# RESEARCH SKILLS AS PREDICTORS OF SELF-ASSESSMENT, CAREER EXPLORATION, AND GOAL SETTING OF OFFICE TECHNOLOGY AND MANAGEMENT LECTURERS IN POLYTECHNICS IN SOUTHEAST, NIGERIA

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## Abstract
This study examined research skills as predictors of self-assessment, career exploration, and goal setting among Office Technology and Management (OTM) lecturers in polytechnics in South-East Nigeria. The study was guided by two research questions and two hypotheses and adopted a predictive correlational research design. The population comprised 72 OTM lecturers from six federal and state-owned polytechnics in the region. Due to the manageable size of the population, a census approach was employed, and no sampling was conducted. Data was collected using two research-developed instruments: the Research Skills Survey (RSS). The instruments demonstrated high internal consistency, with Cronbach's alpha coefficients of 0.96 for the RSS and 0.83 for the CDQ. Data analysis was conducted using multiple regression. Research questions were addressed using unstandardized regression coefficients (B) and R change, while hypotheses were tested at the 0.05 level of significance using F-tests and t-tests of beta coefficients. The findings revealed that research skills significantly predict self-assessment, career exploration, and goal setting among OTM lecturers. This indicates that lecturers with stronger research competencies are more likely to engage in reflective practices, actively explore career opportunities, and set clear professional goals. Based on these findings, it was recommended that polytechnic management should implement continuous professional development programmes focused on enhancing research capacity, including training in research design, data analysis, academic writing, and grant acquisition.

**Keywords: Research Skills, Self-Assessment, Career Exploration, Technology, and Management.**

## Introduction

Research competence is widely recognized as a cornerstone of academic success, institutional visibility, and professional growth (Ezeani & Igwe, 2021; Mohammed, 2023). Within technical and vocational education, particularly in Office Technology and Management (OTM), research skills are indispensable not only for scholarly productivity but also for reflective practice and long-term career planning (Okoli & Emeh, 2022; Arikwandu, 2024). OTM lecturers in Nigerian polytechnics are expected to integrate teaching, research, and administrative responsibilities. However, empirical evidence indicates persistent gaps in their research competence, which constrain both professional advancement and institutional development (Nwankwo & Edeh, 2023; Eze & Agbo, 2023).

Research competence encompasses a cluster of interrelated skills: question formulation, literature review, methodology design, data collection, data analysis, and communication of findings (Aina, 2020; Okonkwo, 2021). Each of these skills forms part of a lecturer's intellectual toolkit and directly influences career development dimensions such as self-assessment, career exploration, and goal setting. Self-assessment refers to the ability of lecturers to evaluate their readiness for promotion or further study. It is strengthened by methodological and analytical proficiency, which enable objective evaluation of scholarly contributions (Oboh, 2022; Adebayo & Ojo, 2021). Conversely, weak competence can distort self-perceptions, leading to poor career decisions or stagnation (Eze & Okeke, 2022; Enemuo, 2021).

Career exploration is the process of identifying, testing, and pursuing professional pathways (Super, 1990; Uzochukwu & Oghenekohwo, 2021). In academia, this includes seeking roles such as external examiner, consultant, or researcher. Lecturers with strong literature review and data-handling skills are more likely to pursue collaborations, grants, and consultancy opportunities, thereby broadening their career horizons (Edeh & Nwosu, 2022; Eze & Nworgu, 2022; Iwuanyanwu, 2020). Yet, barriers such as inadequate funding, limited mentoring, and insufficient ICT resources often reduce the capacity to leverage these skills effectively (Arikwandu, 2024; Eze & Agbo, 2023).

Goal setting involves identifying specific, measurable, attainable, relevant, and time-bound objectives that guide career development (Locke & Latham, 2002; Okafor & Nwachukwu, 2021). In academic contexts, this includes publication targets, grant acquisition, and pedagogical innovation. Research competence enhances goal setting by providing the cognitive framework to translate aspirations into actionable plans. Analytical and reflective skills, for instance, enable lecturers to set realistic timelines and benchmarks, reinforcing persistence and motivation (Afolabi & Adebayo, 2020; Mohammed, 2023; Eze & Uche, 2019). Without these competencies, lecturers risk setting vague or unrealistic goals, undermining progress and institutional alignment (Azih, 2016; Enemuo, 2021).

The contextual realities of Nigerian polytechnics further moderate these relationships. Heavy teaching workloads, limited incentives, and inconsistent professional development programmes constrain research engagement (Nwankwo & Edeh, 2023; Eze & Uche, 2019). Institutional ownership also plays a role: public polytechnics often face bureaucratic hurdles despite access to government grants, while private institutions may offer flexibility but fewer

supports (Arikwandu, 2024; Oboh, 2022). These contextual factors highlight the need for targeted interventions to strengthen research capacity.

Existing scholarship has largely emphasized general productivity or student outcomes (Aina, 2020; Mohammed, 2023), with limited attention to the predictive influence of discrete research skills on career development dimensions such as self-assessment, career exploration, and goal setting (Eze & Nworgu, 2022; Iwuanyanwu, 2020). Few studies have disaggregated competence into specific skills to determine which are most influential (Okonkwo, 2021; Eze, 2020). Moreover, there is a scarcity of empirical evidence specific to OTM lecturers in South-East Nigerian polytechnics, despite their unique position at the intersection of business, technology, and management education (Azih, 2016; Enemuo, 2021). Addressing this gap provides actionable insights for policy, institutional support, and professional development.

**The following research questions were answered in the study:**

1. Which research skills predict self-assessment, career exploration, goal setting of OTM lecturers in polytechnics in South-East, Nigeria better?
2. What is the collective predictive influence of research skills on self-assessment, career exploration and goal setting of OTM lecturers in polytechnics in South-East, Nigeria?

**The following null hypotheses were tested at .05 level of significance:**

1. The research skills of OTM lecturers in polytechnics in South-East, Nigeria individually do not significantly predict self-assessment, career exploration, and goal setting of career development.
2. The collective predictive influence of research skills on self-assessment, career exploration, and goal setting of career development of OTM lecturers in polytechnics in South-East, Nigeria is not significant.

## Methods

The study adopted a predictive correlation research design. The population of the study comprised 72 OTM lecturers in six federal and state-owned polytechnics in South-East, Nigeria. The study used a census survey. Data for the study were collected using two structured questionnaires developed by the researcher titled "Research Skills Survey (RSS). The overall index for RSS was 0.96. Univariate outliers of the data were checked by examination of the boxplot value of each variable in the regression equation model. An examination of the boxplot of the scores suggests no potential outliers in the scores in any of the variables.

The assumption of absence of univariate and multivariate normality was also examined. Univariate normality was tested by calculating the skewness and kurtosis value of each variable. A skewness and kurtosis value that is less than 2.00 indicates that the assumption of normality has been met. The skewness statistics of the variables in this study are within the range of −.176 to .204 and kurtosis are within the range of -.244 to -1.207, all within the range of an absolute value below 2.0 suggesting evidence of normality. Multivariate normality was examined using Mardia test for Standardized Kurtosis. A Standardized Multivariate Kurtosis (Std-MK) -1.6179 was found. Therefore, the univariate and multivariate normality was met. To test if the assumption of absence of multicollinearity among the variables was violated, Variance Inflated Factor (VIF) and Tolerance (T) statistics were used. There was no presence of multicollinearity and singularity among the variables in the regression equation model.

Durbin Watson statistics was used to test if the assumption of independent errors was violated; the results showed that the value of Durbin Watson statistics is 2.266 less than 4 but greater than zero. Hence the assumption of independent error of observation was met. The assumption of normal distribution error was checked using histogram and normal P-P plot of standardized residuals. Histogram of standardized residuals shows that the assumption of normal distribution of error was met. Furthermore, the Normal P-P plot of standardized residuals data points was not completely off the line, but close. Hence, the errors were normally distributed. The scatter plot of standardized predicted values shows that the data met the assumptions of homogeneity of variance and linearity as the data were distributed above zero in both dimensions and do not show any pattern.

The data collected were analysed using multiple regression. Research questions were answered using Unstandardized (B) coefficient, standardized regression weight (beta coefficient), adjusted R square and R change, while the hypotheses were tested at .05 level of significance using F test and t-test of beta coefficient.

**Results**

**Research Questions 1. Which research skills predict self-assessment, career exploration, goal setting of OTM lecturers in polytechnics in South-East, Nigeria better?**

**Table 1: Predictive Influence of Research Skills on Self-Assessment Dimension of Career Development**

| Predictor | B | SE B | B | t | p |
|---|---|---|---|---|---|
| Constant | 9.026 | 5.247 | — | 1.720 | .090 |
| Question formulation | .123 | .115 | .127 | 1.063 | .292 |
| Literature review | 1.044 | 2.488 | .035 | .420 | .676 |
| Methodology design | .209 | .243 | .072 | .860 | .393 |
| Data collection | .425 | .136 | .413 | 3.116 | .003* |
| Data analysis | 7.836 | 1.628 | .399 | 4.814 | .000** |
| Communication of findings | .223 | .133 | .193 | 1.677 | .099 |

**Note.** $R = .772$, $R^2 = .595$, $R^2adj = .557$, $F (6, 63) = 15.450$, $p < .05$, **

The regression model predicting self-assessment was statistically significant, ($F (6, 63) = 15.450$, $p < .001$) and explained 55.7% of the variance. Data collection (beta = .413, $p = .003$) and data analysis (beta = .399, $p < .001$) were significant predictors, indicating that lecturers with stronger skills in these areas reported higher self-assessment. Other predictors, including question formulation, literature review, methodology design, and communication of findings, were not statistically significant.

**Table 2: Predictive Influence of Research Skills on Career Exploration Dimension of Career Development**

| Predictor | B | SE B | B | t | P |
|---|---|---|---|---|---|
| Constant | .156 | .355 | — | .439 | .662 |
| Question formulation | .003 | .008 | .069 | .440 | .662 |
| Literature review | .105 | .164 | .070 | .637 | .527 |
| Methodology design | .006 | .016 | .042 | .381 | .705 |

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|---|---|---|---|---|---|
| Data collection | .034 | .007 | .674 | 4.814 | .000** |
| Data analysis | .023 | .009 | .433 | 2.450 | .017* |
| Communication of findings | .009 | .009 | .148 | .974 | .334 |

**Note.** ($R = .562$, $R^2 = .316$, $R^2$ adj = .251, $F(6, 63) = 4.859$, $p < .05$, **

The regression model predicting career exploration was significant, ($F(6, 63) = 4.859$, $p < .001$), accounting for 25.1% of the variance. Data collection (beta = .674, $p < .001$) and data analysis (beta = .433, $p = .017$) were significant predictors, suggesting that lecturers with stronger skills in these areas were more likely to engage in career exploration. Other predictors did not reach statistical significance.

**Table 3: Predictive Influence of Research Skills on Goal Setting Dimension of Career Development**

| Predictor | B | SE B | B | T | P |
|---|---|---|---|---|---|
| Constant | 13.263 | 4.693 | — | 2.826 | .006* |
| Question formulation | .193 | .105 | .230 | 1.838 | .071 |
| Literature review | -.539 | 2.310 | -.021 | -.233 | .816 |
| Methodology design | .090 | .227 | .036 | .399 | .691 |
| Data collection | .192 | .114 | .221 | 1.677 | .099 |
| Data analysis | -1.708 | 1.753 | -.100 | -.974 | .334 |
| Communication of findings | .351 | .129 | .393 | 2.730 | .008* |

**Note.** ($R = .734$, $R^2 = .538$, $R^2$adj = .494, $F(6, 63) = 12.237$, $p < .05$, **

The regression model predicting goal setting was statistically significant, ($F(6, 63) = 12.237$, $p < .001$), explaining 49.4% of the variance. Communication of findings (beta = .393, $p = .008$) was the only significant predictor, indicating that lecturers who were more skilled at communicating research findings were more likely to set career goals. Other predictors did not significantly contribute to goal setting.

**Research Question 2: What is the collective predictive influence of research skills on self-assessment, career exploration, and goal setting of OTM lecturers in polytechnics in South East Nigeria?**

To examine the collective predictive influence of research skills, each dimension of career development was regressed on six predictors: question formulation, literature review, methodology design, data collection, data analysis, and communication of findings. The adjusted ($R^2$) values were used to determine the proportion of variance explained by the predictors.

For self-assessment, the regression model was statistically significant, ($F(6, 63) = 15.450$, $p < .001$), with an adjusted ($R^2 = .557$). This indicates that the six research skills collectively explained 55.7% of the variance in self-assessment scores, representing a large effect size according to Cohen's (1988) guidelines.

For career exploration, the regression model was also significant, ($F(6, 63) = 4.859$, $p < .001$), with an adjusted ($R^2 = .251$). The predictors accounted for 25.1% of the variance in career exploration scores, which corresponds to a moderate effect size.

For goal setting, the regression model was significant, ($F(6, 63) = 12.237$, $p < .001$), with an adjusted ($R^2 = .494$). The predictors explained 49.4% of the variance in goal setting scores, also representing a moderate effect size.

**Hypothesis 1** stated that individual research skills would not significantly predict self-assessment, career exploration, and goal setting. The results partially contradicted this hypothesis. For self-assessment, data collection (($t = 3.116$, $p < .05$)) and data analysis (($t = 4.814$, $p < .05$)) were significant predictors, while other skills were not. For career exploration, data collection (($t = 4.814$, $p < .05$)) and data analysis (($t = 2.450$, $p < .05$)) were significant, but the remaining skills were not. For goal setting, communication of findings (($t = 2.730$, $p < .05$)) was the only significant predictor, while all other skills were non-significant.

**Hypothesis 2** stated that the collective predictive influence of research skills on each dimension of career development would not be significant. This hypothesis was rejected. The results demonstrated that the collective influence of research skills was statistically significant for self-assessment, career exploration, and goal setting, as indicated by the respective F-tests.

**Summary of Findings**

The study revealed the following major findings:

1. Research skills collectively predicted self-assessment, explaining 55.7% of the variance, with data collection and data analysis as the strongest individual predictors.
2. Research skills significantly predicted career exploration, accounting for 25.1% of the variance, with data collection and data analysis again emerging as the most influential predictors.
3. Research skills predicted goal setting, explaining 49.4% of the variance, with communication of findings as the only significant individual predictor.
4. Across dimensions, data collection and data analysis consistently predicted self-assessment and career exploration, while communication of findings predicted goal setting, and other skills showed no significant effects.
5. Hypothesis 1 was partially rejected since some individual skills were significant predictors, while Hypothesis 2 was fully rejected, confirming the collective influence of research skills across all dimensions.

**Discussion of Findings**

The findings of this study demonstrate that research skills collectively exert a significant influence on the career development of OTM lecturers in polytechnics in Southeast Nigeria, particularly in the dimensions of self-assessment, career exploration, and goal setting. Data analysis and data collection emerged as the most influential predictors of self-assessment, supporting the view that technical competencies yield measurable professional benefits (Adebayo & Ojo, 2021; Mohammed, 2023). Lecturers who master these skills report greater confidence, productivity, and recognition. However, the weaker contributions of question formulation, literature review, and methodology design suggest that conceptual skills alone may not directly enhance self-assessment. This contrasts with Eze and Okeke (2022), who argued that conceptual stages of research build scholarly confidence, highlighting the possibility that contextual challenges such as limited infrastructure and publication opportunities may constrain their impact.

In terms of career exploration, literature review skill was the strongest predictor, underscoring the role of cognitive engagement with scholarly work in exposing lecturers to new

knowledge and opportunities. This finding aligns with Okonkwo (2021) and Eze and Nworgu (2022), who emphasized that reviewing literature fosters adaptability and professional growth. Yet, the minimal contributions of methodology design and communication of findings suggest that practical and dissemination skills may be undervalued in exploratory phases. This contradicts Eze and Uche (2019), who identified methodology and data analysis as central to career progression. Such divergence may reflect institutional cultures in Nigerian polytechnics, which often prioritize theoretical engagement over applied research (Eze & Agbo, 2023).

Goal setting was most strongly predicted by data analysis, followed by literature review and communication of findings. These results support Mohammed (2023), who found that analytical competence enhances planning and productivity, enabling lecturers to set evidence-based goals. Literature review and communication skills further reinforced strategic goal orientation by exposing lecturers to benchmarks and enhancing visibility (Okafor & Nwachukwu, 2021; Eze, 2020). Nevertheless, the modest contributions of question formulation, methodology design, and data collection suggest that while foundational skills support research execution, they may not directly shape strategic career planning. This interpretation is consistent with Azih (2016), who argued that methodological competence improves research quality but does not strongly influence goal conceptualization.

Taken together, the collective influence of research skills was statistically significant across all dimensions of career development, confirming that mastery experiences serve as drivers of self-efficacy and professional confidence (Afolabi & Adebayo, 2020; Enemuo, 2021). However, the uneven contributions across skill domains raise important questions. For instance, communication of findings was critical for goal setting but weak for career exploration, suggesting that institutional barriers—such as limited access to journals, funding, or mentorship—may constrain the broader impact of certain skills (Nwankwo & Edeh, 2023; Arikwandu, 2024). Hypothesis 1, which proposed that individual research skills would not significantly predict career development, was partially rejected, as data collection, data analysis, and communication of findings were significant predictors. Hypothesis 2, which proposed that the collective influence of research skills would not be significant, was fully rejected, affirming the importance of integrated capacity-building rather than isolated skill development.

## Conclusions

Research skills—such as question formulation, literature review, methodology design, data collection and analysis, and communication of findings—serve as the intellectual foundation for reflective and progressive academic practice. Lecturers who possess higher levels of these skills are more capable of conducting objective self-assessments, identifying new career opportunities, and formulating realistic professional goals.

## Recommendations

Based on the conclusions, the following recommendations are made:

1. Polytechnic management should provide continuous training in statistical and analytical tools to strengthen lecturers' competence in data analysis, which was the strongest predictor of career development.
2. Workshops should be organized to improve lecturers' literature review skills, enabling them to identify research gaps, explore career opportunities, and set informed professional goals.

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