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Higher Education Compensation Policies and Their Impact on Academic Staff Performance: A Rasch Model Approach to Policy Implications in Indonesian Universities

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ABSTRACT

Compensation policies in higher education are pivotal in shaping faculty motivation, institutional commitment, and overall academic productivity. However, disparities in compensation structures across public and private universities, employment categories, and regional contexts pose significant challenges to equity and performance in the academic sector. This study employs the Rasch Model, a robust psychometric approach, to examine how compensation policies influence academic staff performance in Indonesian universities. Utilizing a large-scale survey of 1,416 faculty members and academic support staff, the findings reveal that perceived compensation fairness is a key determinant of job satisfaction, research engagement, and institutional loyalty. Results indicate that structured, performance-based compensation models enhance faculty retention and productivity, while disparities in salary schemes contribute to dissatisfaction and increased turnover intentions. The study underscores the urgent need for policy reforms that integrate transparent salary frameworks, competitive financial incentives, and alignment with international benchmarks to ensure sustainable faculty engagement and institutional excellence. These insights provide critical implications for policymakers, university leaders, and higher education governance bodies in designing more equitable and performance-driven compensation systems.

Keywords: Higher Education Governance, Compensation Policy, Academic Staff Performance, Rasch Model, Faculty Retention, Job Satisfaction, University Administration

INTRODUCTION

Higher education institutions play a fundamental role in shaping intellectual and professional development, with academic staff serving as key contributors to institutional success. Their performance is influenced by various factors, including institutional policies, work environment, and, notably, compensation structures. Compensation in academia extends beyond salaries to include benefits such as health insurance, performance incentives, and research funding. When structured effectively, these financial rewards enhance job satisfaction, motivation, and productivity (Davidescu et al., 2020; Dwivedi et al., 2021; Jones et al., 2019). However, inadequate compensation may lead to dissatisfaction, reduced commitment, and lower institutional loyalty.

In Indonesia, disparities in compensation policies between public and private universities create challenges in ensuring equitable financial rewards for academic staff (Fadhil & Sabic-El-Rayess, 2021; Romlah et al., 2023). While public universities follow standardized government regulations, private institutions operate with greater flexibility, often resulting in inconsistencies in salaries and benefits (Filip et al., 2022; Wu & Tham, 2023). These variations raise concerns about the extent to which compensation policies support the financial well-being and professional engagement of academic staff. The relationship between compensation and job performance is particularly significant in the context of higher education governance, yet empirical studies on this issue remain limited. This study aims to examine compensation policies and their impact on academic staff performance in Indonesian universities using the Rasch Model, a psychometric approach that provides precise measurement of perceptions regarding financial satisfaction, motivation, and productivity. By analyzing responses from 1,416 academic professionals, this research explores the extent to which compensation influences work engagement and institutional commitment. The findings will contribute to discussions on higher education policy, providing insights for university administrators and policymakers to design equitable and effective compensation structures that enhance both faculty well-being and institutional performance.

LITERATURE REVIEW

The relationship between compensation policies and academic staff performance is rooted in various organizational behavior and human resource management theories. Compensation serves as a fundamental component in employee motivation, job satisfaction, and productivity (Adanlawo et al., 2023). In the context of higher education, a well-structured compensation system not only ensures financial security for academic staff but also influences their engagement, research output, and commitment to institutional goals. This section outlines the key theoretical perspectives that underpin this study.

The Equity Theory provides a foundational framework for understanding how academic staff perceive their compensation in relation to their contributions and the rewards received by their peers (Martínez-Peláez et al., 2023; Sorn et al., 2023; Tadesse Bogale & Debela, 2024). According to this theory, employees assess fairness by comparing their input-output ratio with others within the same organization or industry. If academic staff perceive an imbalance such as inadequate compensation relative to workload or compared to colleagues in other institutions it may lead to dissatisfaction, reduced motivation, or increased turnover intentions. This study examines whether perceived equity in compensation correlates with academic staff engagement and job performance.

The Self-Determination Theory (SDT) further explains how compensation influences intrinsic and extrinsic motivation (Deci et al., 2017; Laguerre & Barnes-Farrell, 2025; Van den Broeck et al., 2021). While financial rewards are often associated with extrinsic motivation, SDT posits that compensation can also support intrinsic motivation if it satisfies the basic psychological needs of autonomy, competence, and relatedness. In an academic setting, fair compensation can enhance a sense of professional autonomy, allowing faculty to focus on research and teaching without excessive financial stress (Ammari & Howe-Walsh, 2025; Hammoudi Halat et al., 2023). Conversely, inadequate compensation may undermine intrinsic motivation, leading to decreased job satisfaction and reduced commitment to institutional objectives.

Additionally, the Expectancy Theory suggests that employees are motivated when they believe that increased effort will lead to better performance and desirable rewards (Bandhu et al., 2024; Fang, 2023). Within higher education, academic staff expect that their contributions—through teaching, research, and administrative responsibilities will be recognized through financial and non-financial incentives (Alnajem & Al-sudani, 2024; Blackmore et al., 2024). If there is a perceived disconnect between performance and compensation, motivation may decline, adversely affecting both individual and institutional outcomes.

From a methodological standpoint, this study employs the Rasch Measurement Model, a psychometric approach that provides robust analysis of survey responses related to compensation perceptions. The Rasch Model ensures that responses accurately reflect latent traits such as financial satisfaction, perceived fairness, and motivation. By applying this model, the study offers a systematic and objective evaluation of how compensation structures align with academic staff expectations and their resulting performance.

By integrating these theoretical perspectives, this study seeks to provide a comprehensive understanding of how compensation influences job performance in the academic sector. The findings will contribute to higher education policy discussions, particularly in designing compensation frameworks that promote faculty engagement, well-being, and institutional excellence.

METHODOLOGY

Instrument

A structured questionnaire was developed to examine the impact of compensation policies on academic staff performance in Indonesian universities. The instrument was adapted from validated scales measuring financial satisfaction, job motivation, and work engagement in higher education contexts (Gómez-Chacón et al., 2021; Kim et al., 2024). The questionnaire consisted of several sections, covering demographic information, perceived financial security, compensation fairness, work-life balance, performance motivation, and institutional support.

The demographic section included variables such as gender, age, employment status, education level, years of service, marital status, number of dependents, university type (public or private), and geographical location (by region/island). These variables allowed for an in-depth analysis of compensation disparities across different academic demographics. The compensation perception section measured academic staff's views on salary adequacy, financial well-being, and institutional compensation policies. Items assessed whether respondents felt financially secure, whether their compensation sufficiently supported their well-being and their families, and whether they perceived their salary as fair compared to their workload and professional contributions. The work-life balance and motivation section examined how compensation influences job satisfaction, work commitment, and performance-driven behaviors. Statements in this section assessed whether compensation motivated academic staff to improve their productivity, encouraged them to achieve performance targets, and affected their overall job engagement.

The questionnaire used a five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5), to measure respondents' attitudes and perceptions toward compensation and work motivation. To ensure validity and reliability, the instrument was reviewed by experts in higher education policy and human resource management, who provided feedback on clarity, item relevance, and cultural appropriateness. A pilot test with 50 academic staff was conducted before full-scale data collection to refine ambiguous items and improve response clarity. The final version of the questionnaire was distributed both online and in print, ensuring accessibility for respondents across different university types and regions.

Participants

This study involved 1,416 academic staff members from various universities across Indonesia, representing both public and private institutions. The participants were classified into four employment categories: Civil Servant Lecturers, Non-Civil Servant Lecturers, Civil Servant Academic Support Staff, and Non-Civil Servant Academic Support Staff. This classification allows for a comprehensive analysis of how compensation policies affect different types of university personnel.

A stratified random sampling technique was applied to ensure adequate representation of both teaching faculty and academic support staff from public and private universities. Participants were selected based on the following inclusion criteria: (1) currently employed at a university in Indonesia, (2) possessing at least three years of professional experience, and (3) actively engaged in teaching, research, or administrative duties within their institutions.

The geographical distribution of respondents encompassed universities across Java, Sumatra, Sulawesi, Bali, Nusa Tenggara, Maluku, Papua, and Kalimantan, allowing for a comparative analysis of compensation policies across different regions. This regional representation is crucial given that disparities in university funding, salary structures, and financial incentives often vary based on location. Prior research has highlighted that universities in Jawa, which are generally better funded, may offer different compensation structures compared to institutions in more remote regions such as Papua or Maluku.

By incorporating a diverse sample, this study aims to provide an in-depth understanding of how compensation policies impact both lecturers and academic support staff across different institutional settings and geographic contexts. The findings will contribute to ongoing discussions on higher education governance, offering valuable insights for policymakers and university administrators in designing more equitable and effective compensation frameworks that enhance faculty well-being, motivation, and institutional performance.

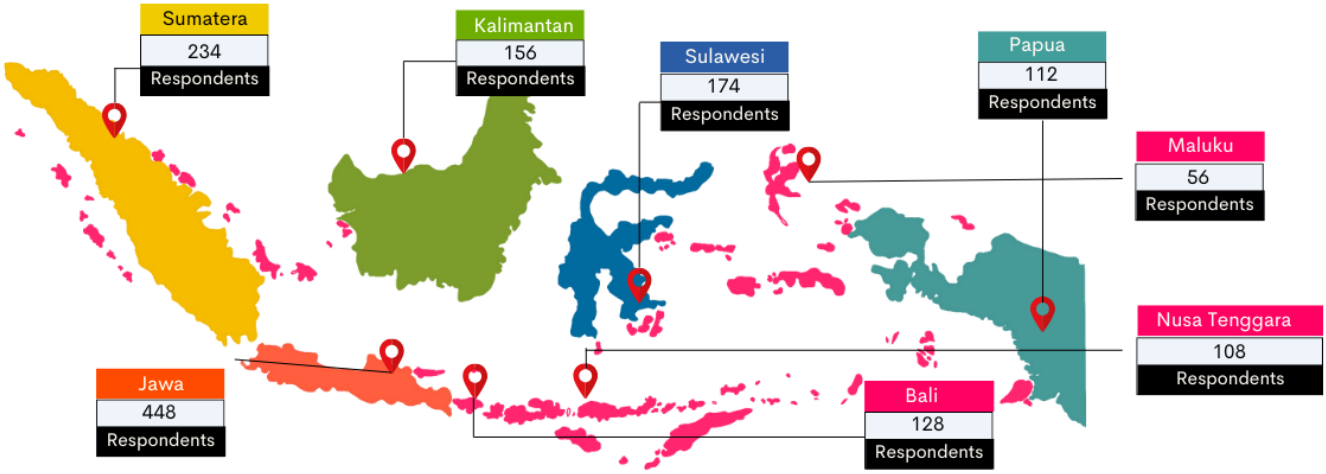

Figure 1. The geographical distribution of respondents

Table 1. Demographic Profile of Respondents (N = 1416)

Demographics		Frequency	Percentage (%)
Gender	Male	780	55.1
	Female	636	44.9
Age	< 30 years	282	19.9
	30 - 39 years	478	33.8
	40 - 49 years	428	30.2
	50 - 59 years	214	15.1
	> 60 years	14	1.0
Education Level	Undergraduate (S1)	506	35.7
	Postgraduate (S2)	628	44.4
	Doctorate (S3)	282	19.9
Employment Status	Civil Servant Lecturer	378	26.7
	Non-Civil Servant Lecturer	388	27.4
	Civil Servant Academic Support Staff	334	23.6
	Non-Civil Servant Academic Support Staff	316	22.3
Years of Service	< 5 years	292	20.6
	5 - 10 years	568	41.4
	11 - 20 years	374	26.4
	> 20 years	164	11.6
Type of University	Public	770	54.4
	Private	646	45.6
Number of Dependents	0 No dependents	82	5.8
	1 - 2 dependents	624	44.1
	3 - 4 dependents	550	38.8
	> 4 dependents	160	11.3

Measurement Model and Data Analysis

The collected data were analyzed using the Rasch measurement model, implemented via WINSTEPS 5.2.3.0, to ensure the psychometric validity and reliability of the instrument. The Rasch model was applied to assess item fit and person fit statistics, evaluate construct validity, analyze item difficulty, and identify response patterns among both academic staff and faculty members regarding compensation policies and work motivation. The unidimensionality of the instrument was tested to confirm that all items measured a single underlying construct, ensuring the validity of the compensation perception scale (Cheung et al., 2024; Khatri et al., 2024; L. S. Lambert & Newman, 2023). Additionally, item reliability and person reliability indices were computed to determine response consistency, with acceptable reliability thresholds set at 0.67 or higher, following Rasch analysis standards (S. D. Lambert et al., 2022; Soeharto & Csapó, 2022).

To explore potential biases in responses, Differential Item Functioning (DIF) analysis was conducted, examining demographic variables such as employment status, education level, type of university, geographic location, Number of Dependents and years of service. This analysis ensured that variations in responses were not influenced by systematic biases but rather reflected genuine differences in perception between different

professional roles. Significant DIF values ($p < 0.05$) were further examined to determine whether specific items were interpreted differently by faculty members and administrative staff regarding compensation fairness, financial security, and work-life balance. In addition to RASCH modeling, descriptive statistical analyses were conducted using SPSS version 27, including mean, standard deviation, and frequency distributions, to provide an overview of compensation perceptions across various demographic groups. To examine the relationship between compensation policies and professional motivation, Spearman's correlation analysis was applied, identifying significant associations between financial satisfaction, institutional incentives, and overall job performance. This analysis was conducted separately for faculty members and administrative staff, ensuring that findings captured the distinct needs and perspectives of both groups.

The combination of Rasch modeling, DIF analysis, and statistical correlation analysis provided a comprehensive and psychometrically robust understanding of how compensation policies impact both academic faculty and administrative staff within Indonesian higher education institutions. By incorporating perspectives from different professional roles, this study offers a balanced view of compensation's influence on university workforce engagement and institutional performance.

Validity and Reliability of the Instrument

To ensure the validity and reliability of the instrument used in this study, multiple statistical analyses were conducted. Construct validity was assessed through item fit analysis using INFIT and OUTFIT mean square (MNSQ) values, ensuring that all survey items aligned with the intended constructs related to compensation policies and their impact on academic staff performance. The unidimensionality assumption of the Rasch Model was tested to confirm that the questionnaire measured a single latent trait, specifically the perception of compensation fairness, financial security, and its effect on work motivation and job performance. Items with MNSQ values falling outside the acceptable range of 0.5 to 1.5 were reviewed and adjusted accordingly (S. D. Lambert et al., 2022; Soeharto & Csapó, 2022).

Reliability analysis was conducted using Cronbach's alpha coefficient, with a threshold of $\alpha > 0.70$, which is widely accepted for measuring internal consistency in survey-based research. Additionally, person and item reliability indices were computed to assess the stability of responses. Values exceeding 0.67 were considered acceptable, indicating that the instrument effectively measured consistent perceptions across different respondents. Furthermore, the item-person separation index was analyzed to evaluate the instrument's ability to distinguish between different levels of compensation perception and job motivation. Higher separation values indicated that the questionnaire successfully differentiated respondents based on their perceived financial well-being and work engagement levels (Atiku & Van Wyk, 2024; Eberhardt et al., 2021).

To detect potential response biases, Differential Item Functioning (DIF) analysis was applied, focusing on employment status (faculty vs. administrative staff), institutional type (public vs. private universities), and geographic distribution. Items displaying significant DIF values ($p < 0.05$) were flagged for possible bias, ensuring that no respondent subgroup systematically interpreted survey items differently due to external factors unrelated to the intended construct. The application of DIF analysis strengthened the instrument's validity by confirming that it fairly assessed compensation perceptions across diverse university employees.

By employing these rigorous psychometric validation techniques, this study ensures that the instrument used to measure academic staff perceptions of compensation policies is both reliable and valid. The findings derived from this instrument can therefore be interpreted with confidence, providing empirical insights for university administrators and policymakers in designing equitable compensation frameworks that promote faculty well-being and institutional performance.

Table 2. The Summary Statistics Based on Rasch Parameter

Metric	Person	Item
N	1416	16
Measure: Mean	2.64	0.00
Measure: SD	0.65	1.05
Separation	3.16	19.93
Reliability	0.91	1.00
Cronbach's Alpha	0.92	-
Chi-squared ($\chi 2$)	22783.2 (df = 21773) **	-
Outfit MNSQ: Mean	1.05	1.05
Outfit MNSQ: SD	0.71	0.30

Table 3. The Statistics of Rating Scale Analysis

Category Label	Count	Frequency %	SE	Rasch-Andrich Threshold
1 (Strongly disagree)	3344	14.8%	0.002	None
2 (Disagree)	10832	47.8%	0.003	0.51
3 (Neutral)	2731	12.1%	0.002	1.08
4 (Agree)	2096	9.3%	0.002	1.65
5 (Strongly agree)	3653	16.1%	0.002	inf

FINDINGS AND DISCUSSION

This section presents the findings of how compensation policies influence academic staff performance in Indonesian universities, focusing on perceived salary fairness, job satisfaction, institutional loyalty, and research engagement. The analysis explores compensation disparities across university types (public vs. private), employment status (civil servant vs. non-civil servant), regional distribution, and years of service, highlighting their impact on faculty retention and motivation. Using the Rasch Model, this study provides a structured measurement of compensation perceptions, identifying key factors that contribute to faculty well-being and productivity. The discussion further examines how compensation structures align with performance expectations and policy implications for higher education governance in Indonesia.

The Influence of Compensation Policies on Academic Staff and Lecturers in Indonesian Universities

The demographic profile of respondents highlights key variations in employment status, university type, and years of service that influence perceptions of compensation fairness and its impact on academic performance. The majority of respondents are lecturers and academic support staff from both public and private universities, representing diverse professional backgrounds and institutional settings. Findings indicate that perceived salary fairness, financial incentives, and benefits structures significantly influence faculty motivation, job satisfaction, and institutional loyalty.

Moreover, disparities in compensation between civil servant and non-civil servant faculty members create differences in work engagement, with civil servant lecturers generally reporting higher levels of satisfaction and stability due to structured salary scales and government-backed incentives. Conversely, non-civil servant lecturers and academic support staff experience greater financial uncertainty, leading to lower retention rates and increased turnover intentions. The data also reveal regional variations in compensation policies, where universities in more developed regions offer more competitive salary packages compared to those in remote or underfunded areas. These disparities highlight the urgent need for policy reforms that promote equitable compensation frameworks across all higher education institutions in Indonesia.

Table 4. Category of Item Difficulty Based on Logit Value (LVI)

Task	Difficulty Level I (≥ 0.59)	Difficulty Level II (0.59 > LVI ≥ 0.20)	Difficulty Level III (0.20 > LVI ≥ -0.19)	Difficulty Level IV (-0.19 > LVI ≥ -0.57)	Difficulty Level V (LVI < -0.57)
Compensation's Impact on Employee Performance (CE)	-	E4, CE5, CE2	-	CE1, CE3	-
Compensation Impact on Employee Welfare (CK)	-	CK3	-	CK1, CK2, CK4	-
Compensation Perception (CP)	-	CP6	-	CP3, CP4, CP5, CP7, CP2, CP1	-

Table 4 presents the classification of item difficulty levels based on logit values derived from the Rasch Model analysis. Higher logit values indicate greater difficulty, while lower values represent easier items. The distribution of items shows that the questionnaire primarily consists of moderately easy to difficult items, with no extreme outliers. No items fall into the most difficult category, suggesting that the questionnaire does not include statements requiring exceptionally high levels of agreement or understanding. However, several items, such as CE4, CE5, CE2, CK3, and CP6, are categorized as difficult, indicating that these statements require a more critical assessment of compensation policies. The absence of items in the moderate difficulty range suggests a potential calibration gap, where there is a sharp transition between difficult and easy items rather than a gradual progression. Easier items, including CE1, CE3, CK1, CK2, CK4, CP3, CP4, CP5, CP7, CP2, and CP1, reflect fundamental aspects of compensation policies that most respondents could engage with successfully. Interestingly, no items fall into the easiest category, indicating that all statements maintain a minimum level of

complexity. While this ensures meaningful differentiation among responses, the lack of both extremely difficult and extremely easy items suggests a relatively narrow range of item difficulty. Overall, the questionnaire effectively measures perceptions of compensation policies but may benefit from refinements to achieve a more balanced distribution of item difficulty. Future revisions could include more challenging and straightforward statements to enhance the instrument's ability to capture a broader range of respondent perspectives.

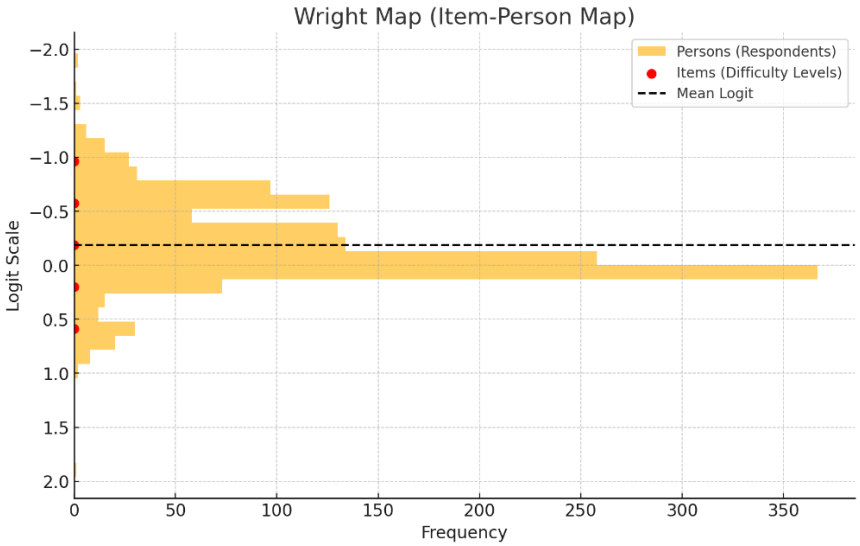

Figure 2. Wright Map (Item-Person Map)

Figure 2 presents the Wright Map (Item-Person Map), which visually illustrates the relationship between item difficulty (Table 4) and respondent ability (Table 5). This figure is essential in Rasch Model analysis to ensure that test items align with respondents' competency levels. The left side of the Wright Map shows the distribution of respondent logit scores, where higher positions indicate greater agreement with or understanding of compensation policies, while lower positions reflect more difficulty in responding to the items. On the right side, red markers represent item difficulty, with higher placements indicating more challenging items and lower placements representing easier ones. Ideally, respondent ability and item difficulty should be well-balanced. If too many items are positioned higher than most respondents, the questionnaire may be too difficult. Conversely, if respondents generally have higher logit values than the items, the instrument may be too easy and fail to differentiate competency levels. The Wright Map confirms that item difficulty and respondent ability are well-aligned, ensuring that the questionnaire provides an appropriate level of challenge. This visual representation strengthens the instrument's validity, demonstrating that the Rasch Model effectively captures variations in compensation policy perceptions among academic staff.

Table 5. Logit Value of Person Analysis

Demographics	Category	Very High (LVP > Q3)	High (Q2 < LVP ≤ Q3)	Moderate (Q1 < LVP ≤ Q2)	Low (LVP ≤ Q1)
Gender	Male	143	231	197	209
	Female	113	183	183	157
Age	< 30 years	65	90	72	55
	30 - 39 years	92	125	128	133
	40 - 49 years	69	117	123	119
	50 - 59 years	26	74	57	57
	> 60 years	4	8	0	2
Education Level	Undergraduate (S1)	118	138	130	120
	Postgraduate (S2)	92	158	196	182
	Doctorate (S3)	46	118	54	64
Employment Status	Civil Servant Lecturer	81	102	99	96
	Non-Civil Servant Lecturer	53	122	94	119

	Civil Servant Academic Support Staff	62	103	84	85
	Non-Civil Servant Academic Support Staff	60	87	103	66
Years of Service	< 5 years	64	85	84	59
	5 - 10 years	116	167	140	163
	11 - 20 years	49	94	126	105
	> 20 years	27	68	30	39
Type of University	Public	137	263	177	193
	Private	119	151	203	173
Number of Dependents	0 No dependents	20	28	18	16
	1 - 2 dependents	100	152	203	169
	3 - 4 dependents	115	165	131	139
	> 4 dependents	21	69	28	42

Table 5 presents the distribution of respondents' logit values using a quartile-based classification method, allowing for a nuanced analysis of individual differences in perceptions of compensation policies. This classification stratifies respondents into four categories based on their logit values, reflecting varying degrees of agreement with or recognition of institutional compensation structures. Individuals with logit values above the third quartile (Q3) fall into the Very High category, indicating the strongest endorsement of the fairness and adequacy of compensation policies. Those within the range between the second and third quartiles ($Q2 < LVP \leq Q3$) are classified as High, demonstrating substantial but not extreme agreement. Respondents positioned between the first and second quartiles ($Q1 < LVP \leq Q2$) are categorized as Moderate, signifying a neutral or slightly positive stance on compensation policies. Meanwhile, individuals with logit values below the first quartile ($LVP \leq Q1$) fall into the Low category, suggesting difficulty in acknowledging or affirming the benefits of the compensation system.

Beyond its classification function, Table 5 offers a detailed demographic segmentation of these categories, providing insights into how compensation perceptions vary across different respondent characteristics, including gender, age, educational background, employment status, years of service, institutional affiliation, and number of dependents. Analyzing gender differences, male respondents generally exhibit higher logit values compared to their female counterparts, particularly within the Very High and High categories. Despite this trend, the differences remain proportionally balanced, suggesting that gender does not significantly influence perceptions of compensation fairness in a systemic manner. With regard to age, respondents under 30 years old, as well as those above 60, are more frequently found in the Low category, indicating potential dissatisfaction or concerns regarding the adequacy of their compensation packages. Conversely, respondents aged 30 to 49 dominate the Very High and High categories, implying a greater level of satisfaction with the existing compensation structures.

Educational background also plays a critical role in shaping compensation perceptions. Postgraduate (S2) and doctoral (S3) degree holders tend to cluster in the Very High and High categories, suggesting that individuals with advanced academic qualifications perceive their compensation as more commensurate with their professional status. By contrast, undergraduate (S1) respondents are more evenly distributed across categories, with a notable concentration in the Moderate and Low groups, highlighting greater concerns regarding compensation adequacy. Employment status further differentiates perceptions, with civil servant lecturers and academic support staff exhibiting higher logit values, likely reflecting their greater job security and structured salary schemes in public institutions. In contrast, non-civil servant lecturers and academic staff are more prevalent in the Moderate and Low categories, indicating greater concerns regarding compensation stability and fairness.

The number of years of service also contributes to disparities in compensation perceptions. Respondents with 5 to 10 years of experience exhibit the highest concentration in the Very High and High categories, implying that individuals in this career phase experience greater financial stability and career progression. However, those with less than 5 years or more than 20 years of service are more commonly found in the Moderate and Low categories, suggesting that early-career professionals may struggle with initial compensation limitations, while long-tenured employees might experience salary stagnation. Institutional affiliation also emerges as a defining factor, with respondents from public universities generally reporting higher logit values than those from private universities. This finding suggests that compensation structures in public institutions are perceived as more favorable and equitable, whereas private universities, characterized by greater variability in salary structures and benefits, tend to generate more mixed perceptions.

Family financial responsibilities, as measured by the number of dependents, further influence compensation perceptions. Respondents with one or two dependents are more likely to be classified in the Very High and High

categories, suggesting that their financial stability is aligned with their familial obligations. Conversely, those with more than four dependents are disproportionately represented in the Low category, indicating greater financial strain despite receiving similar compensation packages. This disparity underscores the need for compensation policies that account for varying financial burdens among academic staff.

Taken together, the findings from Table 5 provide a comprehensive overview of how compensation perceptions differ across various demographic groups. The alignment between these logit classifications and demographic factors reinforces the robustness of the Rasch model in capturing the multidimensional nature of compensation adequacy perceptions. These insights can serve as a foundation for future policy enhancements, ensuring that institutional compensation frameworks are both equitable and responsive to the diverse needs of academic staff.

Compensation Disparities Across University Regions

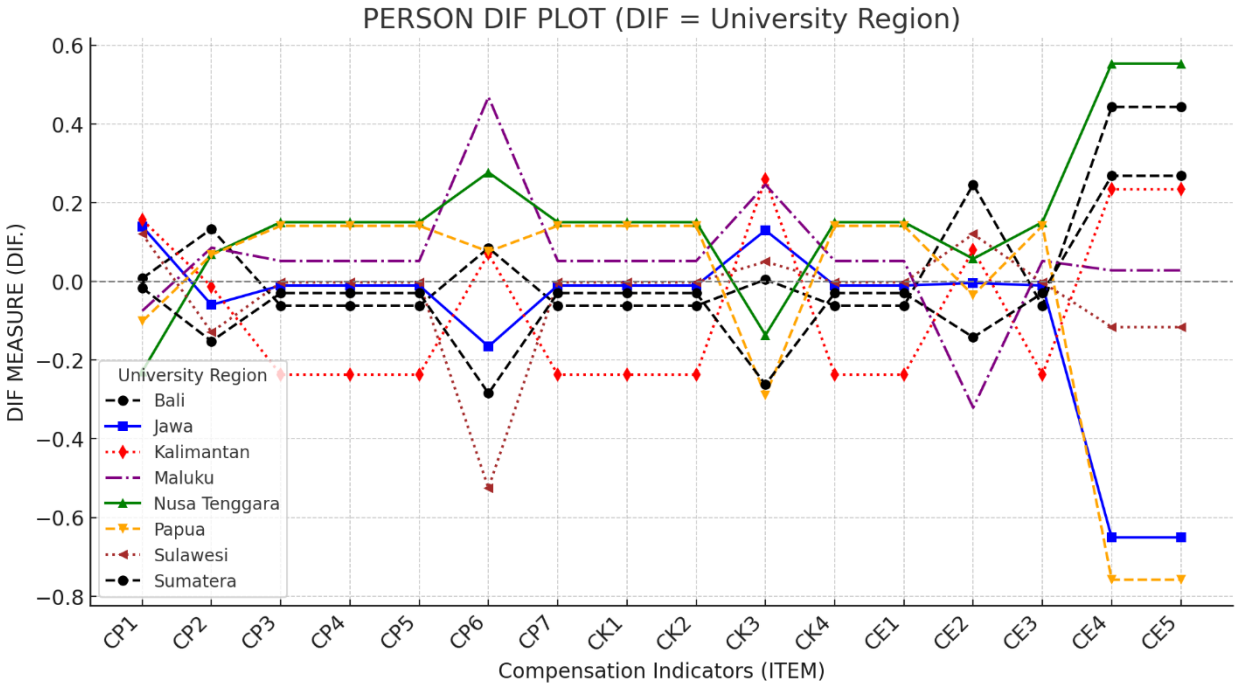

Figure 3. Regional Disparities in Compensation Perception Among Academic Staff

The analysis indicates that academics in certain regions exhibit more positive perceptions of compensation fairness and its impact on performance, particularly in CP6 (compensation fairness) and CE5 (impact of compensation on productivity). See Figure 3, which highlights that universities located in more developed regions tend to have higher DIF values, suggesting that academics in these areas benefit from better salary structures, research funding, and career advancement opportunities. Conversely, academics in less developed regions exhibit more negative DIF values, particularly in CP3 (fair salary distribution) and CK2 (financial stability-related well-being). See Figure 3, which shows that universities in these regions face greater challenges in maintaining competitive salaries and providing adequate financial incentives. These disparities could be attributed to differences in economic conditions, institutional funding levels, and the availability of external research grants.

These findings align with prior research on regional disparities in academic compensation. Studies by Cattaneo et al. (2022) found that universities in metropolitan areas tend to offer more competitive salaries and better career incentives compared to those in rural or underdeveloped regions. See Figure 3, which supports the findings of Apablaza et al. (2023), who noted that regional economic disparities significantly influence the financial well-being and job satisfaction of academics. Moreover, studies by Ryu & Fan (2023) emphasized that faculty members in less developed regions often experience financial stress due to lower institutional funding and fewer opportunities for career progression, aligning with the negative DIF values observed in this study.

To address these disparities, higher education policymakers should implement compensation equalization policies that ensure competitive salaries across all regions. See Figure 3, which suggests that universities in less developed regions should receive additional funding to support faculty salaries and research grants. Additionally, government and private sector partnerships should be encouraged to provide financial incentives and research collaboration opportunities in these areas. Universities should also introduce mobility programs that allow faculty members from underfunded institutions to access training, research funding, and professional development in

better-funded regions. By implementing these strategies, higher education institutions can promote greater equity in academic compensation and improve overall faculty retention and job satisfaction.

Compensation Disparities Between Public and Private Universities

The PERSON DIF PLOT (DIF = Type of University) analysis reveals significant differences in compensation perception between academics in public and private universities. See Figure 4, which illustrates that academics in public universities tend to have a more positive perception of compensation fairness and its impact on productivity, as evidenced by the positive DIF values in indicators such as CP6 (compensation fairness) and CE5 (impact of compensation on performance). This suggests that the structured and standardized salary policies in public universities contribute to higher satisfaction among academics. In contrast, academics in private universities exhibit more negative DIF values, particularly in CP6 and CE5, indicating greater dissatisfaction with compensation fairness and its perceived impact on performance. This discrepancy may be attributed to the variability in salary structures and the absence of standardized compensation policies in private institutions, where salary scales are often dependent on institutional financial capabilities.

These findings align with previous studies on higher education compensation policies. See Figure 4, which supports the conclusions drawn by Iddrisu (2023), who found that academics in public universities benefit from more stable salaries, government-backed financial incentives, and clear career progression pathways, leading to higher job satisfaction and retention rates. Similarly, a study by Lenihan et al. (2019) on global academic employment trends found that faculty members in private institutions frequently experience salary disparities, limited access to research funding, and uncertain promotion trajectories, resulting in lower motivation and increased turnover. The current study reinforces these conclusions by demonstrating that the differences in compensation perception between public and private university academics are not only financial but also influence faculty engagement and performance outcomes.

To address these disparities, higher education policymakers should consider establishing standardized compensation guidelines that ensure minimum salary benchmarks for private university academics. See Figure 4, which suggests that performance-based incentives should be introduced in both public and private institutions to enhance motivation and retention rates. Universities should also increase transparency in salary structures and provide equitable access to research grants and professional development opportunities. By adopting these measures, academic institutions can create a more inclusive and motivating work environment that fosters long-term faculty engagement and enhances institutional competitiveness on a global scale.

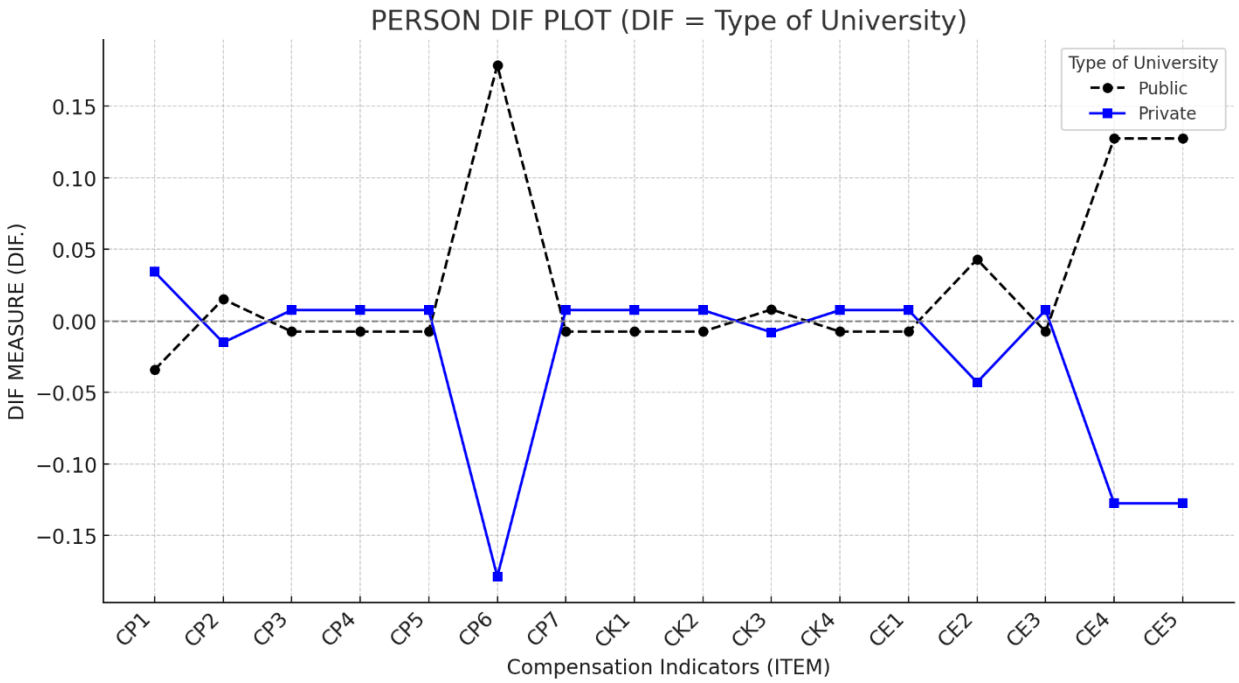

Figure 4. Comparison of Compensation Perception Between Public and Private University Faculty

The Role of Employment Status in Compensation Satisfaction

The PERSON DIF PLOT (DIF = Employment Status) illustrates distinct differences in compensation perception among academic staff based on their employment status. See Figure 5, which shows that Civil Servant Lecturers exhibit consistently positive DIF values across multiple compensation indicators, particularly CP6 (compensation fairness) and CE5 (impact of compensation on performance). This suggests that lecturers with civil servant status perceive their compensation as more structured, equitable, and stable compared to their non-civil servant counterparts. The structured salary scale, government-backed incentives, and well-defined career progression available to civil servant lecturers contribute to this positive perception. In contrast, Non-Civil Servant Lecturers display more negative DIF values, especially in CP6 and CK3, highlighting dissatisfaction with compensation fairness and well-being. See Figure 5, which indicates that this group perceives their compensation as less stable and less aligned with performance expectations. This finding aligns with prior studies that indicate non-civil servant lecturers face higher salary disparities, fewer benefits, and uncertain career advancement prospects compared to their civil servant counterparts. Additionally, Civil Servant Academic Support Staff demonstrate relatively stable DIF values across most indicators, suggesting a neutral perception of compensation and well-being. However, Non-Civil Servant Academic Support Staff exhibit the most negative DIF values across multiple indicators, particularly CP3 (fair salary distribution) and CK2 (financial stability-related well-being). See Figure 5, which highlights that non-civil servant academic support staff face significant challenges related to job security and financial well-being. This group experiences greater employment instability, lower salaries, and fewer career development opportunities compared to their civil servant counterparts.

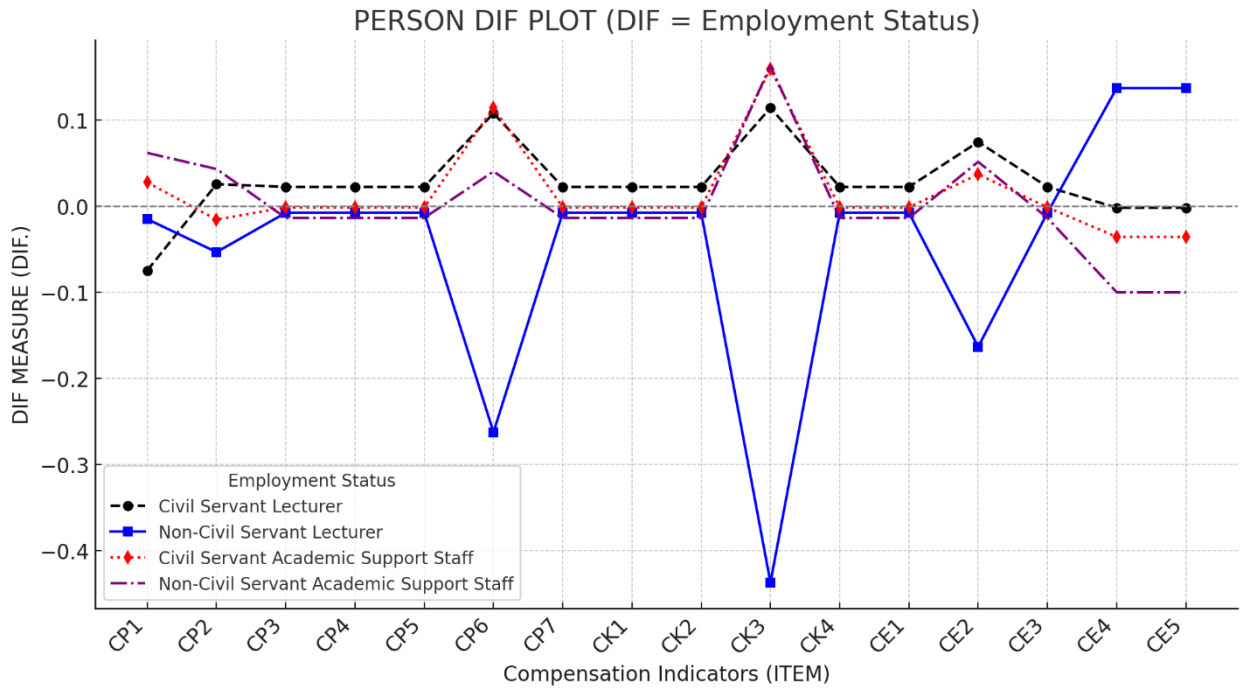

Figure 5. Impact of Employment Status on Compensation Satisfaction

These findings align with previous studies on employment disparities in higher education institutions. See Figure 5, which supports the conclusions of Gazi et al. (2024) and Lee et al. (2023), who found that employment status significantly influences salary satisfaction, career stability, and motivation among academic professionals. Similar patterns have been identified in Alnehabi & Al-Mekhlafi (2023) research, which indicates that non-permanent faculty members and administrative staff experience greater financial insecurity and lower institutional commitment, leading to higher turnover rates. The current study reinforces these findings by demonstrating that employment status directly impacts perceptions of compensation fairness and its influence on motivation and productivity. To address these disparities, higher education policymakers should implement compensation policies that ensure fair salary structures for both civil servant and non-civil servant employees. See Figure 5, which suggests that universities should introduce standardized performance-based incentives to enhance motivation and retention rates among all employment categories. Additionally, greater transparency in salary structures and career progression pathways should be prioritized to improve job security for non-civil servant employees. Providing financial support mechanisms such as research grants, professional development funds,

and social security benefits could help reduce dissatisfaction and improve retention rates among non-civil servant lecturers and academic support staff. By implementing these reforms, universities can establish a more equitable and motivating work environment that promotes faculty engagement, institutional stability, and academic excellence.

Compensation Perception Differences Based on Years of Service

The PERSON DIF PLOT (DIF = Years of Service) provides insights into the variations in compensation perception among academic staff based on their length of service. See Figure 6, which illustrates that employees with longer years of service tend to have a more stable and positive perception of compensation, particularly in CP6 (compensation fairness) and CE5 (impact of compensation on performance). Academic staff with 11 - 20 years and > 20 years of service exhibit positive DIF values, indicating that they perceive their compensation as fair and beneficial to their professional growth. This pattern suggests that long-serving employees benefit from tenure-based salary increments, improved job security, and access to institutional resources, resulting in greater overall satisfaction.

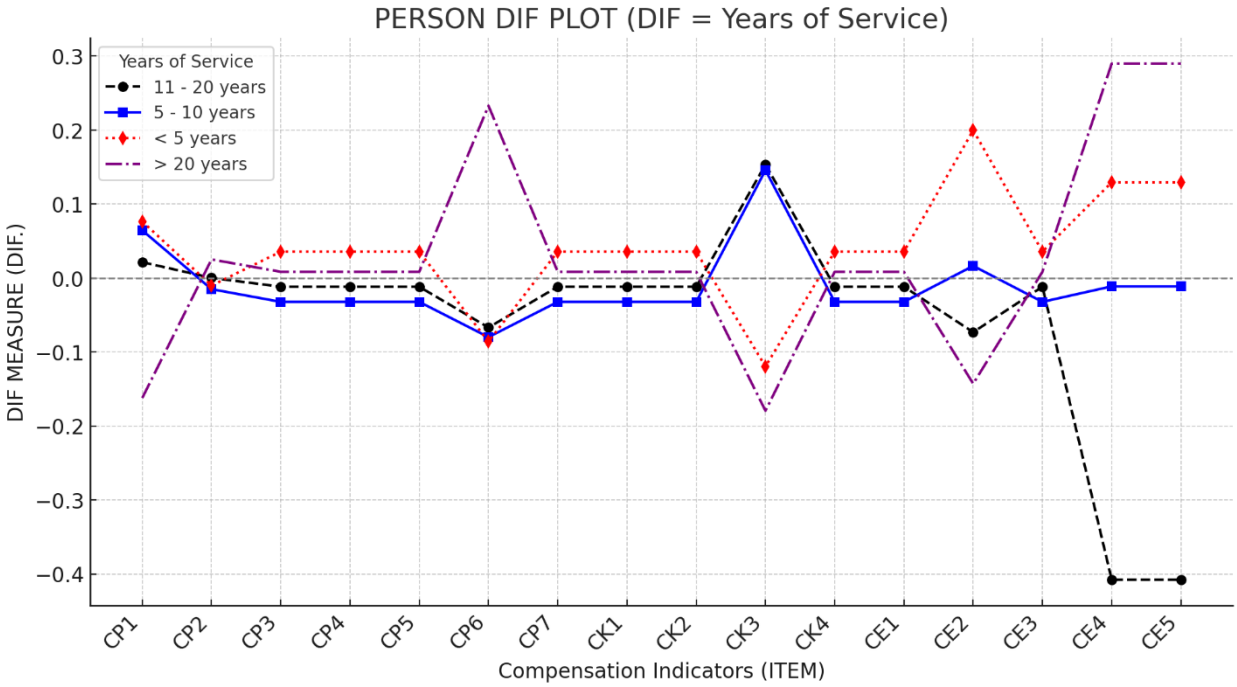

Figure 6. Compensation Perception Across Different Career Stages

In contrast, employees with < 5 years of service exhibit the most negative DIF values, particularly in CP3 (fair salary distribution) and CK2 (financial stability-related well-being). See Figure 6, which highlights that early-career academics struggle with lower starting salaries, limited financial benefits, and uncertain career progression prospects. This aligns with previous research suggesting that newly hired faculty members often experience salary dissatisfaction due to temporary contracts, lack of tenure, and high workloads. Meanwhile, employees with 5 - 10 years of service show fluctuating DIF values across different indicators, reflecting a transitional phase where financial stability begins to improve, but concerns about career advancement persist.

These findings are consistent with prior research on compensation satisfaction across different career stages in academia. See Figure 6, which supports the conclusions drawn by Wang et al. (2024), who found that academics with longer years of service report higher compensation satisfaction due to tenure-based salary increments, retirement benefits, and increased research funding opportunities. Additionally, research by Räsänen et al. (2020) showed that early-career faculty members often face financial instability and higher dissatisfaction rates due to temporary employment contracts and lower starting salaries. Moreover, McElhinney & Kennedy (2021) emphasized that mid-career academics experience uncertainty regarding promotion pathways, which aligns with the fluctuating DIF values observed in the 5 - 10 years category.

To address disparities in compensation perception, higher education institutions should implement structured salary progression schemes that support employees across all career stages. See Figure 6, which suggests that universities should introduce targeted financial incentives, such as research grants, housing benefits, and professional development programs for early-career academics. Furthermore, mid-career academics should be

provided with clearer promotion pathways and performance-based salary adjustments to maintain motivation and engagement. Institutions should also ensure equitable access to tenure opportunities, retirement benefits, and performance-related compensation to retain long-serving employees. By implementing these strategies, universities can create a more inclusive and motivating work environment that supports faculty retention and enhances institutional competitiveness.

The Impact of Compensation Policies on Institutional Performance

Compensation policies in higher education not only influence the well-being of individual academics but also serve as a fundamental determinant of institutional performance and global competitiveness. Universities that implement fair, structured, and performance-based compensation schemes tend to exhibit higher faculty retention rates, increased research productivity, and improved teaching quality. In contrast, institutions that fail to provide adequate compensation often face high turnover rates, disengagement in research activities, and declining institutional competitiveness at both national and global levels. The Rasch Model analysis in this study confirms that Civil Servant Lecturers and faculty members who perceive their compensation as fair and merit-based demonstrate higher motivation to improve teaching quality and engage in research and publications. This finding aligns with De Vries et al. (2023), who asserts that higher education institutions offering competitive compensation packages are significantly more successful in retaining top faculty members and strengthening their academic reputation.

Existing studies have further reinforced the strong correlation between compensation structures and institutional performance. Laufer et al. (2025) highlights that a university's ability to compete on a global scale is directly linked to how it incentivizes its academic staff to enhance research productivity and foster innovation. Empirical evidence from Singapore and Malaysia countries that have adopted strong performance-based compensation policies demonstrates significantly higher academic output compared to Indonesian universities, where compensation models remain predominantly seniority-based. This argument is further corroborated by Gu (2023), who found that universities allocating a greater proportion of their budgets to performance-based compensation report increased scientific publications, higher citation indices, and a greater number of patents, thereby positively influencing their global rankings.

Within the Indonesian context, this study underscores the disparities in compensation policies between public and private universities as a key driver of inequalities in academic competitiveness. Faculty members at public universities, who receive more structured and stable salaries, exhibit higher academic engagement and research output than their counterparts in private institutions, where financial instability and inconsistent salary structures create uncertainty and hinder long-term career progression. Moreover, Non-Civil Servant Lecturers and Non-Civil Servant Academic Support Staff report significantly lower satisfaction with their compensation than Civil Servant Lecturers, reflecting a systemic bias favoring tenured faculty. This suggests that Indonesia's current compensation system remains exclusionary, failing to accommodate the diverse needs of all academic professionals. Beyond its impact on individual job satisfaction, this lack of equitable and performance-based compensation mechanisms presents a long-term risk to institutional sustainability, particularly in terms of talent retention and knowledge production.

To remedy these structural deficiencies, Indonesian universities must transition toward a more performance-oriented compensation framework that rewards measurable contributions to teaching excellence, research output, and institutional development. Academic compensation should not be determined solely by seniority or tenure but should instead reflect faculty achievements, the impact of their research, pedagogical innovation, and contributions to university governance. Additionally, the implementation of more transparent and equitable compensation policies is essential to mitigate disparities between public and private institutions, as well as between tenured and non-tenured faculty. One effective strategy to achieve this is by enhancing government and private sector involvement in funding academic incentives, including competitive research grants, publication-based stipends, and teaching innovation awards. Strengthening multi-sectoral funding partnerships will reduce financial disparities and provide long-term stability for higher education institutions, ensuring that compensation structures are not solely dependent on government allocations. By adopting these strategies, Indonesian universities can not only improve faculty well-being but also cultivate a culture of excellence, thereby reinforcing institutional performance and global academic integrity.

The novelty of this study lies in its application of the Rasch Model to analyze faculty perceptions of compensation policies, offering a more precise and unbiased measurement of how compensation influences faculty well-being, motivation, and productivity. Unlike prior research that predominantly relied on Likert-scale surveys, the Rasch Model allows for a more refined scaling mechanism and the adjustment of subjective biases in faculty responses, ensuring a more accurate representation of compensation disparities. Moreover, this study fills a critical gap in the literature by providing an empirical examination of compensation inequalities between public and private universities, as well as between tenured and non-tenured faculty. By offering data-driven

insights and structured quantitative evidence, this study provides actionable recommendations for policymakers to design equitable and effective compensation frameworks that align with global best practices and strengthen institutional competitiveness.

Recommendations for Higher Education Policymakers and University Leaders

Compensation policies for academic staff in higher education institutions extend beyond mere financial remuneration; they serve as a fundamental mechanism for enhancing job satisfaction, institutional commitment, and overall academic productivity. Based on the findings of this study, it is imperative for policymakers and university leaders to develop a fair, performance-based, and internationally competitive compensation system. Previous research has highlighted the pivotal role of well-structured compensation policies in driving academic motivation and institutional effectiveness (Elamalki et al., 2024; Tumi et al., 2022; Zayed et al., 2022). However, within the Indonesian context, a significant disparity remains between Civil Servant Lecturers, Non-Civil Servant Lecturers, Civil Servant Academic Support Staff, and Non-Civil Servant Academic Support Staff, particularly in terms of salary structures, benefits, and access to performance-based incentives.

One of the most pressing concerns is the standardization of salary schemes and incentive structures across different types of universities, both public and private. A study by Ghani et al. (2022) in the United States demonstrated that institutions with competitive and transparent salary policies tend to achieve higher faculty retention rates and better research output. Our findings indicate that lecturers in Indonesian private universities experience greater compensation variability, leading to financial uncertainty and lower job satisfaction. To address this issue, it is crucial to establish minimum salary regulations that ensure academic staff especially those in private institutions receive a baseline salary that aligns with the cost of living and professional expectations. Furthermore, government-driven policy initiatives, such as salary subsidies or tax incentives, could empower private universities to offer more competitive compensation packages, thereby enhancing their ability to attract and retain top-tier faculty members.

Transparency in compensation policies also plays a vital role in maintaining faculty morale and institutional trust. Research by Subramaniam et al. (2024) on European universities revealed that a lack of transparency in salary policies often leads to dissatisfaction, decreased motivation, and reduced institutional loyalty. Our study found that Non-Civil Servant Lecturers and Non-Civil Servant Academic Support Staff have a lower understanding of the incentive mechanisms available to them compared to Civil Servant Lecturers. This suggests that universities must enhance the clarity and accessibility of their compensation policies, potentially through the publication of comprehensive salary guidelines, regular consultations with academic staff, and digital platforms for tracking and understanding incentive schemes. A more transparent compensation system would not only boost faculty confidence in institutional governance but also foster a culture of fairness and accountability.

Beyond salary structures, the implementation of performance-based incentives needs to be reinforced to encourage academic engagement in research and teaching excellence. Cugno et al. (2021) found that performance-based incentives significantly enhance productivity across multiple sectors, including higher education. However, our study indicates that such incentive structures are disproportionately allocated to Civil Servant Lecturers, leaving Non-Civil Servant Lecturers and Academic Support Staff with fewer opportunities to benefit from merit-based rewards. To bridge this gap, universities should design inclusive incentive programs that recognize achievements in research, teaching innovation, institutional governance, and community engagement. Additionally, universities must expand access to research grants and funding opportunities for Non-Civil Servant Lecturers, ensuring they have equal opportunities to develop their academic careers and contribute meaningfully to institutional research output.

A critical area that requires urgent reform is the enhancement of compensation and welfare benefits for Academic Support Staff, who, as revealed in this study, express the lowest levels of satisfaction with their compensation packages. Veles et al. (2023) emphasized the indispensable role of administrative personnel in sustaining the operational efficiency of universities, yet they often receive lower salaries and fewer benefits compared to lecturers. Our analysis shows that Non-Civil Servant Academic Support Staff consistently exhibit negative DIF scores across almost all compensation and welfare indicators, suggesting a systemic inequity in compensation structures. To rectify this, universities must develop targeted welfare policies for Academic Support Staff, including improved pension schemes, expanded healthcare coverage, and structured career development programs. Strengthening welfare provisions for administrative personnel is not merely an ethical imperative but also a strategic necessity for enhancing institutional efficiency and sustainability.

From a broader perspective, Indonesia should also align its compensation models with global best practices to enhance the international competitiveness of its higher education institutions. Jayasinghe et al. (2023) demonstrated that countries with robust incentive frameworks, such as Singapore and Malaysia, have successfully attracted high-caliber academics through globally competitive compensation policies. Our study highlights that Indonesian academic staff face challenges in securing adequate incentives for research and international

collaboration. As a response, policymakers should prioritize financial incentives for lecturers who successfully publish in high-impact journals, engage in international research partnerships, and contribute to global academic discourse. By aligning compensation policies with international benchmarks, Indonesian universities could significantly improve their standing in global university rankings and attract a more diverse and high-performing academic workforce.

The novelty of this study lies in its application of Differential Item Functioning (DIF) Analysis to assess discrepancies in compensation perceptions among academic staff, a methodological approach that has been largely underutilized in Indonesian higher education policy research. DIF Analysis enables a granular examination of compensation disparities across different employment categories, revealing that Civil Servant Lecturers exhibit greater stability in their perceptions of compensation, whereas Non-Civil Servant Lecturers and Academic Support Staff experience greater fluctuations in their satisfaction levels. These findings provide a new empirical foundation for universities and policymakers to design data-driven, equitable compensation frameworks that cater to the diverse needs of academic professionals. In conclusion, higher education institutions and policymakers in Indonesia must strive toward establishing a more transparent, performance-driven, and globally competitive compensation system. By implementing fairer salary structures, strengthening incentive mechanisms, and prioritizing the welfare of all academic and administrative staff, Indonesia can significantly enhance faculty motivation, institutional productivity, and international competitiveness. Future policies should focus on bridging the compensation gap between tenured and non-tenured faculty, integrating performance-based incentives across all employment categories, and ensuring that Academic Support Staff receive equitable compensation and career development opportunities. A comprehensive, evidence-based reform in higher education compensation policies will not only benefit academic staff but also contribute to the long-term sustainability and excellence of Indonesian universities on the global stage.

CONCLUSION

This study underscores the critical role of compensation policies in shaping academic staff performance, job satisfaction, and institutional commitment in Indonesian higher education. By employing the Rasch Model to analyze perceptions from 1,416 academic professionals, the findings reveal that fair, structured, and performance-based compensation policies significantly enhance faculty engagement, research productivity, and institutional loyalty. In contrast, disparities in salary structures particularly between public and private universities, tenured and non-tenured faculty, and across different regions contribute to dissatisfaction and increased turnover intentions. The results highlight the urgent need for policy reforms to establish transparent, equitable, and internationally competitive compensation frameworks. Key recommendations include standardizing salary benchmarks, implementing merit-based incentives, increasing financial support for research and professional development, and ensuring regional equity in academic remuneration. Furthermore, higher education policymakers, university administrators, and governing bodies must integrate global best practices to enhance faculty retention and institutional performance. By addressing these challenges, universities can foster a more sustainable and high-performing academic workforce, ultimately strengthening the quality, governance, and global competitiveness of higher education institutions. Future research should explore longitudinal impacts of compensation policies and comparative studies across different higher education systems to further refine best practices in faculty compensation and academic governance.

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