

Self- Efficacy and Career Enhancement Of Bayero University Dental Graduates

By

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Traditionally, clinical student mentoring has focused on advancing mentees from novice to more respectable positions within clinical practices. Mentoring, a relationship where an expert (mentor) offers career, psychological or instrumental support to an individual with less experience (protégé), can enhance the protégé's career behaviour and development. With medical entrepreneurship on the rise, a focus on students' entrepreneurship and career development abilities is critical for leadership, team building, and business practices. The objective of this research was to understand the career decision-making self-efficacy factors relevant to the strategic framework of the faculty of dentistry, Bayero University career enhancement initiative. The participants were students and alumni of the faculty of dentistry, at Bayero University Kano. A survey research design was adopted and quantitative was used. Data was collected through a structured (close-ended) questionnaire using a career decision-making and self-efficacy scale of 25 items. Using Structural Equation Modeling (SEM), this research mapped the intricate relationships between the research variables, offering insights into how targeted career enhancement initiatives can bolster self-efficacy and guide students toward successful careers in dental practice. Findings from the study indicated that planning and goal selection were significant predictors of career choice, while self-appraisal, occupational information, and problem-solving showed varied influences. The study recommends a structured mentoring program for dental students and alumni targeted toward both academic and dental practice. This will provide them with professional networking opportunities, career planning, personal growth and entrepreneurial skills development.

Keywords: Career development, Decision-making, Dental Practices, Graduates, Nigeria, Self-efficacy, University students.

1. Introduction

The dental profession is an attractive career choice for high school students seeking admission to universities. However, many developing countries including Nigeria have a scarcity of dental professionals. In Africa, the average density per 10,000 population was 0.44 for dentists (Gallagher, et al., 2023); and in 2017, it was about 0.21 in Nigeria (Amedari et al., 2022). Generally, in labour market, researchers have identified skills shortage and skill mismatch among Nigerian graduates as many could not find productive work (Gallagher, et al., 2023, Joshua, et al., 2015; Olorunfemi, 2021; Olubusoye et al., 2023; Oluwatola et al., 2023; Pitan & Adedeji, 2021). The existing

labour market skills do not match with future social, economic and technological trends. These skills gaps have a negative impact on job performance, they increase workloads and supervision, and higher operating costs (World Bank, 2021).

In addition, to improved oral health care accessibility and availability of dental practitioners, it is imperative to develop an innovative model in response to the needs of the workforce (Amedari et al., 2022; Gallagher, et al., 2023). Employers are more interested in skills and competencies compared to degree certificates (Tejan & Sabil, 2019). Universities

must equip their graduates with the necessary skills that are sought by employers. Among the recommendations for improved dental care in the West African sub-region are capacity building and the development of human resources through suitable training and retraining programs (Fomete & Adebayo, 2018). Ajao (2012) emphasized the need to train more dentists to meet the current and future demands of professional dentists. Similarly, labour market policymakers have emphasized the role of career guidance in the productivity and employability of graduates (UNIDO, 2017).

Reacting to the changing demand of the labour market, the faculty of dentistry, at Bayero University Kano (BUK) was established in 2013 to address/ cater for the dearth of professional manpower in dental practices in Northwestern Nigeria. However, after the graduation of the first set in 2018, there were no clear goals for career and academic advancement. Although, graduates have general idea of dentistry but little is known about the underlying opportunities in dental specialties, professional networking, and higher education opportunities. It has been noted that students face some challenges when choosing a career, such as career planning due to a lack of information about professional opportunities and interests (Akhsania et al., 2020).

To meet the expectations of the labour market, it is imperative to develop a career development framework for Bayero University dental graduates. The Faculty of Dentistry - BUK

career enhancement initiative (now Alumni Resource Hub [ARH]) was launched in 2018 to support dental graduates. The ARH initiative is one of the first career enhancement frameworks at Nigeria University that centres on an evidence-based strategic framework. The Alumni Resource Hub is similar to a career service center that creates graduate employability strategies. One way to respond to calls for greater accountability from colleges and universities regarding graduate employment is through a career in services (Helens-Hart, 2019).

ARH provides individualized career mentoring by pairing mentees with mentors with relevant expertise and developing a customized career plan with milestones, skills, and actions that are targeted to the protégée's specific goals, challenges, and needs. This initiative aims to empower and accelerate graduates' personal growth, skills development, continuous learning, professional networking and global career adaptability. The process is facilitated by a dedicated Hub with virtual learning resources, workspace, and support services, which is managed by a faculty ARH committee and a Sub-Dean (Alumni) who is responsible for designing and implementing the ARH strategic plan framework.

Hence, career decision-making self-efficacy is relevant for Bayero University dental students because of work challenges due to the current labour market demand, and economic and social issues in Nigeria. Students with career decision-making self-efficacy will be able to respond positively to the environment as it is

relevant and a strong predictor of their job satisfaction and performance. Graduates who have a high level of self-efficacy can see opportunities and hold more optimistic views to pursue their careers (Tejan & Sabil, 2019). Developing strategies to assist dental graduates to better understand the labour market challenges and career path decisions is a worthy topic of research. As indicated by Tejan and Sabil (2019), self-efficacy held by university students plays an important role in enhancing their career success. Therefore, the purpose of this study was to examine the influence of self-efficacy on the career decision-making of Bayero University Kano dental graduates.

2. Literature Review and Theoretical Framework

This section comprises of literature review on the concept and empirical studies of the subject matter of the research.

2.1 Career Enhancement

Career is the progress and actions that people take all through their lives; it specifically relates to individual's occupations and composed of the jobs they hold, as well as the works they have accomplished over a certain period (Baruch, 2004; Brown & Lent, 2012; Guichard, 2001). According to Barnett and Bradley (2007), career enhancement is the process of improving and advancing one's professional skills, knowledge and credentials to achieve greater success and opportunities in their chosen career. Greenhaus et al. (2010) described career enhancement strategies as any kind of activity, behavior or experience that will enable an individual to meet their career goals. Career

enhancement implementation involves working through or with other people towards a relationship-oriented strategy (Ekmekcioglu et al., 2020). These include enhancing work objectives and plans, looking for means of improving knowledge and skills through advice and information from others about training or work assignments, working on diverse job tasks to improve skills, working extra hours and networking (Feij et al., 1995). Researches (Gould & Penley, 1984; Nabi, 2003) have identified three inter-personal career enhancement strategies for career success (i) communicating career goals and aspirations (self-nomination), (ii) developing a network of contacts for information and support (networking), and (iii) seeking guidance from mentors (mentorship).

Similarly, Gould and Penley (1984) identified seven strategies for career enhancement: First, creating career opportunities (developing expertise critical to one's department's operations and assuming leadership in areas appearing to have no current leadership). The second strategy comprises of extending work involvement (preoccupation with work-related issues outside the working environment). Thirdly, self-nomination, i.e. making your superiors aware of your accomplishments, presenting yourself as a person who gets things done and making your superiors aware of your career aspirations and objectives. The fourth strategy is seeking career guidance from an older, more experienced person or mentor. Fifthly, networking, i.e. contacts inside and/or outside the organization.

The sixth is opinion conformity ([an] individual thinks more highly of another, and finally, other enhance-ments, i.e. expressing a favorable evaluation of the superior..

2.2 Self-Efficacy

Bandura (1995) defined self-efficacy as the beliefs in one's capabilities to think, feel, and make an action or attain a goal. Self-efficacy is the belief about one's capability of showing skills and performing actions needed to achieve a desired goal in a specific domain or situation (Bandura, 1977; Maddux, 2002). Efficacy can be developed through mastery experiences, social models, social persuasion, and reducing stress reactions. Successes build a strong belief in personal efficacy, while failures undermine it. Social models inspire people to master similar activities, while social persuasion encourages greater effort and resilience. Reducing stress reactions and altering negative emotional proclivities can also help modify self-beliefs of efficacy.

Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. Career decision-making self-efficacy is described as a belief in a person's ability to be involved in education, work planning and decision making (Taylor & Betz 1983). It acts as a mediator between perceptions of selected academic majors, career expectations and the main affective commitment that are indirectly related to

positive expectations of results (Conklin et al., 2013). It was further explained that it is important not only to identify low self-efficacy decision making within clients but also to understand how to overcome it in career counseling (Conklin et al., 2013).

2.3 Social Cognitive Career Theory

Lent et al. (1994) developed social cognitive career theory which focuses on three domains. The first is how basic education and career interests are developed. Secondly, how educational and career choices are made and thirdly, how academic and career successes are achieved. The authors provide three segments for the career development: (a) interest, (b) the process of making a career choice involves choosing a goal, and (c) performance and persistence in career attainment (Lent et al., 1994). This career model focuses on the role of self-efficacy as predictor in career development. Personal goals are the most central, and they are more solid compared to the belief system applied in outcome expectations and self-efficacy. Personal goals determine how individuals organize, sustain and guide their individual efforts even though there is no external assistance. Self-efficacy is developed through life experience (gender, race, disability, personality, and predispositions). Social Cognitive Career Theory is applied to explain the way the various variables can result in a successful career.

2.4 Self Efficacy and Career Enhancement

According to Posnanski (2002), self-efficacy expectations are associated to professional

development when considering a person's views about career-related behaviors, educational and occupational choice, and performance and persistence in the implementation of those choices. They are represented in a person's conviction about the results of performance or conduct (outcome expectation) and perception of his or her capacity to carry out a specific task or activity (Hackett & Betz 1981). Hamzah et al. (2021) suggests that improving career development self-efficacy among university students can significantly enhance their career adaptability, as it directly correlates with their ability to achieve set goals. Students with goal-setting, planning and problem-solving skills often experience less career indecisiveness, and accurate self-appraisal and occupational information gathering can decrease career indecisiveness (Duru et al., 2021).

The benefits of self-efficacy beliefs in the areas of career development such as choosing academic and career interests, selection of academic and career options, and implementing academic and occupational plans (Betz, 2000; Buenconsejo & Datu, 2020; Lent et al., 1994; Lent et al., 1999). According to Rigotti et al. (2020), people might feel more in charge of their professional development and have higher expectations for their career-related self-efficacy when they integrate their social surroundings and self. Similarly, self-efficacy beliefs held by students were found to be predictive of career-related decisions and occupational performances, according to meta-

analytic research (Lent et al., 1994; Lent et al., 2002; Lent et al., 1999).

2. Methodology

A cross-sectional study was carried out at Faculty of Dentistry, Bayero University Kano. The population comprises of Bayero University dental students and alumni. A structured questionnaire was distributed online between September and October, 2023 to dental students and graduates using google forms. The questionnaire includes the Career Decision Self-Efficacy Scale – Short Form (CDSES-SF). The CDSES-SF consists of 25 items divided into five subscales: Self-appraisal (items 5, 9, 14, 18, 22), Occupational Information (items 1, 10, 15, 19, 23), Goal Selection (items 2, 6, 11, 16, 20), Planning (items 3, 4, 12, 21, 24) and Problem Solving (items 7, 8, 13, 17, 25). Respondents are asked to rate their level of confidence in completing specific career decision-making tasks using the following five-point Likert scale: No confidence at all (1), Very little confidence (2), Moderate confidence (3), Much confidence (4), and Complete confidence (5).

The data collected in the study were analyzed using SPSS 27 and STATA version 18. Descriptive statistics such as frequency and percentage were used to characterize the level of variability in this study. Inferential statistics was used as the frame of statistical computations applicable in making inferences from the findings. The Pearson product moment correlation was used to establish the direction and magnitude of relationship between two variables (Babbie, 2010).

4. Results

This section consists of data analysis, presentations and interpretations.

4.1 Characteristics of Respondents

Table 1: Demographic Profile

Demographic	Particulars	No. of Respondents	% of Respondents
Gender	Male	55	52
	Female	51	48
Age	16-23	35	33
	24-31	30	28
	32-39	41	39
Status	Alumni	33	31
	Students	73	69
Career interest	Practice	36	34
	Academic	30	28
	Both	40	38
Total		106	100

Source: Author's computation using SPSS 27

Table 1 presents a detailed breakdown of the demographic characteristics of respondents in a study on career enhancement initiatives for Bayero University dental students and alumni. The gender distribution of the respondents shows a near-equal representation, with 55 male respondents (52%) and 51 female respondents (48%). This balanced gender ratio suggests that both male and female perspectives are well-represented in the study. The respondents are divided into three age groups. The largest group is the 32-39 age range, representing 39% of the total respondents. This age group may consist of individuals who have completed their undergraduate studies and are likely more experienced in their careers, whether in practice or academia.

In terms of status, 31% of respondents are alumni, while the remaining 69% are current students. The higher percentage of student respondents suggests that the faculty has more students enrolled in the program as compared to

dental graduates. Alumni, who make up 31% of the respondents, bring a different perspective, likely reflecting on how their career decisions have played out post-graduation and how career enhancement initiatives could have been more effective in preparing them for professional challenges.

Career choice is a critical factor examined in the study, with respondents divided into those interested in practice (34%), academia (28%), or both (38%). The largest group is those interested in both practice and academia (38%), indicating a significant interest in dual career paths among the respondents. This suggests a need for career enhancement initiatives that support the development of skills and opportunities in both areas. The 34 percent and 28 percent documented on interested solely in practice and interested solely in academia respectively highlights the importance of tailored initiatives that cater to specific careers.

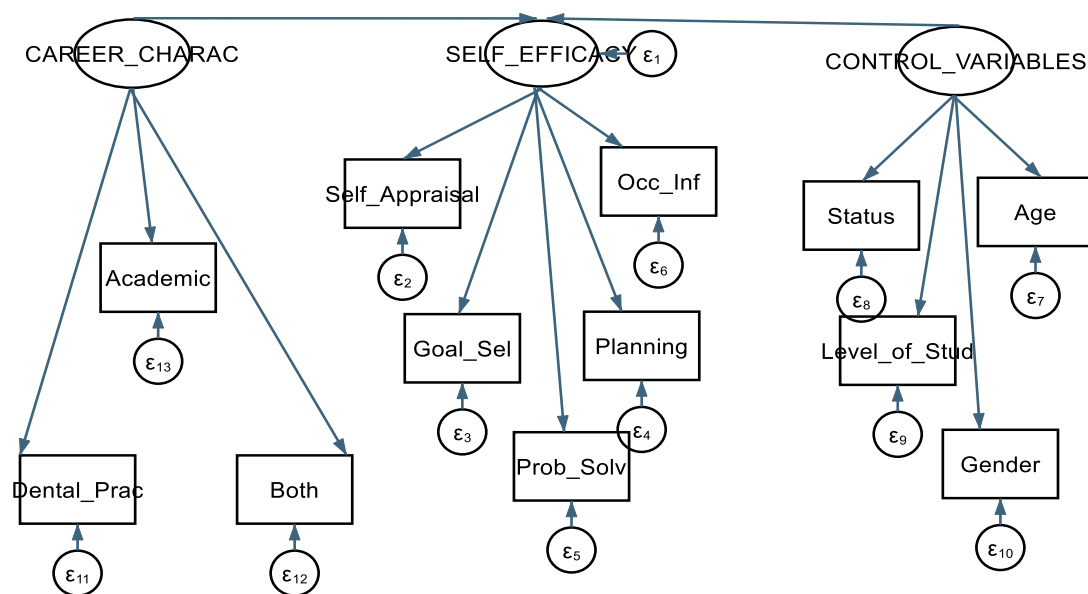


Figure 1: Path Diagram Showing Relationships Among Study Variables

This study explores the influence of career enhancement initiatives on the career choices and self-efficacy of dental students and alumni at Bayero University, Kano. Figure 1 suggests that career choices among dental students and alumni are not isolated decisions but are influenced by their perceived self-efficacy, which is further affected by demographic factors such as age, gender, educational status and

educational level. The relationship between these variables is integral in understanding how students and graduates navigate their professional journeys in the field of dentistry, whether in practice, academia, or a combination of both. These variables interact to shape an individual's confidence and effectiveness in their career path, influencing their ability to achieve success in their chosen field.

4.2 Relationship Between Career Choice and Self-Efficacy

Table 2: Correlation of career choice and self-efficacy

Self-Efficacy Variables	Academic Only	Dental Practice Only	Both Academic & Dental Practice
Self-Appraisal	0.65	0.82	0.82
Occupational Information	0.97	0.87	0.87
Goal Selection	-2.4	-0.23	-0.23
Planning	0.66	0.72	0.72
Problem solving	0.92	0.82	0.87

Computation of Correlation Analysis Using STATA 18

Table 2 shows the relationship between career choice and self-efficacy of Bayero University Dental Graduates. The analysis

focused on five key self-efficacy variables: Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem-

Solving. The results of the correlation analysis reveal several significant insights into how self-efficacy influences the career decisions of these graduates. The findings demonstrate that self-efficacy plays a crucial role in determining career choices among Bayero University dental graduates. Specifically, there are strong positive correlations between self-efficacy in Self-Appraisal, Occupational Information, Planning, and Problem-Solving and the likelihood of pursuing a career in academics, dental practice, or both. For instance, the high correlation coefficients for Self-Appraisal (0.65, 0.82, 0.82 and Problem Solving (0.92, 0.87, 0.87) suggest that graduates who have a high level of confidence in their ability to assess their skills and solve complex problems are more inclined to commit to a specific career path, whether in academics, dental practice, or a combination of both. This implies that graduates who perceive themselves as competent and resourceful are more likely to make decisive career choices that align with their perceived strengths.

Conversely, the negative correlation observed between goal selection and career choice (with coefficients of -0.24, -0.23, and -0.23) suggests a different dynamic at play. Graduates with higher self-efficacy in goal selection appear less likely to commit to a single career path, which may indicate a broader consideration of career options or a reluctance to specialize too early in their careers. This finding could reflect the

complexities and uncertainties faced by graduates as they navigate their career paths, potentially leading to a more exploratory approach to career planning. The negative correlation could also suggest that these graduates value flexibility and adaptability, preferring to keep their options open rather than committing to a specific career track. This has important implications for career guidance, as it suggests that graduates with high self-efficacy in goal selection might benefit from counselling that helps them align their broad career goals with more concrete plans, ensuring that they can capitalize on their strengths while also making informed decisions about their future.

4.3 Self-Efficacy Factors and Enhancement of Graduates' Career Choice.

The regression analysis is used to determine the critical self-efficacy factors that influence Bayero University Dental Graduates' career choices, specifically among the options of "Academic," "Dental practice," and "Both" (academic and dental practice). The regression Table is provided in Appendix 2. The independent variables examined were Self-Appraisal, Occupational Information, Goal Selection, Planning, and Problem-Solving. The model revealed that planning and goal selection were significant predictors of career choice, while self-appraisal, occupational information, and problem solving showed varied influences. The model's goodness-of-fit, with a Log likelihood of -62.818516

and a Pseudo R² of 0.6325, indicates that approximately 63.25% of the variance in career choice is explained by the included variables, demonstrating a strong explanatory power of the model.

The analysis revealed that Planning is a significant positive factor for choosing both "Dental practice" and "Both" career paths over an "Academic only" career. Specifically, a unit increase in planning significantly raises the likelihood of selecting a "Dental practice" career (coefficient = 1.115771, $p=0.026$) or a combination of both academic and dental careers (coefficient = 1.457655, $p=0.003$) compared to an "Academic only" career. This suggests that graduates who engage in strategic planning are more inclined towards practical, career-oriented paths. Conversely, Goal Selection showed a significant negative relationship with the choice of "Dental only" (coefficient = -0.3111373, $p=0.008$) and "Both" careers (coefficient = -0.5328857, $p=0.007$), indicating that a strong focus on goal selection may lead graduates to prefer an academic career over other options. Interestingly, Problem Solving was a significant negative predictor for choosing a combined career path ("Both" vs. "Academic only"), with a coefficient of -1.303856 ($p=0.026$), suggesting that those with strong problem-solving skills may lean towards a singular, focused career choice. The non-significance of Self-Appraisal and Occupational Information suggests that these factors may not be

crucial in determining career choice among the graduates in this context.

4.4 Discussion

The findings from the analysis of career enhancement initiatives for Bayero University dental students and alumni offer significant insights into the relationship between career choices, self-efficacy, and demographic factors. By examining the relationship between career choice and self-efficacy of Bayero University dental students and alumni, this study seeks to expand knowledge in career decision-making self-efficacy research. These insights are crucial for understanding how dental students and alumni make informed decisions about their careers.

First, our research showed that self-efficacy has an influence on the career paths of dental students and alumni. Self-efficacy is crucial in today's educational environment since students must possess competencies that are suitable for their unique needs to be prepared for the workforce. Researchers who examined students' levels of self-efficacy in making decisions about their careers found that students who were unsure of their career choices also showed lower levels of self-efficacy, indicating a lower level of trust in their ability to complete tasks that would allow them to make decisions about their careers (Khot, 2022; Martini et al., 2023; Malahayati & Wulandari, 2018). Specifically, dental students in Turkey reported that there is high self-efficacy among students (Ersan et

al., 2017). Previous research revealed a relationship between career decisions and self-efficacy. Researchers have found that students' identification of the self-efficacy domain was crucial in shaping their confidence and promoting their interest in a STEM career, particularly one that enabled them to carry out research (Amelink et al. 2015; Kelly & Hatcher, 2013). This relationship suggests that the confidence individuals have in their abilities to assess their skills, acquire relevant occupational information, set goals, plan effectively, and solve problems significantly impacts whether they opt for a career in dental practice, academia, or a combination of both.

The most important predictors of career decision-making self-efficacy among Bayero University dental students and alumni were self-appraisal and problem-solving skills. Students who exhibit high levels of self-efficacy, particularly in areas such as self-appraisal and problem-solving, tend to have a clearer direction in their career choices. This could be because individuals who are confident in their abilities to evaluate their strengths and weaknesses are better equipped to identify career paths that align with their skills and interests. Furthermore, those who are adept at solving complex problems may feel more prepared to face the challenges associated with specific career paths, making them more likely to commit to a particular direction.

Conversely, the negative correlation between goal selection and career choice highlights a more nuanced dynamic. Graduates with high self-efficacy in goal selection may be less likely to commit to a single career path, reflecting a broader consideration of available options. This result is consistent with other research on dental students. The participants' lowest self-efficacy score was in goal-setting for professional decision-making (Yoon & Park, 2022). According to Social Cognitive Theory, self-efficacy is a critical factor in determining one's motivation and performance in achieving their goals. In the context of career planning, self-efficacy can be an essential predictor of one's ability to set and accomplish career goals (Rose et al., 2023). To assist students in the dental faculty in establishing their professional goals, career education programs are necessary. As suggested by Jo (2021), clearly defined goals have a positive effect on proactive job preparedness and career success.

Enhancing goal-setting abilities among dentistry students can lead to higher career self-efficacy. In "goal setting," everyone needs to set specific goals to carry out career behaviour. Such goals should be based on outcome expectations obtained through expectations and behaviours about self-efficacy. Amelink et al. (2015) found that mentorship can boost dental students' goal-setting abilities, which in turn predicts increased career self-efficacy. According to

Komarraju et al. (2013), the mentorship received by students is beneficial, especially through feedback and the opportunity to communicate with an expert increases self-efficacy. In their study, learner elucidated the infectious nature of their mentor's passion. stated that experiences in which they were given mentor roles contributed to their increased sense of self-efficacy (Komarraju & Nadler, 2013).

In this study, we also examined the effect of demographic factors (age, gender, educational status, educational level) on career decision-making self-efficacy. The study reveals that various factors impact self-efficacy, with some showing weak correlations. Age positively correlates with self-appraisal and problem-solving, suggesting older students have higher confidence. However, demographic factors and occupational information may not be the primary drivers of self-efficacy among Bayero University dental students and alumni. Gender does not significantly influence self-efficacy, indicating gender parity in the academic environment. Both male and female students may have similar confidence in their chosen career paths. This is in contrast to prior researches (Choi & Lee, 2019; Hwang & Yu, 2022) that reported self-efficacy and career choice are related to individual characteristics of dentistry students. Individual characteristics have been reported to have a significant influence on career choice,

decision-making, and career decision-making self-efficacy (Brown, 2002).

For the career choice of dental graduates, the degree of comprehension among dental students and alumni was assessed. There is an increasing need to acquire abilities to handle a variety of responsibilities due to the expanded position of dentists, which includes managing dental practices. To do this, core dental practice competencies should be determined by the objectives, learnability of dental education programs, and curriculum composition of the programs, while career planning in mentorship programs should be geared toward goal setting in dental students and linked to current dental competency levels. The majority of students desire to pursue both an academic and dental career; those who choose to pursue both do not necessarily have high or low self-efficacy. As suggested by Romero Galisteo et al. (2022) entrepreneurial skill development is crucial to health professionals. Furthermore, as anticipated, it will be feasible to alter and impact university-based students' views toward entrepreneurship.

5. Conclusions and Recommendation

The results of the study have shown that career choice and demographic factors have a significant influence on the self-efficacy of Bayero University dental students and alumni. This finding is consistent with previous studies on the

career decision-making self-efficacy of university students. Therefore, universities should provide career counseling, and a structured mentorship program for the current students and younger alumni that focus on enhancing entrepreneurial skills for successful dental practice. The goal is to enhance career planning and personal growth which have been identified as the most important factors for career enhancement of graduates.

5.1 Limitations and Suggestion for Further Studies

This study investigated career decision-making self-efficacy among dental students and alumni (Faculty of Dentistry) in only one public Nigerian university. It is suggested that similar studies should be conducted with students across the College of Health Sciences, from other disciplines and from various other public and private higher education institutions in Nigeria.

A cross-sectional self-reported data collection technique was used for the current study. The researchers recommend that future researchers use a longitudinal strategy to examine the relationships tested in this study in follow-up investigations at the workplaces of the same generation of students after their graduation.

Furthermore, since career decision-making is generally important to the smooth transition of university students from an educational setting to the competitive labour market, the researchers recommend that this study be replicated in other

developing countries in Africa where youth or graduate unemployment poses a serious challenge.

The sample size selected in this study was limited. Perhaps a larger sample size would provide greater confidence in the conclusions drawn from this study.

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