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RELATIONSHIP BETWEEN COMPUTER SELF-EFFICACY AND RESEARCH ATTITUDE: A QUANTITATIVE STUDY OF TERTIARY INSTITUTIONS IN ENUGU STATE, NIGERIA

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Abstract

The present study investigated the relationship between computer self-efficacy and research attitudes in academia. One hundred and six academic staff conveniently pooled from tertiary institutions completed a self-report questionnaire intended to evaluate their ability to use the computer and its impact on their research-related attitudes. A cross-sectional design was employed in the study. Data from the respondents were analyzed using the statistical package for social sciences (SPSS, Version 23). Linear regression was run to test the hypothesis that computer self-efficacy would interact with research attitudes. The investigation revealed that computer self-efficacy statistically significantly predicted research attitudes in academia at F (1,104), 47.35, P<.000. An observation of the R2 indicates that the predictor variable accounted for 11.7% of the observed variance in research attitudes. The result has implications for research development in tertiary institutions

Keywords: *Research attitudes, computer self-efficacy, academics, tertiary institutions.*

INTRODUCTION

Research is an essential component of higher education in modern-day education (Kachalova et al., 2019). Tertiary Institutions are presently allocating attention to scientific investigations, thereby making research a critical aspect of education apart from the conventional task of teaching (Etzkowitz, 2003). Research design and development is the primary focus in academia, especially at the tertiary level. Perhaps, the growth and development of a nation require a rapid coherent scientific inquiry and logical research framework (Ashrafi-Rizi et al., 2015). Accordingly, Bhagavathula et al. (2017) noted that evidence-based knowledge is a ubiquitous part of science education in global academia. Research is critical in advancing and improving every aspect of our world. Remarkably, previous studies have highlighted the relevance of research in promoting learning (Krylova et al., 2019; Sabel'nikova-Begashvili & Khudoverdova, 2020).

Previous studies (e.g., McLaughlin et al., 2018; Mina et al., 2016; Partido & Colón, 2019) implicated positive research attitudes on students' eagerness to participate in research activities. Vossen et al. (2018) highlighted the relevance of research and evidence-based inquiries on the ever-increasing demand for science education. Notably, research has been implicated in institutional restoration and integrity (Hajdarpasic et al., 2015). Davis and Jones (2017) noted that academic research activities equip the students with innovative information. In addition, Brown et al. (2016) stated that research activities impact cutting-edge knowledge and primary research methodologies on the students and increase scholarly inspiration (Falconer & Holcomb, 2008). The relevance associated with research activities in higher education is well documented (e.g., Abu-helalah et al., 2015; Beanland et al., 2020; Borakati et al., 2017; Kozlov et al., 2017; Noguez & Neri, 2019; Razeghi, 2019; Roach, 2017; Swan et al., 2018; Weiner & Watkinson, 2014).

Academics in higher education are essential in promoting research-based learning. Thus, they contribute significantly to the development of research skills. In Nigeria, lecturers are responsible for providing knowledge and services that contribute to national development. Moreover, several reports have recognized research as an essential part of teaching and learning in academia and one of the conditions for moving up the ladder in the academic system (Katz & Coleman, 2001). Indeed, research production has been a critical determinant of academic success (Chin & Law, 2020). Thus, academics are tasked with equipping themselves, including the students, with the relevant skills relative to research methods and procedures.

Research in academia refers to scientific procedures detailing the collection and analysis of relevant data to expand knowledge and understanding of a phenomenon (Creswell, 2012). Thus, it involves careful processes that provide credible output. Importantly, research attitude is the predisposition to engage in research activities (Safi & Kumar, 2019). Indeed, attitudes are composed of cognitive, affective, and behavioral dispositions. In other words, attitudes relative to academic research entail the composition of knowledge about research, favorable or unfavorable feelings regarding research, and actions. One of the significant characteristics of the academic profession in higher education systems is consistent scientific inquiry. Previous research has indicated the positive influence of scholarly research disposition on the professional development of educators (Ulla, 2018). Engaging in a research process allows academics to develop new skills, approaches, and strategies (Impedovo & Malik, 2016; Landicho, 2020), which can be transferred to the students and society. One of the tasks of lecturers is to supervise students' research projects while the learners invest the effort to emulate the research style of the supervisor. This relationship increases the research disposition of the learners and promotes the development of research-based learning in academia. Thus, a positive research attitude in academia improves practice and learning outcomes (Mertler & Charles, 2008). The present study investigated the relationship between computer self-efficacy and research attitude.

Computer self-efficacy and research attitude

Self-efficacy is a social-psychological construct reflecting an individual's belief in accomplishing a stated task without help from others (Bandura, 1977). The term has been widely linked with academic achievement and future endeavors. Most importantly, evidence shows that self-efficacy significantly influences motivation, interest, and overall engagement (Webb-Williams, 2018). Computer self-efficacy is one of the many domains of self-efficacy, which refers to a person's belief in successfully using the computer system to accomplish the desired task without help from others. Computer self-efficacy has been found to significantly influence individuals' expectations of the outcomes of using computers, their emotional reactions to computers (affect and anxiety), and their actual computer use. Literature abounds that supports the linkage between computer self-efficacy and actual computer use (Chibisa et al., 2021; Hong et al., 2014; Mcilroy et al., 2007; Oyewusi et al., 2017; Turel, 2014). Computer self-efficacy has several effects on thought patterns and responses. Thus, people with low computer self-efficacy are more likely to avoid situations that require using the computer system. On the other hand, people with high computer self-efficacy show a willingness to undertake tasks and manage situations using computer resources. Research in contemporary academia is principally dependent on computer resources. Thus, academics who believe in their abilities to use the computer system are likely to possess a positive research attitude than their counterparts with low computer self-efficacy.

Hypothesis: There would be a positive relationship between computer self-efficacy and research attitudes in tertiary institutions in Enugu state

Method

The study population comprised academic staff from three public tertiary institutions in the Enugu State, Nigeria. One hundred and twenty-one male and female lecturers from different departments were approached between February and April 2022. They were asked to participate in a study to understand their belief in using the computer and its effect on their research work. The one hundred and eleven academics who consented to partake in the study were given the study

instrument. In all, one hundred and six (106) copies of the research instruments were filled correctly and utilized for the study, perhaps, the five (5) improperly filled copies and three (3) unreturned copies were discarded.

Measure

The participants completed a self-report measure designed to assess their research attitudes. The 10-item Linkert type instrument contains items that access knowledge, affections, and behaviors relating to academic research in a 5-point response format, with high scores indicating a positive research attitude and low scores revealing negative research attitudes. The reliability of the scale was obtained following a pilot study. Observation of the Cronbach's alpha coefficients revealed acceptable levels of internal consistency reliabilities of the instrument, which exceeded the cutoff rules-of-the thumb of .86 as recommended for study purposes (Kaplan & Saccuzzo, 2013).

Furthermore, the participants responded to a modified version of the Teachers Computer Self-Efficacy Scale. The 66 original version of the Teacher Computer Self Efficacy Scale (TCSES) was modified to fit the current research context. The 30 items Linkert-type five-point scale range from Strongly Agree. Agree, Undecided, Disagree, and Strongly Disagree. The maximum possible score is 150, and the minimum is 30. The highest score indicates the existence of high Computer Self Efficacy among the respondents.

Result

A cross-sectional design was employed in the study. Data from the respondents were analyzed using the statistical package for social sciences (SPSS, Version 23). Linear regression was run to test the hypothesis that computer self-efficacy would interact with research attitudes. The investigation revealed that computer self-efficacy statistically significantly predicted research attitudes in academia at F (1,104), 47.35, P<.000. An observation of the R^2 indicates that the predictor variable accounted for 11.7% of the observed variance in research attitudes.

Table 1:

Table showing the linear regression results for computer self-efficacy and research attitude

		95% CI for B						
	B	LL	UL	SEB	β	R^2	t	Sig
Model								
Constant	2.32	2.082	2.62	.133			17.59	.000
CSE	-.434	-.567	-.394	.061	-.476	.117	-7.83	.000

Note. CSE= Computer self-efficacy. B = Unstandardized regression coefficient; CI = Confident Interval; LL = Lower Limit; UL = Upper Limit; SEB = Standardized error of the coefficient; β = Standardized coefficient; R^2 = Coefficient of determination. *P<.000.

Discussion

The present study investigated the relationship between computer self-efficacy and research attitudes in academia. One hundred and six academic staff conveniently pooled from tertiary institutions completed a self-report questionnaire intended to evaluate their ability to use the computer and its impact on their research-related attitudes. The data analyzed using the regression model indicated a positive interaction effect between computer self-efficacy and research attitudes at F F (1,104), 47.35, P<.000. The result revealed that computer self-efficacy explained about 11.7% of the observed variance in research attitudes. It can be inferred from this result that the academic staff who scored high in computer self-efficacy are likely to show commitment to research activities. Research productions in academia are hugely computer-oriented. This means that the use of computers in research activities is inevitable and requires a substantial level of knowledge to operate. Indeed, the proliferation of academic research software designed to accelerate research activities is most complex and requires a certain level of computer competence. Consequently, the anxiousness accompanying the inability to use the computer system activates a kind of flight mode and potentiates the experience of negative attitudes. The finding corroborates the intimation suggesting that high computer self-efficacy exacerbates the intention to use the computer system, which ultimately leads to adopting the system for research activities and, thus, promotes a favorable attitude.

Conclusion

The present study investigated the variation in research attitudes in academia based on computer self-efficacy. A single hypothesis was formulated in the research, and the result of a linear regression analysis supported the assumption that computer self-efficacy will interact with research attitudes. Thus, the study concluded that computer self-efficacy is a significant factor in research attitudes in academia. The result has implications for research development in tertiary institutions. Moreso, the finding contributes to the literature by revealing computer self-efficacy as an antecedent of research behavior and practice in higher education. Perhaps, the self-report measures and sampling method limits the generalization of the finding. However, future research should adopt multiple data collection approaches and employ a

more comprehensive sampling method. This will increase the generalizability of the current result. Regardless, the present study offers crucial data for scholars, counselors, institutions, and lecturers to promote research-based attitudes.

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