore, future research should employ longitudinal and multi-institutional research designs to enhance causal inference and external validity. In addition, future studies are encouraged to incorporate objective measures of Perceived Research Productivity, such as publications, citations, research grants, conference papers, and institutional performance records, while also considering contextual factors including institutional support, administrative workload, and organizational culture to provide a more comprehensive understanding of faculty Perceived Research Productivity.

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Declaration of AI and AI-assisted technologies in the writing process (if author[s] utilize AI)

During the preparation of this manuscript, the author(s) utilized NotebookLM to assist in synthesizing and organizing a pre-selected corpus of academic literature uploaded entirely by the authors. The tool was employed exclusively to extract core findings, map conceptual relationships, and summarize insights from these verified sources. No automated text generation or external database searches were performed by the technology. The final critical evaluation, thematic synthesis, and manuscript drafting were conducted entirely by the authors, who maintain full accountability for the integrity and originality of this work..

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