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RESEARCH ARTICLE

Mentorship Practices and Research Productivity Among Early-Career Educational Psychologists in Universities

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ABSTRACT

Background/purpose – This study analyzed the contribution of three mentorship practices relatively and cumulatively to the research productivity of early-career academics in the field of educational psychology in universities. The study was conducted in the South-South region of Nigeria.

Materials/methods – The research method adopted was the quantitative approach, following the ex-post facto research design. The study's population covered 723 early-career researchers (ECRs) in educational psychology distributed across 19 universities located in South-South Nigeria. The "Mentorship Practices and Research Productivity Questionnaire" (MPRPQ) was the instrument used for data collection. The questionnaire was designed by the researchers and then validated by three experts. Reliability analysis was performed using the Cronbach approach with estimates of .80, .79, .87, and .91 obtained for the four clusters. Primary data were collected from the field after copies of the instrument had been administered to respondents.

Results – Mentorship practices were generally revealed to significantly contribute to the research productivity of ECRs in educational psychology in universities. Specifically, the adoption of cloning and apprenticeship approaches to mentorship contributed substantially to the ECRs' research productivity. However, the study highlighted that nurturing contributed only negligibly to the ECRs' research productivity.

Conclusion – Mentorship practices are important determinants to the research productivity of early-career educational psychologists. In order to boost the productive research capacities of ECRs, there is a need for institutions to strengthen their mentorship practices.

Keywords – Apprenticeship, cloning, early-career researchers, nurturing, psychologists.

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1. INTRODUCTION

Measuring the productivity of researchers is one of the most widely discussed topics in recent times, which is due in part to a shortage of instruments that can adequately assess the hypothetical construct. The field of psychology, as with other disciplines, is driven by research for the purposes of knowledge production and expansion (Bassey & Owan, 2018; Odigwe et al., 2020). Therefore, there is a need to constantly assess the extent to which scholars in the discipline are actively producing knowledge in order to improve psychological practices. Among the players in knowledge production, early-career researchers (ECRs) make relevant contributions whilst developing careers in their respective disciplines.

The definition of an ECR varies based on its application, as well as where, how, and who is using it. An ECR is considered to be a member of a teaching and research institution's staff with less than 10 years of experience after having earned their Ph.D. (University of Southampton, 2021). A large number of research councils, as well as the European Union, adhere to this definition provided by the University of Southampton. However, the Arts and Humanities Research Councils (AHRC) view ECRs as individuals with up to 8 years since receiving their Ph.D., or comparable professional training. The AHRC also consider those within 6 years of receiving their first academic position (in universities or research institutions) as ECRs. It must be noted, however, that these timeframes exclude periods of professional interruption, such as time taken away from work for family care or for health reasons.

Due to the role that ECRs play in contributing to scientific knowledge production and dissemination, it is crucial to understand the variables that influence their productivity (Mills & Inouye, 2021; Oluwasanu et al., 2019; Sohrabi et al., 2021). Understanding these aspects is essential for the ongoing development of innovative research and discovery (Owan & Owan, 2021). It is also important to study the research productivity of ECRs since the future of knowledge production in a given field (e.g., educational psychology) rests in their hands. Understanding productivity during the early stage of a research-based careers is also important for their effective guidance and remediation, hence research focusing on the productivity of ECRs is gradually gaining traction in the literature (Bégin-Caouette et al., 2020; Lucherini, 2020; Merga & Mason, 2021a, 2021b). Therefore, an established need exists for studies on mentorship and research productivity amongst early-career researchers, which the current study aims to fulfil with a particular focus on the field of psychology. The current study is anticipated to instill a spirit of mentoring and collaboration among scholars in general, and where established and early-career researchers can collaborate on projects aimed at addressing psychological problems. The study aims to reveal findings that in turn will help increase awareness, and thereby provoke institutions to promote mentorship and enhance quality research so as to improve the capacity of early-career scholars to undertake an increased level of core research.

The weak-tie theory proposed by Granovetter (1973) inspired the development of the current study. Granovetter asserted that connecting with a large group of individuals can yield more relevant information for academic production than when working only within a smaller group. Relationships will likely be more professional than personal to start out, with ties later becoming less tenuous. As a result, ECRs are more likely to have a close-knit group of coworkers who know each other well.

Student productivity has been linked to the number of personal connections held with others both on and off-campus, and especially the latter (Blackburn et al., 1978). This theory has implications for the current study as mentorship deals with the relationships between mentors and their protégés. These relationships are initially built for the purposes of mentors helping to improve the professional development of their mentees. However, in the long run, both the mentor and mentee can end up with greater personal ties from which they both may benefit. According to this theory, research has shown that both mentors and mentees can benefit from the mentorship process based on improvements to their productivity (Blackburn et al., 1981). It was further indicated by Blackburn et al. that academics with mentees achieved 21-25% more scholarly publications than those without mentees. The main purpose of the current study is to investigate the contribution of mentorship practices to the research productivity of early-career researchers in the area of educational psychology in the university setting. The specific objectives of the study are as follows:

- To assess the contribution of cloning practices to the research productivity of early-career educational psychologists in universities;
- To determine the contribution of nurturing practices to the research productivity of early-career educational psychologists in universities;
- To quantify the contribution of apprenticeship to the research productivity of early-career educational psychologists in universities; and,
- To estimate the composite contribution of mentorship practices (cloning, nurturing, and apprenticeship) to the research productivity of early-career educational psychologists in universities.

Research questions

The following research questions guided the study:

1) What is the contribution of cloning practices to the research productivity of early-career educational psychologists in universities?
2) What is the contribution of nurturing practices to the research productivity of early-career educational psychologists in universities?
3) What is the contribution of apprenticeship practices to the research productivity of early-career educational psychologists in universities?
4) What is the degree of composite contribution of mentorship practices (cloning, nurturing, and apprenticeship) to the research productivity of early-career educational psychologists in universities?

2. LITERATURE REVIEW

Whilst the literature includes several related studies, scholars in the social sciences have considered ECRs according a number of different variables, including training and support (Callagher et al., 2021; Gibson et al., 2020; Goldman et al., 2021; Husby & Modinos, 2020; Poppelaars et al., 2022; Shelton et al., 2021; Weissgerber, 2021), understanding their research culture (Bankston et al., 2020; Calitz, 2020; Christian et al., 2021; Munafò et al., 2020), attitudes and behaviors (Jamali et al., 2020; Nicholas et al., 2020), as well as identity threats (Callagher et al., 2021; Mula et al., 2021). Others have aimed at understanding the effects of the COVID-19 pandemic on ECRs (Herman et al., 2021; Jackman et al., 2021; Johnson & Weivoda, 2021; López-Vergès et al., 2021; Termini & Traver, 2020), their open

access publishing activities (Gownaris et al., 2022; Nicholas et al., 2020; Sundramoorthy, 2021), self-management (Alisic & Wiese, 2020; Bielczyk et al., 2020; Da Silva et al., 2021; Sanders et al., 2022), contribution to knowledge (Djerasimovic & Villani, 2020; Merga & Mason, 2020), challenges (Gill, 2021; Johnson & Weivoda, 2021; Richards et al., 2021; Silveyra & Grandison, 2020), and employment insecurity (McKenzie, 2021).

In order to explain the pervasiveness of research on ECRs, other scholars have studied professional identity (Karaharju-Suvanto et al., 2021), stress and financial self-efficacy (Dickson et al., 2020), work-life balance (Gutman, 2020; Krilić et al., 2018) career trajectory (Belfi, 2021; Emmanouil et al., 2017), lived experiences (Caretta, 2018; Whipp & Geronime, 2017), doctoral teaching development (Connolly et al., 2018), school loans/educational debt (Rothstein & Rouse, 2011; Zhang, 2013), career progression (Goldacre et al., 2010), and the pathway choices (Carrico et al., 2012) of ECRs. However, some studies with a focus on early-career researchers have considered several aspects of mentorship such as information mentorship (Al Shebli et al., 2020), mentorship experiences (Kay et al., 2009; Lalani et al., 2018; Mgaiwa & Kapinga, 2021), workplace resources (Perumalswami et al., 2020), effective mentorship (Diggs-Andrews et al., 2021), online mentorship (Bielczyk et al., 2019), supporting early-career mentorship (Kwamie & Jalaghonia, 2020), research mentorship (Hernandez-Lee & Pieroway, 2018; Van Schalkwyk et al., 2017), induction and mentorship programs (Weldon, 2018), and also peer mentoring programs (Brody et al., 2016). However, none of these studies have explored nurturing, cloning, or apprenticeship as specific practices of mentorship.

Studies on mentorship and research productivity have also been based on mentorship, equity, and research productivity during the era of a pandemic (Nocco et al., 2021), the culture of mentorship (Choi et al., 2019), as well as faculty mentorship and research productivity (Tan & Main, 2021). In a related study by Oluwasanu et al. (2019), it was reported that Nigerian researchers were unable to operate as interdisciplinary teams due to a lack of qualified in-country researchers. In Korea, Jung (2014) revealed that research productivity differed amongst academics during the early stage of their careers, although the pattern was shown to vary according to the academic field. Although the study by Jung (2014) provided the basis for the current study (by revealing different patterns in ECRs' productivity across disciplines), Jung did not elaborate on the contribution of mentorship practices to the ECRs' research productivity. In a study by Sabharwal (2013), it was revealed that all research output (articles and books) were generated by early and mid-career faculty members, suggesting that their research performance decreased as faculty advanced in their careers.

Research by Hilmer and Hilmer (2007) revealed that researchers whose students' dissertations were assigned to academic advisors with higher relative research output were more productive early in their academic careers. This suggests that the quality of a mentor may relate to and determine the quality of the mentee. According to the cited researchers, the finding suggests that students who work with important advisors in lower ranked programs do better than their counterparts in highly rated programs, and that this is due to their advisors' relative influence in each program. From a study conducted in Italy, Abramo et al. (2017) stated that research productivity could only be improved through cooperation both intramurally and domestically. Admittedly, the attention of some studies has been drawn towards assessing the quality of mentorship that ECRs have received, as well as other capacity-building practices. For instance, Nicholson et al. (2020) assessed the degree of

capacity building and mentorship ECRs in Canada, and identified webinars and online workshops as the approaches used to improve the capacity of ECRs; however, the study did not connect these strategies to the research productivity of ECRs. In another study, advocacy was made for female ECRs to be offered mentorship support for effective community-based healthcare (Kwamie & Jalaghonia, 2020). Apart from being gender-skewed, their study did not reveal the extent to which ECRs' productivity was influenced by mentorship support. Other studies on mentorship and ECRs have looked at areas such as the mentorship needs of ECRs (Marino, 2021), the implementation of long-distance mentorship (Obi et al., 2021), and the value of peer mentorship (Dickson et al., 2021). While the academic employment opportunities worldwide are limited, two international surveys conducted in 2015 (Ghaffarzadegan et al., 2015) and 2017 (Woolston, 2017) found that approximately 78% and 75% of Ph.D. applicants wanted to work in academia, respectively. However, not all Ph.D. graduates are required to work in academia. Still, Australia's advanced sectors, which usually employ highly trained people, are less developed than, for example, that of the United States or Germany (Christopherson et al., 2014; Weller & O'Neill, 2014).

Although it is claimed that mentorship has a favorable effect on a variety of outcomes, including the number of publications, academic advancement, faculty loyalty, and job happiness (Choi et al., 2019; Dickson et al., 2021), these claims are often not backed up with empirical research evidence. To date, the current literature reveals just one study (Olayide et al., 2021) that attempted to establish a connection between mentorship and research productivity. The study by Olayide et al. (2021) was conducted in Sub-Saharan Africa and used metrics to assess the productivity of 21 ECRs engaged in a mentorship program. The study revealed that the mentorship program significantly improved the ECRs' output and metrics. Although this one recent study exists, the current research still aims to fill a gap in the literature. First, a single study is not considered sufficient to establish knowledge in an area of research, with additional studies are also required from different contexts in order to clarify the role that mentorship plays in the research productivity of ECRs. Additionally, a number of studies and reviews have recommended that further research is required In this area due to the dearth of information to be found in the literature (e.g., Atieno et al., 2021; Byks-Jazayeri et al., 2018; Marini et al., 2019; Prozesky et al., 2021).

Furthermore, compared to Olayide et al. (2021), the current study is more specific, with its focus designed to understand the perspective of early-career scholars according to their research productivity, and thereby to determine the contribution of mentorship in the context of educational psychology. The study of Olayide et al. (2021) revealed that their respondents were from Ghana (n = 4), Nigeria (n = 13), South Africa (n = 1), Zimbabwe (n = 1), and Tanzania (n = 2), but did not provide any information with regards to their area of academic discipline. The current study, however, focuses on the field of educational psychology due to the researchers having observed a decline in knowledge production amongst new scientists in the field. The current study also considers three core mentorship practices as part of its investigation into their links to the research productivity of ECRs. The focus of the current study was ECRs since they account for a significant proportion of the academic profession, and their experiences often mirror the broader culture of the research system (Christian et al., 2021), and the rate of unwillingness of ECRs to engage in practical research activities in the Nigerian context seems to be on the increase. Furthermore, doctoral educational psychology students often seem uninterested in research-related

matters, which seems to have an effect on the rate at which they learn, collaborate and network with other actors, players, and stakeholders in their for research engagements, as well as for knowledge production and problem-solving.

3. METHODOLOGY

Context and research design

The context of the current study is the South-South region of Nigeria, covering the six states of Akwa Ibom, Bayelsa, Cross River, Delta, Edo, and Rivers. This region is the most oil-rich zone in the country, with the predominant tribes including the Efik, Ibibio, Oron, Itsekiri, and Ijaw. At the time the study was conducted, there were 22 public and 15 private universities located in Nigeria's South-South region. The study adopted the quantitative research method, with a specific focus on the ex-post facto research design, which was adopted to enable data to be collected on the study's variables based on their past occurrences within the population.

Population and sample

The population of the study comprised all early-career researchers (ECRs) in the field of educational psychology across all 19 universities in South-South Nigeria that offered the Educational Psychology course. In the context of the current study, an early-career researcher refers to a junior academic member of staff with a doctoral degree but as yet to attain the rank of a Senior Lecturer. Thus, early-career researchers include those at the Assistant Lecturer and Grade Level I lecturers (known as Lecturer I). The population of early-career researchers in educational psychology across the 19 universities was 723. Since this population was considered manageable, the census approach was adopted in order to enumerate the entire population. Thus, sampling was not undertaken, giving room for near-perfect generalizations to be made according to the results of the study.

Analysis of the participants' demographic characteristics (see Table 1) indicates that 62.3% (n = 401) of the respondents were male, whilst 37.7% (n = 243) were female. It was also shown that 26.4% (n = 170) were aged between 20-29 years old, while 35.4% (n = 228) were 30-39 years old, 23.6% (n = 152) were 40-49 years old, and 14.6% (n = 94) of the respondents were aged 50 years old or over. The analysis also showed that 18.6% of the respondents (n = 120) were single, whilst 81.4% (n = 524) were married. In terms of the respondents' employment rank, 35.4% (n = 228) were Assistant Lecturers, whilst 29.7% (n = 191) and 34.9% (n = 225) of the respondents were Grade Level I Lecturers and Grade Level II Lecturers, respectively.

Instrument and measures

The instrument used for data collection was the "Mentorship Practices and Research Productivity Questionnaire" (MPRPQ). The questionnaire was designed by the researchers based on a review of the existing literature. Section A of the MPRPQ aimed to elicit the demographic information of the respondents, including their age, gender, rank, years of work experience, etc., whilst Section B comprises of six items to assess how the respondents perceived the cloning mentorship practices of senior academics. Cloning practices are defined as activities engaged in by senior scholars, with efforts directed towards developing ECRs to become professionally similar. Section C of the instrument comprises eight items designed to measure the nurturing practices of senior academics on ECRs. In the context of

this study, nurturing refers to the efforts made by seasoned or tenured scholars to guide and develop the competencies of ECRs towards achieving a better tenure track or academic career, but not necessarily similar to the tract of the guiding senior academic.

Section D was designed with eight items that aimed at measuring the apprenticeship activities of ECRs under the supervision of senior academics. Apprenticeship, as used in the current study's context, refers to direct experiential learning where seasoned scholars help ECRs to learn through regular observation and practice. This type of mentoring often requires that ECRs are present in the research labs to observe as part of their development. All items in Section B through to Section D of the instrument are based on a 4-point, Likert-type scale. Response options range from *strongly agree* to *strongly disagree*. Section E of the questionnaire consists of 13 items aimed at assessing the research productivity of ECRs. Measuring the research productivity of scholars has long been a subject of debate in the literature, with different measures developed for this purpose. Research productivity, in this study's context, was estimated based on the number of grants won, the number of conference papers presented, the number of postgraduate and undergraduate students supervised, the total number of current citation counts on Google Scholar, Google Scholar's current h-index score, and the number of published research articles in peer-reviewed journals. During its development, the MPRPQ instrument was validated by three experts of research, measurement, and evaluation, and two from educational psychology. The Cronbach alpha reliability approach was used to determine the instrument's internal consistency after a trial test had been conducted with 60 randomly selected ECRs from the South-East region of Nigeria. Reliability estimates of .80, .79, .87, and .91 were obtained for cloning, nurturing, apprenticeship practices, and research productivity, respectively.

Table 1. Demographic characteristics of the respondents

Variable	Categories	Frequency	%
Gender	Male	401	62.3
	Female	243	37.7
	Total	644	100.0
Age (years)	20-29	170	26.4
	30-39	228	35.4
	40-49	152	23.6
	50 or over	94	14.6
	Total	644	100.0
Marital status	Single	120	18.6
	Married	524	81.4
	Total	644	100.0
Rank	Assistant Lecturer	228	35.4
	Lecturer II	191	29.7
	Lecturer I	225	34.9
	Total	644	100.0

Data collection and analysis procedures

The researchers collected data for the study by administering the aforementioned MPRPQ instrument. The researchers visited each of the respective institutions selected in order to make direct contact with the ECRs. All of the study's participants took part voluntarily. Those who indicated their interest in joining the study were required to provide

written informed consent by signing a form that documented the study's objectives, desired information, and the expected data collection procedures, as well as data handling and issues of data confidentiality. In total, 644 ECRs consented to participate in the study, and were therefore requested to complete the MPRPQ. The data collection took 4 months in total, from August to November 2021.

The completed instruments were retrieved for data analysis. Prior to the analysis, it was ensured that all completed questionnaires were sorted and assigned serial numbers (for ease of identification). All responses of *strongly agree*, *agree*, *disagree*, and *strongly disagree* were assigned 4 points, 3 points, 2 points, and 1 point weighting, respectively, for all positively worded items. Reverse scoring was applied for negatively-worded items. Ordinal scores obtained for the items in Section A through to Section D of the questionnaire were summed so as to obtain continuous data. For Section E (research productivity), individual scores were obtained by adding the values provided and metrics. Since data for both the dependent and independent variables were continuous, simple and multiple linear regression analyses were employed to answer the research questions of the study. Simple regression was used for bivariate analysis, whereas multiple regression was used for multivariate analysis after meeting both theoretical and statistical assumptions.

4. FINDINGS

Research question 1

What is the contribution of cloning practices to the research productivity of early-career educational psychologists in universities? The result of the analysis revealed that the contribution of cloning practices to the total variance in the research productivity of early-career researchers in the field of psychology is 2% (Adjusted R^2 = .02), with the remaining 98% of the unexplained variance due to other factors not included in the model. The regression coefficient (B = .27) associated with the model in Table 2 indicates that a unit increase in the cloning practices of senior academics will lead to a 0.27% increase in the research productivity of early-career researchers in the field of psychology, other things being equal. The result in Table 2 shows that the p-value of .00 is less than the alpha level of .05 at 1 and 642 degrees of freedom. Therefore, cloning practices have been shown to have a significant contribution to the research productivity of early-career educational psychologists in universities. This indicates that the adjusted R^2 value of .02 was not due to chance.

Table 2. Simple linear regression analysis results: Contribution of cloning practices on research productivity of ECRs in educational psychology

Model	*SS*	*df*	*MS*	*F*	Sig.	*R*	Adj. R^2
Regression	2303.82	1	2303.82	12.51	.00	.14	.02
Residual	118189.4	642	184.10				
Total	120493.2	643					
B = 0.27; β = 0.14; t = 3.54							

a Dependent Variable: Research Productivity
b Predictors: (Constant), Cloning Practices

Research question 2

To what extent does nurturing practices contribute to the research productivity of early-career educational psychologists in universities? The result of the simple linear regression analysis presented in Table 3 indicates that the nurturing practices of senior academics are responsible for 0.3% of the total variance in the research productivity of early-career researchers in the field of educational psychology. This implies that 99.7% of the unaccounted proportion of the variance is attributable to other independent variables that are extraneous to the model. The unstandardized regression coefficient (B = .13) indicates that other things being equal, a unit increase in the nurturing practices is associated with a 0.13% increase in the research productivity of early-career researchers in educational psychology. The results presented in Table 3 provide evidence that the extent to which nurturing practices contribute to the research productivity of early-career educational psychologists in universities is not statistically significant. This is because the p-value associated with the examination was greater than the alpha level of .05 at 1 and 642 degrees of freedom. This indicates that the adjusted R^2 value of .00 is sufficiently weak that it should not be taken seriously.

Table 3. Simple linear regression analysis results: Contribution of nurturing practices on research productivity of ECRs in educational psychology

Model	*SS*	*df*	*MS*	*F*	*p*	*R*	Adj. R^2
Regression	514.643	1	514.64	2.75	.10	.07	.00
Residual	119978.6	642	186.88				
Total	120493.2	643					
B = .13, β = .07, t = 1.66,							

a Dependent Variable: Research Productivity
b Predictors: (Constant), Nurturing Practices

Research question 3

What is the extent of the contribution of apprenticeship practices to the research productivity of early-career educational psychologists in universities? The result of a simple linear regression analysis presented in Table 4 shows that the apprenticeship practices of seasoned scholars are responsible for 1% of the total variation in the research productivity of early-career researchers of the educational psychology discipline. This result suggests that 98.8% of the unaccounted variance is attributable to other predictors not included in the model. The result shown in Table 4 indicates that as senior scholars make efforts to improve their apprenticeship practices by one unit, the research productivity of early-career researchers will also increase by 0.11 of a unit. The results in Table 4 show a p-value of .00 associated with the analysis, which is less than the alpha level of .05 at 1 and 642 degrees of freedom. Drawing on this result, it was concluded that the contribution of apprenticeship practices to the research productivity of early-career educational psychologists in universities is statistically significant. Thus, the contribution of the independent variable to the response variable, as explained by the adjusted R^2 value, was not a chance situation.

Table 4. Simple linear regression analysis results: Contribution of apprenticeship practices on research productivity of ECRs in educational psychology

Model	*SS*	*df*	*MS*	*F*	Sig.	*R*	Adj. R^2
Regression	1590.21	1	1590.21	8.59	.00	.12	.01
Residual	118903	642	185.21				
Total	120493.2	643					
B = .108, β = .115, *t* = 2.93,							

a Dependent Variable: Research Productivity

b Predictors: (Constant), Apprenticeship Practices

Research question 4

What is the degree of composite contribution of mentorship practices (cloning, nurturing, and apprenticeship) to the research productivity of early-career educational psychologists in universities? The result of a multiple linear regression analysis, as presented in Table 5, shows that the cumulative contribution of mentorship practices to the research productivity of early-career researchers is 3%. By implication, other extraneous variables to the model can be held accountable for the remaining 97% variance not explained by the mentorship practice variables. As shown in Table 5, the standardized regression coefficients associated with the three predictors in the model reveal that a unit increase in the cloning practices of senior academics is associated with a 0.12 unit increment in the research productivity of educational psychology ECRs. It was also revealed that a unit increase in the standard deviation of the nurturing practices of established academics contributes about 0.05 of a unit to the standard deviation of the ECRs' research productivity. It was further predicted that a unit increase in the standard deviation of the apprenticeship practices of established academics contributes about 0.11 of a unit to the standard deviation of the ECRs' research productivity.

The result of the multiple linear regression analysis presented in Table 5 reveals a *p*-value of .00 associated with the analysis. This *p*-value of 3 and 640 degrees of freedom is less than the alpha level of .05. Consequently, it can be said that there is a significant composite contribution of mentorship practices (cloning, nurturing, and apprenticeship) to the research productivity of early-career educational psychologists in universities. Among the three predictors, the contribution of cloning and apprenticeship practices were both found to be significant. However, the contribution of nurturing practices was not proven statistically in this study. Of the two significant predictors, cloning was shown to be the strongest ($t = 3.04$, $p < .05$), followed by apprenticeship practices ($t = 2.76$, $p < .05$).

Table 5. Multiple linear regression analysis results: Contribution of mentorship practices on research productivity of ECRs in educational psychology

Source	*SS*	*df*	*MS*	*F*	Sig.	*R*	Adj. R^2
Regression	3914.87	3	1304.96	7.16	.00	.18	.03
Residual	116578.3	640	182.15				
Total	120493.2	643					

Model	*B*	*SE*	β	*t*	Sig.
(Constant)	16.17	2.32		6.96	.00
Cloning	0.24	0.08	0.12	3.04	.00
Nurturing	0.10	0.08	0.05	1.32	.19
Apprenticeship	0.10	0.04	0.11	2.76	.01

5. DISCUSSION

The first finding revealed a significant contribution of cloning practices to the research productivity of early-career educational psychologists in universities. This finding was attributed to the 2% contribution that the research productivity of ECRs of educational psychologists received from the cloning practices of senior academics. This finding, however, is not considered surprising because, in cloning, seasoned scholars identify scholars in the early stages of their careers and make specific efforts to develop them so as to become a replica of their professional selves. This result implies that the more well-established mentors devote interest in cloning themselves among ECRs in the field of educational psychology, the more productive the research careers of the ECRs will be. Thus, well-established scholars in educational psychology can use the cloning strategy to help advance ECRs to have similar career paths and research achievements as themselves. This finding corroborates the results published by Olayide et al. (2021), in that mentorship programs can significantly improve the output and metrics of ECRs. The result also agrees with the seminal work of Blackburn et al. (1981), where the clones or protégé's of 64 professors were found to be very effective in their scholarly production. Also, Scaffidi and Berman (2011) found that quality supervision and career mentorship, partnerships, networking, and a caring research environment all helped to contribute to good postdoctoral experiences.

The second finding established that nurturing practices do not significantly contribute to the research productivity of early-career educational psychologists in universities. This finding is somewhat surprising, however, considering that the nurturing of mentees is connected with the development of the inherent traits and abilities already present in the mentee. However, the non-significance of the result may have been due to the attitudes of the mentees towards the guidance received from their mentors. It may also be due to the quality of advice provided by the mentors, the form that the nurturing process took, or the attributes of both the mentor and mentees. This finding does not imply an absence of contribution of nurturing practices to ECRs' research productivity, but that the result suggests that the degree of the contribution is negligible. This result implies that nurturing may not have been a suitable mentorship strategy to develop early-career researchers in the field of educational psychology in terms of research productivity. Further evidence is required to justify this finding, and the way in which nurturing is implemented should also be a matter of concern in future studies. The proof of this study, however, contradicts that of Nocco et al. (2021), who reported an important link having been established between mentorship, equity, and research productivity. The current study's results also contradict with those of Nicholson et al. (2020), in which mentorship using online platforms was shown to improve research output. The variation in results of the current and cited studies is attributed to differences in the variables studied, with the current study having specifically considered nurturing as a mentorship practice, whereas the cited studies treated mentorship in a more broad-based sense.

The third finding concluded that a statistically meaningful contribution was found for apprenticeship practices on the research productivity of early-career educational psychologists in universities. This result tallies with the output of other studies which documented that mentorship promotes ECRs' satisfaction and productivity (Choi et al., 2019; Dickson et al., 2021; Kwamie & Jalaghonia, 2020). This conclusion is based on the apprenticeship practices of seasoned scholars being shown to be responsible for 1% of the total variation in the research productivity of early-career educational psychology researchers. This suggests that the production or refinement/transformation of ECRs into established/tenured researchers can be achieved using the apprenticeship mentorship approach. This result, however, was anticipated because the apprenticeship system offers practical exposure whereby mentees learn through the imitating of the practices they observed. Thus, ECRs keep on improving their capabilities as they imitate and practice what they observe under the guidance of their mentors. Although the apprenticeship system may also be used to clone (where mentees are trained primarily to reflect their mentor), it can also be used to develop individuals who may even go on to excel beyond the level of their mentor. Mentees can go on to become more successful than their mentors if they apply the training received from their mentors in order to improve themselves.

The fourth finding revealed that mentorship practices such as cloning, nurturing and apprenticeship, where employed jointly, can improve the research productivity of early-career researchers beyond the adoption of just one single method. This finding aligns with the popular saying that there is no one best strategy for doing something. The discovery also strengthens the finding of Olayide et al. (2021), in that mentorship programs can significantly improve the output and metrics of ECRs in Sub-Saharan Africa. The agreement in the results of the current and cited studies is plausible since both studies were conducted in Sub-Saharan Africa, plus there was also a similarity in the methodology applied as both studies used metrics to assess research productivity. Going by the finding of the current study, adopting an inclusive mentorship approach can help to promote the research productivity of ECRs to a higher degree than the utilization of any of the other methods. This result is attributed to the suitability of a mixed approach in meeting the diverse needs of different individuals. It is also possible that individuals may be resistant to cloning, nurturing, or apprenticeship systems, whereas they may be more susceptible to other techniques. The combined approach may also help mentors to better address the needs of different individuals that they mentor. Thus, it is recommended that mentors adopt a combination of mentorship strategies in order to more effectively promote the research productivity of ECRs. This finding agrees with a study by Hilmer and Hilmer (2007), in that researchers whose students' dissertations were assigned to academic advisors with higher relative research output were shown to be more productive early in their academic careers. According to the researchers, students who work with important advisors in lower-ranked programs do better than their counterparts in highly rated programs, and this is attributed to their advisors' relative influence in the respective program. The study's result also tallies with the evidence earlier conceived by Siddiqui (2014), in that the apprenticeship scheme of the mentors was seen as beneficial to their mentees.

Implications, limitations, and future research directions

The current study offers to contribute to the literature by being the first study to link the specific mentorship practices of cloning, nurturing, and apprenticeship to the research productivity of ECRs. The study also advances the literature in the field of educational

research and educational psychology by focusing on the career development of ECRs having received mentorship. The current research also aimed to bridge gaps in the scarcity of empirical literature in this area of study.

Notwithstanding its novelty, the current study is perceived to be limited by its scope in terms of geography and content. The study covered only the South-South region of Nigeria, limiting the extent of generalizations that may be applied to other contexts. Thus, future studies could expand upon the geographical scope in order to gain deeper insight into the subject matter. Second, the study's focus was narrow, including only ECRs in the field of educational psychology, whilst neglecting other disciplines. This implies that the findings may not be generalized to other branches of psychology or domains. As a suggestion, the study places a call for scholars from other disciplines to replicate this study in the context of other fields so as to expand the frontiers of knowledge in the literature. It was also beyond the scope of the study to determine the situation or demography for the application of different mentorship strategies, and which would yield the most contribution to the ECRs' research productivity. Therefore, future research may consist of similar projects aimed at bridging this gap.

6. CONCLUSION

The study used a quantitative approach to verify linkages between three mentorship practices and the research productivity of ECRs in the field of educational psychology. Following data collection and analysis, it was concluded that mentoring ECRs is a critical activity that can shape their future levels of productivity. Relatively, this study found cloning and apprenticeship practices to be effective in enhancing the productivity of ECRs in educational psychology. Although nurturing, when used alone, was not shown to be of that much importance in promoting productivity among ECRs, whilst applied jointly in combination with different mentorship practices yielded significantly better results.

7. SUGGESTIONS

Based on the conclusion of the current study, it is suggested that senior academic university staff should ensure that they identify ECRs, and to mentor them towards becoming more productive scholars. It is also recommended that cloning or apprenticeship mentorship practices be adopted by seasoned scholars to raise effective researchers of the future. ECRs should also approach senior colleagues that they admire for their careers towards potential mentorship. During the mentorship process, both mentors and protégés should work to establish a good working professional and personal relationship.

DECLARATIONS

Author contributions Abigail Edem Okon: Study conception, design, data collection, and supervision. Valentine Owan: Instrument design, data collection, analysis, and interpretation of results. Mercy Owan: Data collection and draft manuscript preparation. All authors reviewed the results and approved the final version of the manuscript.
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