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Empowering performance: The impact of human resource development strategies on lecturer productivity

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ABSTRACT

BACKGROUND AND OBJECTIVES: Strategic Human Resource Development (HRD) is crucial for enhancing organizational performance and reputation within the competitive higher education sector. Lecturer productivity is a key indicator of institutional success; however, the efficiency of integrated HRD approaches in academic settings requires further empirical investigation. This study evaluates the impact of core human resource development practices, training, career development, and compensation on lecturer productivity at the National School of Administration in Muha Commune. It aims to identify gaps in HRD implementation and provide evidence-based recommendations for enhancement.

METHODS: A quantitative research design was employed. Using convenience sampling, 24 lecturers were selected from a population of 27. Primary data were collected via a structured, self-administered questionnaire using a five-point Likert scale. Data analysis was conducted with SPSS 25.0, utilizing descriptive statistics, Pearson's correlation, and multiple linear regression to identify relationships and predictive power.

RESULTS: The results revealed strong positive correlations among all Human Resource Development practices and lecturer productivity. Training demonstrated a strong correlation ($r = 0.714$, $p < 0.009$), career development a very strong correlation ($r = 0.851$, $p < 0.001$), and remuneration a moderate correlation ($r = 0.604$, $p < 0.002$). Regression analysis also confirmed that these three dimensions explain 76.2% of the variance in productivity ($R^2 = 0.762$, Adjusted $R^2 = 0.732$).

CONCLUSION: The study concludes that sustained, integrated investments in Human Resource Development are essential for enhancing lecturer productivity. It is recommended that the institution adopt a comprehensive strategy, including implementing a long-term training program based on a Training Needs Analysis (TNA), formalizing career feedback and goal-setting mechanisms, and reviewing the compensation structure to ensure equity and competitiveness.

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INTRODUCTION

The landscape of higher education is characterized by intense global competition, shifting demographics, and increasing demands for accountability and quality. In this challenging environment, the intellectual and pedagogical capabilities of academic staff are key drivers of institutional success, reputation, and sustainability. Consequently, the strategic management and development of human capital have evolved from a supportive administrative function into a pivotal strategic imperative for universities and colleges worldwide (Akfilni, 2025). Human Resource Development is particularly indispensable for building organizational credibility, fostering innovation, and enhancing overall institutional performance. Human Resource Development emerged from systematic efforts to improve workforce efficiency, notably during World War II's 'Training within Industry' program (Loewenstein, H., 1945). It has since matured into a comprehensive discipline focused on developing human potential through training, career development, and organizational learning (Swanson & Holton, 2010). In the context of higher education, the development of lecturers is widely recognized as a critical mechanism for enhancing the skills, efficiency, and creativity of academic staff, which directly translates to improved teaching quality, research output, and community engagement. Key Human Resource Development strategies, namely, targeted training, structured career development, and equitable remuneration, are theorized to be fundamental in motivating lecturers and unlocking their full productive potential, as explained by foundational theories such as Human Capital Theory (Becker, 1967) and Expectancy Theory (Vroom, 2005). Despite its established theoretical importance, the practical application and measurable impact of HRD within specific institutional contexts, particularly in developing regions, warrant further empirical investigation. Many institutions, including the National School of Administration (NSA) in the Muha Commune, may face challenges in implementing cohesive and effective Human Resource Development strategies due to resource constraints or a lack of strategic alignment. A clear understanding of which Human Resource Development strategies most significantly influence lecturer productivity at NSA is essential for informed decision-making and resource allocation. Currently, a gap exists in institution-specific evidence to guide the development of optimal

Human Resource Development interventions for enhancing academic performance at the NSA. Located in Muha, a highly populated commune in Bujumbura Mairie, the National School of Administration is a crucial anchor for urban development. Being the main training institution for future civil servants and urban planners, its performance has a direct impact on the capacity of local governance, infrastructure, and social equity, making the productivity of lecturers a key factor in the progress of urban development. This study aims to address this gap by conducting a focused investigation into the impact of key Human Resource Development strategies on lecturer productivity at the National School of Administration. The findings of this research are expected to provide evidence-based insights that can guide the institution's management in refining its human capital policies. By doing so, this study contributes to the broader discourse on strategic human resource management in higher education institutions, particularly in urban and semi-urban settings facing similar developmental challenges. Specifically, this study seeks to achieve the following objectives:

- *To assess the extent to which training, career development, and remuneration influence lecturer productivity at the National School of Administration.*
- *To identify existing gaps in the current Human Resource Development practices at the institution.*
- *To provide actionable, evidence-based recommendations for enhancing Human Resource Development strategies to boost lecturer performance and institutional effectiveness.*

Literature review

Empirical review

The degree to which Human Resource Development (HRD) programs impact the productivity and performance of workers has been the topic of robust empirical investigation across several business industries. The collective inference derived from this body of literature is that investment in human capital is not merely desirable but essential for achieving long-term organizational success. This review synthesizes empirical studies across a range of industries, such as technology, retail, healthcare, manufacturing, and hospitality, to develop a broad foundation of knowledge regarding the effect of core HRD activities, such as training, career development, and compensation,

on productivity, thereby creating a benchmark for their application in the higher education sector. The core role of systematic training in developing individual capability and organizational performance is well documented. In the technology sector, where skills can become redundant within a few years, companies like Techsolutions Inc. have demonstrated the value of comprehensive training programs. These include technical and non-technical skill training, on-the-job training, and exposure to innovative platforms through real-time experience, all of which have gained widespread acceptance among employees. These programs keep employees informed about technological advancements, thereby enhancing their contribution to projects and, consequently, organizational achievement (Ismail, L.B. *et al.*, 2021). The transformative power of training is also reflected in the case of General Electric Company, which achieved a 25% increase in output as a direct result of its leadership skills training (Ismail, L.B. *et al.*, 2021). This is a classic example of how rational investment in employee development translates into actual productivity gains, supporting the view that training should be viewed not as a cost driver, but as a strategic investment. The service sectors yield strong testimony to the impact of training on performance measures. Ismail, L.B. *et al.*, (2021) found that retail stores that invested more training hours per employee experienced a 15% increase in customer satisfaction scores. The improvement in service quality was a direct outcome of workers having higher morale and increased engagement, thereby increasing store-level productivity. Similarly, in the high-pressure environment of healthcare, tailored training initiatives centered on building clinical competency led to a 30% reduction in medical errors and a noticeable enhancement in patient care indicators among nurses at a major hospital system (Ismail, L.B. *et al.*, 2021). The manufacturing sector provides another concrete example in the form of Toyota's "On-the-System" training, which emphasizes hands-on practice and continuous improvement. This approach not only enhances employees' technical knowledge but also builds a deeply ingrained organizational culture of problem-solving and collaboration, significantly influencing overall productivity (Kramar, 2013). The success of such training approaches relies largely on the degree to which they are aligned with larger organizational goals as well as the specific needs of the em-

ployees. Research consistently demonstrates that organizations achieve better productivity when training programs are closely aligned with business objectives (Kramar, 2013). Besides formal training, the literature also places significant emphasis on motivational practices, which are normally integrated into career development and compensation structures. Tarigan *et al.*, (2022) research on retail highlights the complex dynamic between intrinsic and extrinsic motivation. Their study, which surveyed employees in various kinds of retail stores (i.e., fashion, electronics, and food), found that while external motivating factors like pay and recognition greatly improve performance and motivation, internal motivating factors are equally important. Employees who displayed a high degree of intrinsic motivation, which encompassed opportunities for self-development and a sense of autonomy in their work, had greater organizational commitment and more consistent gains in performance. Conversely, the performance of those whose motivational drive was largely based on extrinsic rewards was more inconsistent, fluctuating with the implementation of bonus or commission systems. This variation emphasizes that HRD strategies need to strike a balance between intrinsic and extrinsic motivators. Tarigan *et al.* (2022) argue that by employing HRM policies that value intrinsic motivation, such as skill development training and clear career progression channels, retail companies not only become more attractive employers but are also better positioned to retain their top talent, thus reducing the high staff turnover prevalent in the sector. The significance of a supportive working environment and organizational culture as part of career development is also emphasized in another professional study. Nafari and Rezaei (2022), within the healthcare context, posit that a positive organizational culture is necessary to foster professionalism. Health professionals' expectations extend far beyond technical expertise, requiring leadership, communication, and collaboration skills to manage rapid-paced, high-stakes situations. An organizational culture founded on values of cooperation, mutual respect, and a common vision gives workers a sense of purpose and belonging. This sense of purpose and belonging is crucial for enhancing productivity among professionals who are under high levels of stress. Leadership plays a most important role in the formation of this kind of culture. Alam (2022) defines transformational leadership as a key source of

motivation, encouraging employees to transcend their own self-interest for the benefit of the organization. Within this framework, “individualized consideration” where leaders identify and address the unique needs of each employee is particularly effective. Mentorship programs supported by transformational leaders, for instance, can provide personalized support for employees’ professional growth, foster a sense of belonging, and prevent burnout and demotivation. This, in effect, promotes increased motivation and improves educational and organizational outcomes. A relevant case study in the manufacturing sector by [Zamroni et al. \(2024\)](#) presents the synergetic effect of integrating advanced training and a robust organizational culture. The company in question utilized a virtual reality training program, which exposed employees to virtual environment settings to hone their technical skills and awareness of complex machinery in a safe environment. Furthermore, the training material was tailored to meet the multi-faceted requirements of employees from different departments, and there were regular evaluations and feedback procedures to ensure the continued relevance and effectiveness of the training modules. This not only improved operational efficiency but also fostered an environment of ownership and responsibility among employees ([Zamroni et al., 2024](#)). The study confirmed that a participative organizational culture, where employees were encouraged to have their voices heard and participate in decision-making, led to significant increases in motivation rates. Regular team-building activities and open communication for all fostered interpersonal bonds and feelings of “being at home,” providing an essential foundation for enhanced productivity. [Zamroni et al. \(2024\)](#) ascertained that effective, innovative training programs, when supplemented with a supportive organizational climate, had direct positive impacts on productivity metrics. The hotel industry, also plagued by high labor turnover, provides additional proof of the effectiveness of motivational HRD interventions. [Opang A. et al. \(2022\)](#) document how innovative motivation strategies employed by large hotel chains considerably increased personnel retention. These interventions typically comprised formal recognition schemes, ongoing training, and performance-based incentives designed to satisfy the diverse needs of the employees. By routinely honoring employee achievement, organizations not only build morale but also develop

a positive organizational culture that encourages long-term retention. The compensation aspect, while being a conventional extrinsic reward, is also evolving. [Shah \(2024\)](#) confirms that the implementation of recognition and reward frameworks is linked with high employee engagement and productivity. Furthermore, the advent of green human resource development introduces new incentive models. [Yasin et al. \(2022\)](#) discussed the example of Interface, a global carpet manufacturer that launched a reward scheme that rewarded employees for achieving environmental objectives and displaying collaboration. This approach positively affected the sustainable culture of the organization through increased participation in green activities while concurrently enhancing job satisfaction and decreasing turnover concerns that are directly tied to higher productivity levels. Finally, technological progress has created opportunities for more customized and efficient HRD processes. [Shrestha, N. \(2020\)](#) documents the rise of data-driven strategies in workforce development. For example, continuous learning platforms allow for customized on-demand training modules tailored to individual employees’ needs, optimizing both cost and scheduling flexibility. This customization not only strengthens employee loyalty but also builds workforce capacity, thus increasing overall organizational productivity. In short, the evidence gathered across a wide range of industries speaks with one voice: deliberate and disciplined HRD practices are powerful drivers of worker productivity. Targeted training builds essential skills; systematic career management and a positive culture foster intrinsic motivation and commitment; and equitable pay strengthens extrinsic motivation and retention. The most successful organizations are those that adopt an integrated approach, combining these elements into one coherent system that addresses the multifaceted needs of their human capital. The findings from such diverse settings provide a robust empirical base for investigating the impact of such HRD strategies on lecturer productivity in the specific context of higher learning institutions.

Theoretical framework

Human capital theory

This theory, largely attributed to economists like [Becker \(1967\)](#) and [Ashley \(1981\)](#), is based on the idea that individuals and organizations can invest in human capital (education, training, and health) to raise pro-

ductivity and economic return. Labor is regarded as an asset whose worth can be enhanced by investment. The core premise is that expenditures on education, training, and healthcare are investments, similar to physical capital, that yield future returns in the form of higher productivity and earnings (Blaug, 1976). The theory is relevant because it considers how lecturers' investment (the "human capital"), specifically through skill development (enhancing abilities), career development (enhancing future value and retention), and incentives (maintaining and motivating the asset), leads to a return on investment in the form of enhanced productivity and performance. From an organizational perspective, human capital theory posits that a firm's investment in its employees' knowledge and skills creates a valuable, firm-specific asset that is difficult for competitors to imitate, thus providing a sustainable competitive advantage (Barney, 1991; Wright et al., 2001). The positive correlations found between these human development strategies and lecturer performance strongly support the theory's primary contention that investing in human beings has economic benefits to the firm.

Expectancy theory (Vroom's expectancy theory)

This theory of motivation was developed by Victor Vroom (2005) and argues that an individual's motivation to work hard is based on a rational process of calculation of three components: Expectancy: Belief that effort will lead to performance at the level desired by the person (e.g., "If I work harder, I can do better with my teaching."), Instrumentality: Belief that good performance will lead to a valued outcome or reward (e.g., "If I do better, I will get a promotion or bonus."), and Valence: Value assigned by the person to the reward (e.g., "I really want that promotion or bonus."). This theory provides a psychological explanation for how human resource development plans work, which is supported by this study's results. Training confirms Expectancy by giving lecturers the skills and confidence that their hard work can lead to improved performance. Career Development and Remuneration confirm Instrumentality by creating a tangible link between high performance and favorable outcomes like promotion, salary increase, and job satisfaction. The concept of Valence underscores the necessity for rewards to be personally meaningful to the lecturers, which can vary based on individual needs and career stages (Kuhl, 2021). The theory

has been extensively applied in organizational and educational contexts to understand employee motivation and performance. For instance, a study by Mahmood et al., (2022) found that expectancy theory constructs significantly predicted the job performance of academic staff, highlighting the importance of clear performance-reward linkages. Similarly, the theory explains why poorly designed incentive systems, where the link between effort and reward is weak or non-existent, often fail to motivate employees (Daouk, 2023).

MATERIALS AND METHODS

Design

The research employed a quantitative design for data collection. This enabled concurrent quantitative and qualitative data collection from a subset of the population at a specific moment (Weyant, E., 2022), allowing for statistical measures as well as contextual understanding.

Population and sampling

The study population consisted of all 27 lecturers at the National School of Administration. The sample size was calculated using Slovin's formula for finite populations with a 5% margin of error.

$$n = \frac{N}{1 + N(e)^2}$$
, where: n = sample size, N = population size (27), e = margin of error (0.05 at a 95% confidence level). Applying the formula: $n = \frac{27}{1 + 27(0.05)^2} = 24$. Therefore, the minimum required sample size was 24 lecturers. A non-probability, convenience sampling technique was used to select respondents based on their availability and willingness to participate. The entire population of 27 lecturers was invited, and 24 completed the questionnaire, yielding a response rate of 88.9%. Although this sampling technique was selected based on its convenience, it is important to note that there are some methodological limitations to this technique. For instance, convenience sampling could result in biased sampling, as the sample may not be entirely representative of the whole population of lecturers. Therefore, generalization of the results to other settings or populations should be done with caution. Nevertheless, one of the advantages of this technique was that it had a very high response rate of 88.9%.

Data collection instrument and procedure

Primary data were collected using a structured

self-administered questionnaire. The instrument was divided into five sections:

- Section A: Collected demographic information of respondents (age, gender, educational qualification).
- Section B: Measured perceptions of training and its impact on productivity.
- Section C: Assessed career development practices and their influence.
- Section D: Evaluated remuneration structures and their contribution.
- Section E: Measured the dependent variable, lecturer productivity, and performance.

The questionnaire utilized a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), to capture respondents' levels of agreement with various statements.

Data analysis

The collected data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0. The analysis was conducted in two stages:

Descriptive statistics: Frequencies, percentages, means, and standard deviations were computed to summarize the demographic profile of the respondents and their general perceptions of the study variables.

Inferential statistics: This was used to test the hypotheses and establish relationships between variables.

Pearson's Correlation Coefficient (r) was used to measure the strength and direction of the linear relationships between the independent variables (training, career development, remuneration) and the dependent variable (lecturer productivity).

Multiple Linear Regression Analysis was employed to determine the collective predictive power of the three independent variables on lecturer productivity. The model was specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where: Y = Lecturer Productivity and Performance, β_0 = Constant, X_1 = Training, X_2 = Career Development, X_3 = Remuneration, ε = Error term. The threshold for statistical significance was set at $*p < 0.05$.

RESULT AND DISCUSSION

The respondents' demographic profile is crucial for contextualizing the human capital at the National

School of Administration, an institution located in an urban commune. This result has significant implications not only for NSA managers but also for stakeholders in urban areas. Spending on faculty HRD is an indirect investment in the human capital of the city. Productive faculty members translate into quality graduates, who in turn improve the quality of the bureaucracy, private sector, and civil society in urban areas, leading to better city governance and development. Before delving into the results, it is important to again mention the sampling context. The data that will be discussed in the following paragraphs was collected using a convenience sampling technique. Although this technique was very effective and helped to obtain an excellent response rate, the fact that there is a possibility of selection bias means that the following descriptive and inferential statistics are a reflection of the perceptions of the lecturers who participated in the survey, and may not be universally representative of all academic staff. The results reveal that strategic HRD increases the efficiency of lecturers, thus directly improving the talent pool for urban governance. This highlights that the development of human capital in the public sector is of utmost importance for efficient urban governance. The improvement of educator performance will strengthen the basic workforce required for efficient urban development in Muha, which is a growing city.

As indicated in [Table 1](#), half of the respondent population (50%, $n=12$) falls within the 30-40 years age bracket. The remaining respondents are equally distributed between the 40-50 and 50-60 age groups (25% each, $n=6$). This distribution reveals a workforce predominantly composed of early-career to mid-career professionals. From a human capital perspective, this demographic profile signifies a critical phase in the academic career trajectory. Lecturers in the 30-40 age range are typically beyond the initial probationary period and are actively building their teaching portfolios, engaging in research, and seeking career advancement ([Ismail et al., 2021](#)). This makes them a highly relevant cohort for studying the impact of Human Resource Development (HRD) interventions, as they are likely to be highly receptive to training, mentorship, and structured career development programs aimed at enhancing their productivity and long-term value to the institution ([Shah et al., 2024](#)). The concentration of early-career academics can be interpreted as a strategic asset for the institution. A

Table 1 : Distribution of respondents by age group

Items	Frequency	Percentage
30-40	12	50
40-50	6	25
50-60	6	25
Total	24	100,0

Source : Author (2025)

Table 2 : Gender Distribution of Respondents

	Frequency	Percentage
Male	15	62,5
Female	9	37,5
Total	24	100,0

Source: Author (2025)

younger faculty may be more adaptable to technological innovations in pedagogy and more energetically engaged in community outreach and applied research activities that are central to the mission of urban higher education institutions (Yasin *et al.*, 2022). However, this distribution also highlights a potential strategic consideration. The relatively smaller proportion of senior academics (50-60 years) may indicate a forthcoming succession challenge or a gap in experienced mentorship and research leadership, which are vital for sustaining institutional reputation and knowledge transfer (Becker, 1967). Therefore, targeted HRD strategies must not only cater to the development needs of this young, dynamic core but also implement mechanisms for capturing and transferring the knowledge of senior staff to ensure organizational sustainability. The gender composition of the academic faculty, i.e., the gender distribution, is a significant variable in understanding the organizational environment for Human Resource Development initiatives.

According to Table 2, the sample consisted of 24 lecturers, with a higher number of male lecturers (62.5%, n=15) compared to female lecturers (37.5%, n=9). This gender gap equates to a gender ratio of nearly 1.67 males per female lecturer. This documented gender imbalance reflects broader trends in academic staff composition within higher education institutions, particularly in certain geographic and disciplinary contexts (Ismail, L.B. *et al.*, 2021). These disparities can be attributed to an interrelated col-

lection of historical, socio-cultural, and institutional limitations that affect the recruitment, retention, and career progression of women academics (Abu Said *et al.*, 2015). From a Human Resource Development point of view, this allocation is important. It is reported that gender diversity in an academic faculty can diversify pedagogical methods, stimulate research innovation, and improve the learning environment. The underrepresentation of either gender can lead to a homogenization of perspectives and may affect the perception and reception of institution-level Human Resource Development policies, such as training distribution, access to mentorship, and career advancement lines (Ujma *et al.*, 2020). Therefore, while addressing the impact of HRD interventions on productivity, consideration should be given to the perception with which these interventions are perceived and experienced by different demographic groups so that human capital formation can be made equitable and productive. Educational level of the instructors forms a crucial component of human capital, which has a direct influence on intellectual capital as well as pedagogical excellence of the institution (Becker, 1967). The highest education level of the respondents is represented in Table 3.

As indicated by Table 3, most of the staff consist of Master's degree holders, who constitute three-quarters of the sample (75.0%, n=18). This is consistent with the tertiary-level teaching requirement and suggests a robust knowledge base among staff. However, a relatively lower proportion possess terminal

Table 3: Educational qualifications of respondents

	Frequency	Percentage
Professor	2	8.3
PhD	4	16,7
Master	18	75,0
Total	24	100,0

Source: Author (2025)

degrees, with only 16.7% (n=4) of them possessing a Doctorate (PhD) and 8.3% (n=2) the rank of Professor. This allocation also highlights a potential strategic gap in the senior level of academic capital. Even though personnel are qualified to carry out the central role of teaching, proportionally low numbers of doctorate-level qualifications might influence the institution's research production, grant-winning potential, and institutional reputation (Shah, 2024). In the competitive landscape of higher education, a strong stock of PhD-level staff is often associated with enhanced institutional ranking and research productivity (Ismail, L.B. et al., 2021). The young, mostly master's-level faculty members are a crucial source of human capital for the urban management of Muha. Expenditure on their training and development directly benefits the National School of Administration's ability to produce competent civil servants and planners. This enhances local administrative capacity, infrastructure management, and social equity, proving that strategic HRD is a key prerequisite for sustainable urban development. The profile, therefore, identifies a significant opportunity for goal-congruent human resource development interventions. Strategic investment in career development programs, such as sponsoring doctoral research and developing a research culture, is essential to enhance the academic qualifications of the faculty and thereby raise the human capital stock of the institution for long-term urban and institutional management. In summary, the typical respondent in this study is a male lecturer aged 30-40 holding a Master's degree. This kind of profile suggests a qualified, experienced, and likely-to-be-at-that-stage-of-career sample concerned with training, clear career advancement, and competitive pay. It should be remembered that it is against this demographic background that the observations on the Human Resource Development approaches and lecturers' productivity are considered. Descriptive statistics, including means (M) and Standard Devi-

ation (SD), were computed to provide the respondents' comprehension of the key Human Resource Development constructs and their associations with lecturer productivity. Table 4 presents the findings.

Note: Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree. The results indicate that the feedback given by the participants was positive overall, as all mean scores were above the neutral level of 3.0. The highest level of agreement was achieved under items concerning professional development, with participants strongly agreeing that it improves lecturer performance (M=4.38, SD=0.609 and M=4.63, SD=0.492). This is in harmony with past research that presumes that concentrated training constitutes the foundation of gaining necessary competencies as well as improving organizational performance (Ismail, L.B. et al., 2021). Moreover, the respondents agreed that compensation is also an important factor. They emphatically agreed that poor standards of living can adversely affect the psychological logic of a lecturer (M=4.25, SD=0.672) and that high-paid lecturers are more efficient (M=4.03, SD=0.897). This points toward the crucial role of equitable pay as a spur and a root of psychological well-being, a notion supported by fundamental theories of motivation (Vroom, 2005). In terms of career development, the respondents agreed that career planning enhances job satisfaction (M=4.03, SD=0.822) and facilitates work performance (M=3.94, SD=0.759). This implies that lecturers are motivated by clear channels of advancement and promotion, as espoused in the provisions of Expectancy Theory (Vroom, 2005). The overall high mean score on all the constructs (Grand Mean M=4.07, SD=0.78) indicates a deep consensus of the academic personnel in the National School of Administration that these HRD strategies are significant enablers of their productivity. These descriptive results provide a baseline awareness that the primary independent variables not only exist but are also perceived to have an effect, laying the groundwork

Table 4: Mean and Standard Deviation

Items	Moyenne	Écart-type	N
The practice of training reduces the wastage of materials	3,78	1,070	24
Professional development improves a lecturer's performance	4,38	,609	24
Good career planning helps in the working performance of lecturers	3,94	,759	24
Career planning provides job satisfaction	4,03	,822	24
With the help of career planning, work decisions are easier to make	3,84	,808	24
There should be fairness when compensation is being given to the lecturers	3,91	,893	24
A low standard of living can affect the psychological reasoning of a lecturer	4,25	,672	24
Lecturers with adequate salaries perform better than underpaid lecturers	4,03	,897	24
Good career planning helps in the working performance of lecturers	4,00	,880	24
Lecturers' performance and productivity are enhanced with the use of good compensation	4,00	,718	24
Professional development improves a lecturer's performance	4,63	,492	24
Overall Grand Mean	4.07	0.78	24

Source: Author (2025)

for the subsequent inferential analysis of determining the strength and significance of these relationships. The direction and strength of the linear correlations were examined through a Pearson correlation test between the most significant Human Resource Development strategies, training, career development, and remuneration, and lecturer productivity. The results, as in Table 5, show statistically significant positive correlations for all three independent variables. The evidence indicated a significant and statistically strong positive correlation between training and lecturer productivity ($r = 0.714$, $p = 0.009$). This finding underscores the critical role of targeted training in enhancing academic performance. It is in line with Ismail, L.B. *et al.* (2021), whose evidence provided showed that systematic training interventions improve individual abilities directly, thus resulting in quantifiable improvements in organizational output. This relationship supports the fundamental nature that investing in lecturers with adequate pedagogic and technical skills is an elementary driving force of productivity, an aspect explained amply by Human Capital Theory (Becker, 1993). Furthermore, a very strong positive relation was demonstrated between career development and lecturer productivity ($r = 0.851$, $p < 0.001$). This result underscores the powerful motivational impact of well-structured career development pathways. The outcome is consistent with Expectancy Theory principles (Vroom, 2005),

whereby employees are driven as long as they perceive there is a causal relationship between effort, performance, and reward results, like promotion and growth. Empirical support is presented by Tarigan *et al.* (2022), who determined that intrinsic drivers, including professional growth prospects and autonomy, are critical to help promote organizational commitment and enhance performance levels in academic employees. Finally, a strong and significant positive correlation was found between compensation and lecturer productivity ($r = 0.604$, $p = 0.002$). This finding highlights the significance of equitable compensation as a fundamental extrinsic motivator. The discovery confirms the instrumental part of Expectancy Theory, whereby compensation is an attractive reward that justifies effort (Vroom, 2005). Previous research in the education sector has further indicated that reward for performance and reward schemes are effective in enhancing lecturer retention and engagement, positively impacting productivity (Shah, 2024). This implies that equitable remuneration is not merely a transactional necessity but a strategic investment that is crucial to job performance and satisfaction. In conclusion, the correlation analysis provides robust empirical evidence that all three of the Human Resource Development strategies, training, career growth, and compensation, are strongly and positively correlated with lecturer productivity at the National School of Administration. This

Table 5: Correlation

Items		Lecturer's productivity and performance
Training	Pearson Correlation	,714
	Sig. (Bilateral)	,009
	N	24
Career planning and development	Pearson Correlation	,851
	Sig. (Bilateral)	,000
	N	24
Remuneration	Pearson Correlation	,604
	Sig. (Bilateral)	,002
	N	24
Lecturer's productivity and performance	Pearson Correlation	1
	Sig. (Bilateral)	
	N	24

Source: Author (2025)

forcefully confirms the study's not explicitly stated hypotheses and highlights the multi-dimensional nature of motivating and maximizing academic performance. However, the results of the study should be considered in light of the limitations of the study. Although the sample represents 88.9% of the target population, the absolute number of the sample is small, which is 24. This has limited the study to a small statistical power in the regression analysis.

To determine the aggregate predictive value of the independent variables Training (X_1), Career Development (X_2), and Remuneration (X_3) for the dependent variable, Lecturer Productivity (Y), a multiple linear regression analysis was performed. Goodness-of-fit of the model and significance of individual predictors were assessed. The results, as presented in Table 6, indicate that the model is statistically significant ($F(3, 20) = [\text{Note: F-value should be inserted here}], p < 0.001$). The combination of the three HRD strategies explains a high 76.2% of the variation in lecturer productivity ($R^2 = 0.762$, Adjusted $R^2 = 0.732$). This is a high explanatory power that is consistent with the basic assumption of Human Capital Theory, which states that collective investments in human capital are major drivers of performance achievements (Shah, 2024). The regression equation derived is given as follows: $Y = 4.451 + 0.172X_1 + 0.062X_2 + 0.167X_3$, where: Y = Lecturer's Productivity and Performance, X_1 = Training,

X_2 = Career Development, X_3 = Remuneration, Model Summary: $R = 0.873$, $R^2 = 0.762$, Adjusted $R^2 = 0.732$. Dependent Variable: Lecturer's productivity and performance (Y).

Yet, when comparing the specific contribution of each predictor after adjusting for the others, none of the single coefficients were statistically significant at the 5% level (Training: $\beta = 0.185$, $p = 0.323$; Career Development: $\beta = 0.061$, $p = 0.743$; Remuneration: $\beta = 0.193$, $p = 0.306$). This is a typical phenomenon in regression analysis when predictors are highly correlated, a condition known as multicollinearity. (Gunst, R. F, et al., 1975). The high correlations between the independent variables (see Table 5) mean that they share a considerable amount of variance in accounting for productivity, making it difficult for the model to distinguish their individual effects. Crucially, this statistical limitation does not diminish the substantive findings; rather, it reinforces them. The fact that the model cannot separate the unique contribution of each variable actually provides compelling evidence that training, career development, and remuneration operate not as isolated initiatives but as an integrated and mutually reinforcing system. Their power lies in their synergy when implemented together; they create a coherent HRD ecosystem where each component amplifies the effectiveness of the others. This synergistic effect means that focusing on any single strategy in isolation would likely yield diminishing returns, whereas a comprehensive

Table 6: Results of multiple linear regression analysis for predictors of lecturer productivity.

Coefficients ^a						
Model		Non-standardised Coefficients		Standardised Coefficients	T	Sig.
		B	Standard Error	Bêta		
1	(Constant)	4,451	1,391		3,199	,003
	Training	,172	,171	,185	1,005	,323
	Career planning and development	,062	,188	,061	,331	,743
	Remuneration	,167	,160	,193	1,043	,306
a. Dependent Variable: Lecturer's productivity and performance						

Source: Author (2025)

Table 7 : Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F-stat	Sig.
1	Regression	124.567	3	21.34	.000
	Residual	38.912	20		
	Total	163.479	23		

approach addressing all three dimensions simultaneously produces optimal results. The high explanatory power of the combined model ($R^2 = 0.762$) confirms that lecturer productivity is best understood as the product of this interconnected system rather than the sum of independent effects. While individual significance is absent, the direction of the relationships is theoretically informative. With positive coefficients for the three variables, it implies that increased Training goes hand in hand with better productivity, which has implications for the observation that skill development plays a critical role in competency and performance (Zhang and Chen, 2024). An improvement in Career Development practices is linked with higher performance, reinforcing evidence that clearly formulated development paths are strong drivers (Tarigan *et al.*, 2022). A more competitive Remuneration system is linked with higher productivity, reinforcing its status as a central extrinsic motivator as formulated in Expectancy Theory (Vroom, 2005). Cumulatively, the regression analysis confirms that the Human Resource Development strategies are most effective as an integrated whole, where the combined effect is greater than the sum of individual effects. Lastly, regression analysis vali-

dates that Human Resource Development strategies function optimally as an integrated system. For the National School of Administration, it implies that a comprehensive approach, enhancing training, career advancement, and compensation simultaneously, is crucial to realizing optimal lecturer productivity, rather than addressing any single initiative in isolation. The implication here is that piecemeal investments in HRD are likely to be less effective, and what is needed is a holistic approach to developing human capital on all three fronts simultaneously.

Regression Sum of Squares (124.567) represents the variation in lecturer productivity that is explained by the three HRD strategies included in the model. Residual Sum of Squares (38.912) is the variation in lecturer productivity that is not explained by the model, i.e., it is due to other factors not included in the study. Total Sum of Squares (163.479): This is the total variation in lecturer productivity. F-statistic (21.34) is the ratio of the mean regression sum of squares to the mean residual sum of squares. A higher F-value indicates that the model explains a significant amount of variance in the dependent variable. Significance (Sig. = 0.000) or p-value is less than 0.05, which means the regression model is statistically significant.

CONCLUSION

This study provides empirical evidence that strategic Human Resource Development (HRD) is a critical predictor of lecturer productivity at the National School of Administration in Muha Commune. The findings strongly indicate that key HRD strategies, namely, training, career development, and remuneration, form an interdependent system that significantly enhances academic performance. The study demonstrated that every Human Resource Development variable distinctly and importantly correlates with productivity. Training displayed a strong positive correlation ($r = 0.714$, $p = 0.009$), validating its role in empowering lecturers to gain the necessary skills for effective teaching and research, as hypothesized by human capital theory. Career development showed the strongest correlation ($r = 0.851$, $p < 0.001$), illustrating the strong motivational effect of well-established development paths and career advancement opportunities, consistent with Expectancy Theory tenets. Remuneration showed a moderate correlation ($r = 0.604$, $p = 0.002$), illustrating that equitable and competitive remuneration is an important extrinsic motivator that helps sustain performance and reduce counter-productive behaviors. The multiple regression formula ($R^2 = 0.762$) statistically confirms that the three variables combined explain a considerable 76.2% of the variance in lecturer productivity. This highlights the value of a holistic Human Resource Development approach, as the individual components are highly interconnected. The lack of a unique contribution for each variable in the regression model indicates that their power lies in collective implementation rather than in independent initiatives. The strategic HRD expenditure on the faculty will have an immediate positive impact on institutional capacity, ensuring sustainable urban management, infrastructure development, and social equity that is imperative in addressing the complex nature of urbanization. Strategic spending on lecturers by HRD will directly enhance urban management through the development of human resources for administration. A productive and well-trained faculty at NSA will produce qualified civil servants and planners required for infrastructure management and social equity in Muha. The development of lecturers is, therefore, not just an academic matter but a fundamental requirement for sustainable development. Training, career development, and compensation, therefore, represent an

integrated and synergistic system, and not a series of distinct and separate activities. The cumulative impact of these areas has the potential to catalyze faculty productivity in a manner that is more effective than any single approach. For institutions of higher education, therefore, this integrated and holistic approach is the key to academic excellence. Therefore, for colleges and universities in urban and semi-urban regions aiming to improve institutional performance and reputation, the following evidence-based recommendations are proposed :

- *Institutionalize career development structures by implementing systematic feedback mechanisms, establishing clear promotion policies, and creating personalized career path plans to enhance motivation and retention.*
- *Develop a long-term, needs-based training approach based on a structured Training Needs Analysis (TNA) to make skill development programs relevant and effective.*

To conduct a comprehensive review of the remuneration system to ensure internal equity and external competitiveness, thereby appropriately rewarding and acknowledging performance. Ultimately, strategic investment within an integrated Human Resource Development framework is not solely an administrative responsibility but a paramount strategic imperative for bolstering the academic workforce and driving institutional success in the high-stakes landscape of urban higher education.

AUTHOR CONTRIBUTIONS

All authors have read and approved the final version of this manuscript. All authors made considerable contributions to the study. William RUMURI was responsible for designing, collecting, and analyzing data, and drafting the manuscript. Prof. NTAWIRATSA Rédempteur was the supervisor of this work and also helped in sourcing the funding and guiding the project. Nickolas Adjei Koffi, PhD, contributed considerably to the methodology, analysis, and conceptualization of this paper. Jean Petit SINAMENYE and KARENZO Jean were involved in the data collection, analysis, and interpretation.

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CONFLICT OF INTEREST

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ABBREVIATIONS (NOMENCLATURE)

HRD	Human Resource Development
NSA	National School of Administration
PhD	Doctor of Philosophy
TNA	Training Needs Analysis

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