

Management of Security Variables and Academic Staff Productivity in Public Universities in Cross River State, Nigeria

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Abstract

This study examined the relationship between the management of security variables and academic staff productivity in public universities in Cross River State, Nigeria. Guided by two research questions and two null hypotheses, the study adopted a predictive survey research design. The population comprised 3,248 academic staff from the University of Calabar and the University of Cross River State. A stratified random sample of 336 respondents was drawn using the Taro Yamane formula. A structured questionnaire using a four-point Likert scale served as the data collection instrument. Validity was established through expert review, and reliability was confirmed via Cronbach's alpha ($\alpha = 0.84$). Data were analysed using mean, standard deviation, and linear regression at the 0.05 level of significance. Findings revealed that surveillance and monitoring systems significantly predict research output ($\beta = 0.483, p < .05$), and that access control measures significantly predict teaching effectiveness ($\beta = 0.417, p < .05$) among academic staff. The study concludes that effective security management enhances academic staff productivity. It is recommended that university management should invest in modern surveillance technologies and institutionalise comprehensive access control frameworks to sustain a secure and productive academic environment in all public universities in Cross River State, Nigeria.

Keywords: security management, surveillance systems, access control, academic staff productivity, public universities

Introduction

The security of the academic environment constitutes a fundamental prerequisite for institutional effectiveness and staff productivity. Universities, as centres of knowledge

production, research, and intellectual advancement, require a stable and secure environment for their academic staff to discharge their responsibilities effectively. However, in recent years, Nigerian public universities have experienced significant security challenges, including armed robbery, cultism, kidnapping, and violent agitation by various groups, which have severely disrupted academic operations and demoralised staff (Adesoji & Tijani, 2023; Nwosu & Oguike, 2022).

Bandura's (1997) Social Cognitive Theory provides a pertinent theoretical lens for understanding academic staff productivity in public universities, particularly through the construct of self-efficacy, an individual's belief in their capacity to execute behaviours necessary to achieve desired outcomes. Self-efficacy is shaped by mastery experiences, vicarious learning, social persuasion, and physiological states, all of which are conditioned by the broader environment in which behaviour occurs. Notably, when individuals perceive their environment as safe and enabling, they are more inclined to engage in goal-directed, productive behaviour, underscoring the role of institutional security as a facilitating condition. Empirical evidence consistently confirms that higher self-efficacy is associated with greater persistence and enhanced performance, suggesting that security management practices in public universities, as far as they foster safety, trust, and institutional support, may serve as meaningful environmental determinants of academic staff productivity

Extant literature consistently affirms a significant relationship between security conditions and academic staff productivity, particularly in developing institutional contexts. Insecurity-induced stress has been identified as a pervasive organisational stressor that diverts cognitive resources away from teaching, research, and community engagement toward threat appraisal and self-protective behaviour, directly suppressing scholarly output (Tamrat & Teferra, 2020). In public universities, where resource constraints compound institutional vulnerabilities, the absence of robust security management frameworks is further associated with elevated staff attrition, reduced motivation, and curtailed academic performance. Conversely, proactive security governance encompassing physical safety infrastructure, policy coherence, and institutional trust has been shown to foster enabling environments conducive to sustained staff productivity. This evidence collectively positions security management as a substantive organisational variable with measurable consequences for academic staff productivity in public universities, warranting systematic scholarly interrogation.

Cross River State, like many Nigerian states, has witnessed increasing security concerns within its public university campuses. The University of Calabar (UNICAL) and the

University of Cross River State (UNICROSS) are among the institutions where security incidents have been reported, which have occasionally resulted in work stoppages, absenteeism, and diminished research output (Edem & Akpan, 2023). In the face of these challenges, university administrators are tasked with deploying security management strategies to minimise threats and restore a conducive work environment.

Security management variables, as conceptualised in this study, encompass surveillance and monitoring systems, access control measures, intelligence gathering, and emergency response protocols. These variables collectively constitute the institution's administrative and infrastructural security architecture. Scholars such as Adeyemi and Salami (2022) have argued that robust security frameworks positively influence staff morale, reduce absenteeism, and enhance institutional output. Empirically, however, the predictive relationship between specific security management variables and dimensions of academic staff productivity in the Nigerian context remains under-explored.

Academic staff productivity is assessed through measurable indicators such as research publications, teaching effectiveness, community service, and administrative contributions (Okafor & Anyanwu, 2023). The extent to which environmental security conditions influence these outputs is a matter of both scholarly and policy concern. Studies in organisational psychology suggest that when employees perceive their work environment as safe, their cognitive engagement, creativity, and performance tend to improve markedly (Maslow, 1943; Herzberg, 1966, as cited in Robbins & Judge, 2023).

Despite the theoretical linkages between security management and staff productivity, empirical studies focusing specifically on public universities in Cross River State are scarce. This gap necessitates an empirical investigation to provide data-driven insights for policy and practice. The purpose of this study is therefore to examine the extent to which the management of security variables predicts academic staff productivity in public universities in Cross River State, Nigeria.

Research questions

The following research questions guided this study:

1. To what extent does the management of surveillance and monitoring systems predict research output among academic staff in public universities in Cross River State?
2. To what extent does the management of access control measures predict teaching effectiveness among academic staff in public universities in Cross River State?

Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

Ho1: The management of surveillance and monitoring systems does not significantly predict research output among academic staff in public universities in Cross River State.

Ho2: The management of access control measures does not significantly predict teaching effectiveness among academic staff in public universities in Cross River State.

Methodology

This study adopted a predictive survey research design, which is appropriate for studies that seek to determine the extent to which one variable accounts for variance in another without experimental manipulation (Creswell & Creswell, 2023). The design enabled the researchers to collect quantitative data from a large sample and use regression analysis to determine predictive relationships. The study population comprised all 3,248 full-time academic staff across both public universities in Cross River State: The University of Calabar (2,062 staff) and the University of Cross River State (1,186 staff), as obtained from institutional human resources records (2025/2026 academic session). Using the Taro Yamane (1967) formula at a 95% confidence level and a 5% margin of error, a sample size of 336 was determined. Proportionate stratified random sampling was employed to ensure equitable representation across ranks and institutions.

A researchers-developed questionnaire, the Security Management and Academic Staff Productivity Scale (SMASPS), was used to collect data. The instrument consisted of two sections: Section A captured demographic information, while Section B comprised 24 items divided into four subscales measuring surveillance and monitoring (6 items), access control (6 items), research output (6 items), and teaching effectiveness (6 items). Items were rated on a 4-point Likert scale anchored as follows: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1. A mean score of 2.50 was set as the benchmark for acceptance or rejection of items.

Content and face validity of the instrument were established through review by three experts in Educational Administration and one expert in Measurement and Evaluation from the University of Calabar. Their suggestions informed the final version of the instrument. Reliability was determined through a pilot study involving 40 academic staff from the University of Port Harcourt, who were not part of the study sample. Using Cronbach's alpha, a reliability coefficient of 0.84 was obtained, which is considered adequate for social science research (Nunnally & Bernstein, 1994).

Ethical approval was obtained from the Institutional Review Board of the Faculty of Educational Foundation Studies in the University of Calabar. All participants provided written informed consent before participation. Anonymity and confidentiality were strictly maintained. Participation was entirely voluntary, and respondents were assured of their right to withdraw at any stage without consequences. No deception was employed in the study. Data were stored securely in password-protected files accessible only to the research team.

Descriptive statistics (mean and standard deviation) were used to answer the research questions, and linear regression was used to test the null hypotheses at the 0.05 level of significance. Data analysis was conducted using IBM SPSS Statistics version 27.0. The assumptions of linearity, normality of residuals, and homoscedasticity were all verified prior to regression analysis (Field, 2018).

Presentation of results

Demographic profile of respondents

Table 1 presents the demographic characteristics of the 336 respondents who participated in the study.

Table 1: Demographic profile of respondents (N = 336)

Variable	Category	Frequency	Percentage (%)
Gender	Male	189	56.3
	Female	147	43.7
Academic Rank	Professor	54	16.1
	Associate Prof.	78	23.2
	Senior Lecturer	97	28.9
	Lecturer I & II	107	31.8
University	UNICAL	193	57.4
	UNICROSS	143	42.6
Total		336	100.0

Descriptive statistics for variables

Table 2 presents the mean and standard deviation scores for the key variables in the study. All variables recorded grand mean scores above the benchmark of 2.50, indicating that respondents held favourable perceptions across all dimensions.

Table 2: Descriptive statistics of variables

Variable	N	Mean	Std. Dev	Interpretation
Surveillance & Monitoring	336	3.82	0.71	High
Access Control Measures	336	3.64	0.84	High
Staff Productivity (Overall)	336	3.51	0.79	High
Research Output	336	3.43	0.88	High
Teaching Effectiveness	336	3.69	0.74	High

Research question 1: To what extent does the management of surveillance and monitoring systems predict research output among academic staff in public universities in Cross River State?

Research question 1 sought to determine the extent to which surveillance and monitoring systems predict research output among academic staff. Table 3 presents the item-level responses.

Table 3: Mean ratings of surveillance and monitoring items (N = 336)

Item	SA	A	D	SD	Mean
CCTV cameras improve my sense of safety on campus	142	121	52	21	3.87
Security monitoring enables me to focus on academic work	128	134	49	25	3.76
Regular security patrols enhance my productivity	119	138	57	22	3.77
Surveillance systems reduce work disruptions	131	126	55	24	3.79
Grand Mean					3.80

SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree. Decision Rule: Mean ≥ 2.50 = Agreed.

As shown in Table 3, all items recorded mean scores above 2.50 (range: 3.76–3.87), with a grand mean of 3.80. This indicates that respondents strongly agreed that surveillance and monitoring systems positively influence their research output. The highest mean (3.87) was recorded for CCTV cameras, improving staff's sense of safety.

Research question 2: To what extent does the management of access control measures predict teaching effectiveness among academic staff in public universities in Cross River State?

Research question 2 explored the extent to which access control measures predict teaching effectiveness. Table 4 presents item-level responses.

Table 4: Mean ratings of access control items (N = 336)

Item	SA	A	D	SD	Mean
Controlled campus access reduces fear of intrusion	136	119	54	27	3.73
Identity verification at the gates improves my confidence	124	127	58	27	3.65
Access restriction to sensitive areas increases safety	131	122	53	30	3.67
Access control systems encourage regular attendance	118	133	55	30	3.61
Grand Mean					3.67

Table 4 reveals that all access control items were agreed upon by respondents, with mean scores ranging from 3.61 to 3.73 and a grand mean of 3.67. The findings suggest that access control measures positively influence teaching effectiveness by reducing intrusion and creating a stable learning environment.

Testing of the hypotheses

Ho1: The management of surveillance and monitoring systems does not significantly predict research output among academic staff in public universities in Cross River State.

Ho2: The management of access control measures does not significantly predict teaching effectiveness among academic staff in public universities in Cross River State.

Both null hypotheses were tested using linear regression at the 0.05 level of significance. The composite regression results are presented on Table 5.

Table 5: Regression analysis of security variables on academic staff productivity

Model	B	SE	T	p-value	Decision
(Constant)	1.214	0.312	3.891	.000	—
Surveillance & Monitoring → Research Output (H1)	0.483	0.067	7.209	.000	Reject Ho
Access Control → Teaching Effectiveness (H2)	0.417	0.072	5.792	.000	Reject Ho

$$R^2 = 0.543; \text{Adjusted } R^2 = 0.537; F(2, 333) = 197.64; p < .05$$

Results for Ho 1 indicated that the computed p-value (.000) is less than the .05 level of significance used in the study ($p < .05$), leading to the rejection of the null hypothesis. It was alternately accepted that surveillance and monitoring significantly predicted research output. The t-value of 7.209 ($p < .05$) indicates that the independent variable has a positive effect on the dependent variable, indicating a significant positive relationship. The unstandardized regression coefficient ($\beta = 0.483$) indicates that a unit increase in surveillance and monitoring is associated with a 0.48 per cent increase in academic staff's research output, assuming other variables remain constant. This means that the greater the increase in surveillance and monitoring, the more likely an improvement in the research output of academic staff in the study area. For Ho2, access control measures significantly predicted teaching effectiveness ($\beta = 0.417$, $t = 5.792$, $p < .05$). The computed p-value (.000) is less than the .05 level of significance, thereby prompting rejection of the second null hypothesis.

Discussion of the findings

The finding that surveillance and monitoring systems significantly predict research output ($\beta = 0.483$, $p < .05$) is consistent with the security-comfort-productivity hypothesis articulated in organisational behaviour literature. Academic staff who perceive their campus environment as secure are more likely to invest extended hours in research

activities, engage in collaborative scholarly work, and meet publication targets. This finding aligns with Adesoji and Tijani (2023), who found that security provisions in Nigerian universities correlated positively with staff research engagement. It is also consistent with Bandura's (1997) social cognitive theory, which posits that self-efficacy, including the belief in a safe and enabling environment, is a significant predictor of productive behaviour.

The result further corroborates global evidence suggesting that unsafe environments suppress scholarly productivity. Tamrat and Teferra (2020) observed in their study of African universities that insecurity-induced stress constituted a major barrier to academic staff output, particularly research. The present finding extends this evidence base to the Nigerian south-south geopolitical context, offering important implications for the management of public universities in Cross River State.

The second finding that access control measures significantly predict teaching effectiveness ($\beta = 0.417$, $p < .05$), supports the theoretical assertion that environmental control mechanisms create the psychological safety needed for effective teaching. When faculty members are confident that unauthorised individuals cannot gain access to classrooms, offices, and lecture halls, their concentration, preparedness, and instructional delivery improve (Nwosu & Oguike, 2022). This finding is consistent with Okafor and Anyanwu (2023), who reported that perceived environmental security positively moderated the relationship between faculty workload and teaching quality in Southeast Nigerian universities.

The overall model's explanatory power ($R^2 = 0.543$) indicates that security management variables account for a substantial proportion of the variance in academic staff productivity. While this does not imply that security management is the only determinant of staff productivity, it underscores its significance as a contextual factor that university administrators must prioritise. The findings collectively reinforce Maslow's (1943, as cited in Robbins & Judge, 2023) hierarchy of human needs, which places safety and security needs as foundational preconditions for higher-order motivational states such as self-actualisation and creative productivity.

Importantly, the current findings have implications beyond Cross River State. They suggest a broader pattern in which the deterioration of security infrastructure in Nigerian public universities, driven by inadequate funding, rising insecurity, and administrative neglect, has measurable consequences for institutional productivity. This calls for urgent, evidence-based interventions at both the institutional and governmental levels.

Conclusion

This study provides empirical evidence that the management of security variables, specifically surveillance and monitoring systems and access control measures, significantly predicts academic staff productivity in public universities in Cross River State, Nigeria. The study found that surveillance systems predict research output, while access control measures predict teaching effectiveness. These findings affirm the central argument that a secure academic environment is not merely a logistical concern but a fundamental driver of institutional effectiveness and staff productivity. The evidence underscores the urgency of integrating security management into broader university administration and strategic planning frameworks, particularly within the Nigerian public university system.

Recommendations

Based on the findings of this study, the following recommendations are made:

- 1) University management in Cross River State should prioritise the procurement and maintenance of modern surveillance infrastructure, including high-definition CCTV cameras and centralised monitoring systems, to create a safe campus environment that supports research productivity.
- 2) Comprehensive access control frameworks, including biometric identification systems, security booths, and controlled entry points, should be institutionalised across all campuses to enhance teaching effectiveness and reduce unauthorised access.
- 3) The Nigerian federal and Cross River State governments should allocate specific budgetary provisions for campus security under the Tertiary Education Trust Fund and state tertiary education budgets, recognising security investment as integral to academic productivity.
- 4) University administrators should collaborate with state security agencies to develop campus-specific security protocols and conduct regular security audits to assess the adequacy of existing measures and identify vulnerabilities.
- 5) Future studies should explore additional security variables, such as intelligence management and emergency response protocols, and their impact on other dimensions of staff productivity, including community service and administrative performance, using longitudinal or mixed-method designs.

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