WORKING CONDITIONS, TRAINING, AND RESEARCH CULTURE AS PREDICTORS OF RESEARCH COMPETENCE AMONG LECTURERS IN PUBLIC UNIVERSITIES IN NIGERIA

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Abstract

This study examined the influence of working condition and training on research competence among lecturers in public universities in Nigeria, with research culture as a mediating variable. The study adopted a quantitative research design, utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS to analyze data collected from lecturers at the University of Ibadanand the University of Lagos, Nigeria. A structured questionnaire measured constructs of Working Condition, Training, Research Culture, and Research Competence. The structural model showed that training had a strong positive effect on research culture ($\beta = 0.542$, $p < 0.001$), and working condition moderately influenced research culture ($\beta = 0.370$, $p < 0.001$). Research culture, in turn, positively influenced research competence ($\beta = 0.282$, $p = 0.030$), while the direct effects of training on research competence were insignificant and working condition had a negative but significant effect ($\beta = -0.225$, $p = 0.023$). R^2 values indicated that training and working condition explained 68.3% of the variance in research culture but only 8.3% of research competence. Effect size (f^2) analysis confirmed the large impact of

training on research culture and the mediating role of research culture in enhancing research competence. The findings suggest that strengthening training programmes and fostering a supportive research cultureare critical for enhancing lecturers' research competence. Universities should also optimize working conditions to prevent negative impacts on research outcomes.

Keywords: Research culture, Research competence, Working condition, Lecturer, Federal Universities

Introduction

In contemporary society, universities are at the heart of knowledge creation, dissemination and application. Institutions of higher learning are required to contribute to national growth through teaching, research and community service. Of the three, research has risen in importance since it helps to fuel innovation, influence public policy and increase the world's stock of knowledge. Thus, the research capacity of university instructors has become a major determinant of the effectiveness and relevance of universities in the knowledge economy. Research competence refers to the knowledge, skills, and abilities necessary to conceptualise research problems, create appropriate procedures, analyse data, and convey findings through scholarly papers and other academic outputs (Creswell & Creswell, 2018). In the contemporary higher education systems, academic staff are required to engage in research activities that add to the institution's visibility and to the worldwide academic debate, besides their teaching commitments. Research competency is therefore a critical trait of university lecturers since it impacts their ability to produce quality research results, attract research funding and mentor students. The research capability of universities is highly dependent on the competency and productivity of their academic staff, (Adeleke (2021). Lecturers with great research capabilities are linked to the growth of scientific progress, interdisciplinary collaboration and the formulation of evidence-based policies.

However, there are a number of institutional and professional elements inside the university system which impact on the extent to which professors are able to develop and exhibit research competency. Among them, working conditions, training opportunities and institutional research culture have been reported as key predictors of research participation and productivity in academic staff. Working conditions is an important institutional aspect that might greatly affect the research competency of the lecturing staff. The working conditions are the physical, administrative and professional setting in which the lecturer carries out his/her academic obligations. These circumstances include task allocation, access to research facilities, availability of research funding, administrative assistance and institutional policies that support or inhibit research activity. Lecturers have favourable working conditions which allow them to have access to the resources and time necessary for effective research. According to Tettey (2006), academic staff at many African universities work under difficult conditions, which include large teaching loads and poor research infrastructure that often constrain their research productivity.

Training is another significant factor influencing research competency. Training is seen as structured opportunities for instructors to gain advanced research knowledge and methodological skills needed for scholarly investigation. Research training may include workshops on research methodology, statistical analysis, academic writing, preparation of funding proposals, and the use of new digital research tools (Mohammed, 2022). Continuous professional growth through training is particularly crucial in academia as research methods, analytical approaches and technology advances continue to evolve. Training programs provide opportunities for academics to enhance their research skills and adapt to new advancements in their fields. Adequate research training of lecturers enhances their ability to carry out rigorous studies, use proper analytical procedures and publish their findings in renowned academic publications. Training in research methodologies improves scholars' capacity to conduct valid studies and interpret research results accurately (Creswell & Creswell, 2018). Professional development programs also provide opportunity for faculty to interact

with other researchers, share ideas, and form networks that can be beneficial to their scholarship. Training is vital yet many lecturers in underdeveloped nations have limited access to professional development opportunities.

Beyond individual ability and institutional resources, the wider research culture in universities is equally vital in shaping the research competency of instructors. The term "research culture" denotes the collective beliefs, norms, attitudes, and practices of an academic institution that foster research participation and intellectual output (Mydin, 2021). It includes institutional expectations for research performance, availability of mentorship systems, collaborative research networks and recognition of research achievements. A robust research culture encourages the lecturers to look for novel research ideas, to engage in collaborative work with colleagues, and to make an active contribution to the progress of knowledge (Brew, 2001). Empirical studies have indicated that universities with favourable research cultures have better levels of research production among academic staff. Universities that nurture collaborative cultures of research, mentor early career academics and reward excellence in scholarship are more likely to have their lecturers build their research competency and keep their research engagement.

Research competency of university instructors is a prerequisite for knowledge growth, innovation and national development. Universities are supposed to develop new knowledge through rigorous research activities that solve societal concerns and guide policy decisions. However, there are worries on the level of research competency and productivity of academic professionals in many developing nations including Nigeria. The significance of research output at higher education institutions is expanding, yet there are still a number of constraints that impede academics from doing and disseminating research successfully. Poor working circumstances are among the primary obstacles facing academics in public universities, while other major issues include limited chances for research training and professional development. Furthermore, the research environment at certain universities may not be adequately conducive to doing research. Although the previous studies have focused on the

determinants of research productivity, little attention has been paid to the interaction between working conditions and training and their effects on research culture and the research competency of professors at Nigerian public universities. This information gap demands further inquiry into the mediating function of research culture in the association between working conditions, training and research competency. Hence this study tries to fill this vacuum by investigating these interactions among lecturers in University of Ibadan and University of Lagos.The aim of this study is to determine the influence of working condition, training, and research culture on research competency among lecturers in federal universities.

Hypothesis

There is no significant influence of working condition, training, and research culture on research competency among lecturers in federal universities.

Methods

This study utilised a quantitative research approach using descriptive survey research design. The descriptive survey approach was judged acceptable as the study aims to investigate the links between working conditions, training, research culture and research competency of teachers in public universities. The study also adopted a causal predictive design as it examines the predicted links between the independent factors (working environment and training), mediating variable (research culture) and dependent variable (research competency).

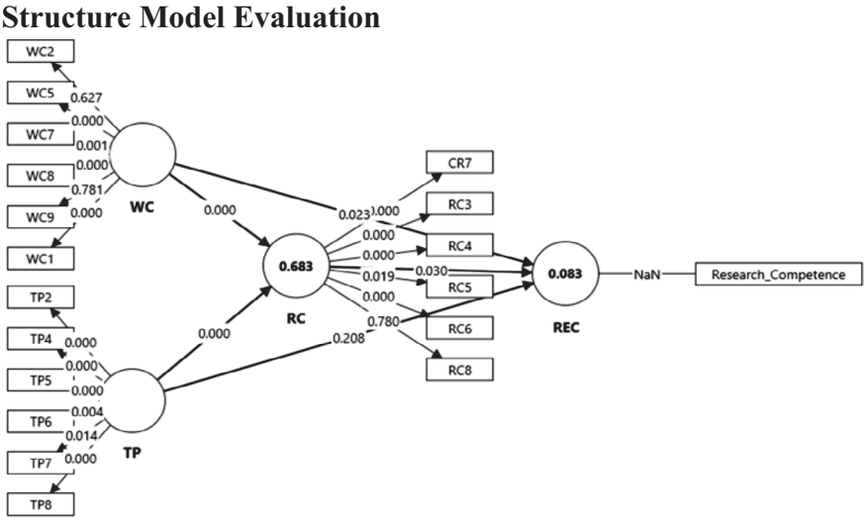
The study population was selected from lecturers in public universities, specifically, in University of Ibadan and University of Lagos. A sample of 173 lecturers were chosen for the study. the sample size was regarded sufficient to carry out PLS-SEM analysis because SmartPLS requires smaller sample sizes than covariance based structural equation modelling. Hair et al. (2022) proposed that sample sizes of 100 to 300 respondents are adequate for models of moderate complexity in PLS-SEM. The data for this study were gathered by a standardised questionnaire. Reliability was assessed using Cronbach's alpha and composite reliability (CR) values in SmartPLS. According

to Hair et al. (2022), adequate reliability levels are demonstrated by Cronbach's alpha and composite reliability scores of 0.70 or above. The reliability of all the scales were above 0.78. The data acquired for this study were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) by using SmartPLS software.

Results

Hypothesis: There is no significant influence of working condition, training, and research culture on research competency among lecturers in federal universities.

Structure Model Evaluation



Path coefficients to determine the strength and direction of relationships among variables.

Table 1: Structural Model Path Coefficients

	Original sample (O)	T statistics (|O/STDEV|)	P values	Decision
RC -> REC	0.282	2.171	0.030	Supported
TP -> RC	0.542	8.723	0.000	Supported
TP -> REC	0.143	1.260	0.208	Not
WC -> RC	0.370	4.700	0.000	Supported
WC -> REC	-0.225	2.274	0.023	Supported

The results of the structural model show the size, kind, and relevance of the links between the constructs. Research Culture (RC) has a substantial positive effect on Research competency (REC) ($\beta = 0.282$, $t = 2.171$, $p = 0.030$) indicating that a stronger research culture results in better research competency of lecturers. Training (TP) had a substantial positive impact on Research Culture ($\beta = 0.542$, $t = 8.723$, $p < 0.001$). This means better training opportunities lead to a supportive research culture. However, Training does not have a significant direct effect on Research Competence ($\beta = 0.143$, $t = 1.260$, $p = 0.208$), suggesting that the effect could be indirect, most probably through research culture as a mediating variable. Working Condition (WC) has a substantial positive effect on Research Culture ($\beta = 0.370$, $t = 4.700$, $p < 0.001$). This means that improved working conditions contribute to a favourable research culture. Interestingly, Working Condition has a negative but significant direct effect on Research Competence ($\beta = -0.225$, $t = 2.274$, $p = 0.023$). This indicates that although some aspects of the work environment enhance culture, they might also impede competence, possibly because of workload or stress factors.

Table 2: Coefficient of determination (R^2) to evaluate the explanatory power of the model.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
RC	0.683	0.692	0.046	14.863	0.000
REC	0.083	0.098	0.039	2.104	0.035

The coefficient of determination (R2) was used to assess the structural model's explanatory capacity. Research Culture (RC) showed a high R2 value of 0.683 meaning 68.3% of the variance of research culture among lecturers is explained by Training and Working Condition. The result indicates that the model has high predictive power for Research Culture. However, the value of R2 for Research Competence (REC) was low, with the value of 0.083, which means that only 8.3% of the variance in research competence was explained by Research Culture, Training and Working Condition. The link is statistically significant ($t = 2.104$, $p = 0.035$), but the low R^2 indicates that there may be additional characteristics not included in the model

that have a large influence on research competency.

Table 3: Effect size (f^2) to determine the impact of each predictor variable.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
RC -> REC	0.027	0.032	0.028	0.996	0.319
TP -> RC	0.560	0.579	0.158	3.547	0.000
TP -> REC	0.009	0.015	0.017	0.510	0.610
WC -> RC	0.260	0.292	0.149	1.746	0.081
WC -> REC	0.026	0.028	0.023	1.160	0.246

To determine the relative influence of each predictor variable on the endogenous constructs, the effect size (f2) was utilised. There is a large influence of Training (TP) on Research Culture (RC) (f 2 = 0.560, t = 3.547, $p < 0.001$), which means training is a strong determinant of research culture among lecturers. Working Condition (WC): The effect of WC on Research Culture is modest ($f^2 = 0.260$, t = 1.746, p = 0.081) and less strong but significant. Conversely, the impacts of Research Culture (RC) on Research Competence (REC) ($f^2 = 0.027$), Training on Research Competence ($f^2 = 0.009$) and Working Condition on Research Competence ($f^2 = 0.026$) are minor and statistically negligible ($p > 0.05$). These results reveal that although Training and Working Condition have significant impacts on the research culture, their direct impacts on research competence are minor. This indicates that Research Culture is most likely a mediating factor.

Discussions

The structural model findings indicate that Research Culture (RC) plays a central but partial role in explaining Research Competence (REC) among lecturers. Specifically, RC significantly predicts REC, suggesting that institutions with stronger research-supportive norms, collaboration, and scholarly expectations tend to enhance lecturers' competence in conducting research. This aligns with the view that institutional culture shapes academic productivity through shared values and research engagement structures (Mydin., 2021). Training (TP) emerged as a strong predictor of Research Culture, indicating that capacity-building initiatives, workshops, and professional

development activities substantially strengthen an institution's research environment. However, TP does not significantly influence research competence directly, implying that its effect is largely indirect and transmitted through research culture. This supports mediated learning assumptions in organizational development literature, where training improves outcomes mainly when embedded within enabling systems (Creswell & Creswell, 2018 Mohammed, 2022). Working condition (WC) also significantly influences Research Culture, suggesting that supportive infrastructure and institutional climate enhance scholarly engagement. Interestingly, WC has a negative direct effect on Research Competence, which may reflect work overload, administrative pressure, or stress-related constraints that reduce individual research productivity despite favourable institutional conditions (Adeleke, 2021). The findings suggest that Research Culture functions as a key intervening mechanism, although additional predictors are required to adequately explain Research Competence given the low R^2 value.

Conclusion

In conclusion, the study demonstrates that Research Culture is an important channel via which Training and Working Conditions influence Research Competence. Good training programs and a friendly work atmosphere boost the research culture, which in turn improves research performance. Instead, bad working conditions could negatively influence research competency directly, underlining that the need of tackling environmental and organisational difficulties within universities.

Recommendations

The findings lead to a number of recommendations. Universities should develop systematic and holistic training programmes to strengthen research skills and capabilities of the lecturers. There should also be a focus on enhancing the Research Culture through mentorship, recognition, collaboration opportunities and incentives to stimulate academic participation. To prevent negative impacts on research competency, it is crucial to improve working conditions, including minimising workload, providing enough resources, and

fostering work-life balance. Furthermore, future study should modify the measuring tools to remove weak indicators and include other characteristics such as motivation, support from leadership, or access to financing to better explain the differences in research competence.

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