

THE INFLUENCE OF COGNITIVE ATTRIBUTES AND ENTREPRENEURIAL EVENT PARAMETERS ON ARCHITECTURE STUDENTS' ENTREPRENEURIAL SELF-EMPLOYMENT INTENTION

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Abstract

The 21st-century economy needs creative, imaginative, and enterprising architects as graduate unemployment rises progressively. The primary goal of integrating entrepreneurial education into Nigerian higher education institutions is to produce graduates who create jobs rather than seek them out; nevertheless, it is uncertain if this initiative has achieved its intended purpose in all fields of study at some universities. In this context, this study used the theory of planned behaviour and entrepreneurial orientation perspective of the service-based ideology to evaluate how architecture students' cognitive attributes (attitude, perceived behaviour control and subjective norms) and entrepreneurial event parameters (attitudes towards commercial awareness, perceived value creation, and societal factors) influenced their intention to pursue self-employment upon graduation following their participation in a course on entrepreneurship. Using information gathered from 239 architecture students at Ahmadu Bello University in the Department of Architecture, six hypotheses were formulated and tested with the data collected from the students. The research's findings showed that while subjective norms and societal factors have no apparent effect, attitude, perceived behaviour control, attitudes towards enterprise awareness and perceived value creation were strong predictors of architecture students' intention toward self-employment. Additionally, attitudes toward enterprise awareness are more positively significant and have a greater influence. The research's conclusions might have a footprint on educational policy, stakeholders in the architectural education field, and, notably, the transformation of generalist entrepreneurial education into a professional-based (specialist) education for enterprises.

Keywords: Architecture, Commercial awareness, Entrepreneurial self-employment intention, Value creation

INTRODUCTION

Globally, the past few decades have witnessed graduates from Higher Education Institutes (HEIs) facing increased competition for jobs and unemployment. Both technologically advanced and less industrialized nations and underdeveloped nations, including Nigeria, are struggling with the issue of graduate unemployment. Even though Nigerian unemployment was 22.6% in 2018, Adenike (2021) claimed that the rate in Nigeria increased from 27.10% in the second quarter to 33.30% in the fourth quarter of 2020, and graduates' unemployment was 57.32%. Concern over the adverse consequences for graduates' capacity to find jobs or

unemployment, which could lead to more profound societal problems, is growing among both the Nigerian government and the general populace. One of the most promising ways to solve graduates' joblessness and unemployment has been suggested and promoted by prominent researchers and government policymakers as self-employment through entrepreneurship and innovation development across the HEIs (Omene, 2021; Olufemi, 2020; Kola et al., 2019). More importantly, entrepreneurship and self-employment may significantly boost and strengthen the economy of any nation. Prominent scholars, the federal government, and policymakers have offered suggestions and promoted self-employment through entrepreneurship and innovation development across the HEIs as one of the most promising solutions to graduates' unemployment and joblessness (Ogbonna & Dare, 2020). Also, Joseph (2020) reported that the advancement and transformation of any nation's economy are possible through the dissemination of entrepreneurial knowledge at all educational levels.

In addition, notable studies have advocated and acknowledged that the entrepreneurial university has advanced above the traditional university in terms of actual contributions to the development of the modern-era economy (Lynch, et al., 2021). The study reinforced the requirement for employing the design philosophy notion in order to combine technological and entrepreneurial skills. Gafar et al. (2016) acknowledged the exponential rise of literature on academic entrepreneurship, though few studies have been done on entrepreneurship in the field of architectural training and professional practice (Ilerisoy et al., 2021; Sarooghi et al., 2019; Gafar et al., 2017). Among the few available studies in architectural entrepreneurship are the works of Vosloo (2016) and Gafar et al. (2016), which were in favour of a paradigm shift in architectural curriculum development towards more entrepreneurial diversity in the professional training of graduating architects. They noted that architects with an entrepreneurial mindset have numerous opportunities in the contemporary economy, particularly in today's competitive job market. This implies that by focusing on developing skills such as commercial and enterprise awareness, business creativity, and innovation, students in the architectural and construction industries can discover new career paths and specializations through divergent entrepreneurial opportunities. Also, it is imperative to possess an entrepreneurial mindset and a service-oriented approach to accomplish great things. When these two qualities are combined, architects may broaden their horizons and take on innovative projects (not only design-related ones) that set them apart from their competitors. This is particularly critical in today's job market, where staying ahead of the curve and constantly improving and innovating are vital. So, entrepreneurship is one of the indispensable ingredients of success in any field of study, especially the profession of architecture, which is heavily dependent on a country's healthy economy.

Oke and Arowoia (2022) observed that among the few problems the profession is currently facing are those brought on by technological advancement, rivalry amongst related professionals, and a competitive economy. On the contrary, Ayo-Odifiri (2023) stated that in the current competitive digital economy, architects may be able to pursue innovative business initiatives, grow their market share in emerging trends, and generate new job opportunities through an entrepreneurial attitude and effective service quality. Hence, by working collaboratively and staying focused on providing value to the society in which architects practice, they can achieve great economic sustenance and deliver the highest quality services

to their clients. Pursuing an entrepreneurial career as an architect could offer a host of benefits, including self-fulfilment, independence, and financial freedom. In addition, Nnaemaka-Okeke et al. (2019) and Abdullahi (2023) reaffirmed that entrepreneurship can drive value creation through innovation, career enrichment, and economic development for any field of study, notably architecture because it is anchored on an innovation-driven and knowledgeable clientele with highly subjective requirements across the globe. Therefore, to thrive as an architect in the current economic reality, it is paramount to be an entrepreneurial architect, and it is crucial to stay current with the global economic revolution and contemporary architectural practices.

In light of this, the research conducted a comprehensive analysis of the various factors that influence architecture students' entrepreneurial self-employment intentions upon graduation after participating in their university's entrepreneurship education program. To achieve this, a validated theory of planned behaviour (TPB) developed by Ajzen (2020) and an entrepreneurial events model were used to examine the impact of individuals' cognitive attributes (attitude, behaviour control, and societal norms) and entrepreneurial events parameters of attitudes towards commercial/enterprise awareness, perceived value creation, and subjective norms on the students' self-employment intention (Soomro et al., 2020). It is worth noting that there is little existing research on how the perception of entrepreneurial self-employment intention is determined in the disciplines of the built environment, particularly in the architectural field of study.

This study is significant because it helps to comprehend some of the factors that come into play when architecture students consider entrepreneurial self-employment. Also, it is relevant to determine if the students' cognitive attributes and the three entrepreneurial orientation parameters (enterprise awareness, value creation, and subjective norms) have an impact. At this point, it is important to assess the validity and veracity of the architecture students' entrepreneurial self-employment intentions. In the end, the research findings could provide valuable insights into the decision-making process of students when it comes to exploring entrepreneurial self-employment opportunities, which could provide them with focus and direction on their career path before graduation and possible expectations in the architectural professional practice. The research also contributes to a better understanding of cognitive models and their applicability in the context of architecture education. To summarize, this research can provide significant theoretical and practical advancements in the realm of entrepreneurial education within Nigerian public universities, specifically in the architecture field. Finally, succeeding sections provided brief information on the research location.

This study was conducted at the first school of architecture in Nigeria, located in Zaria, Kaduna State, which is in the northern region of the country (see Figure 1). The study is one of the pioneers of research on entrepreneurship education in the Department of Architecture at Ahmadu Bello University, Zaria. The justification for the research location is that most of the past studies in entrepreneurship were carried out in the western and eastern regions of Nigeria, and few studies focus on entrepreneurship in northern Nigeria, particularly in the architecture domain. Lawan et al. (2015) and Adenike (2021) noted that Northern Nigeria is

the region with the largest population, despite limited employment opportunities available for graduating students.

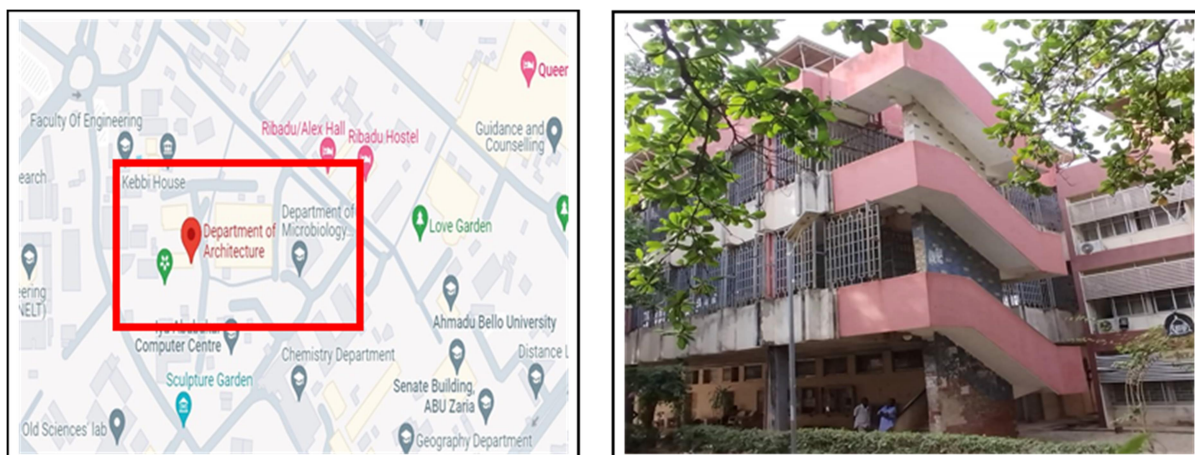


Figure 1: Location map and picture of the Department of Architecture, Ahmadu Bello University, Zaria

Source: Fieldwork (2023)

LITERATURE REVIEW

Concept of Entrepreneurship, entrepreneur and self-employment

Entrepreneurship and entrepreneurship are crucial to the economic progress and growth of nations. Their contributions include creating new businesses, innovative products, and production processes, as well as other advancements that benefit countries and the global economy. The term "entrepreneurship" is often used interchangeably with "self-employment," and it is considered a powerful tool for combating unemployment (Gujrati et al., 2019). Gafar (2016) observed that entrepreneurs often begin as self-employed individuals (such as independent business owners, independent workers or small contractors) and go on to create multiple ventures, which are key characteristics of successful entrepreneurs. In the context of this research, university students, especially those studying architecture, are not expected to become business owners; they are encouraged to adopt an entrepreneurial mindset and repeatedly create new business ventures. In the context of this research, the students' desire to start their own business is referred to as an entrepreneurial self-employment intention.

It is widely accepted that entrepreneurs are crucial to the success of various sectors of the economy. Gafar (2016) defines entrepreneurs as the architects of any vibrant economy. He further expounded that entrepreneurs are the builders of any economic boom. Any healthy economy is supported by its entrepreneurial community. They are the architects of innovation, growth, and advancement, as Cunningham et al. (2022) and Fernandes (2022) have noted. Without their vision, passion, perseverance, and hard work, the world would be a much less dynamic and exciting place. In the same way that architects give the physical world its forms, and shapes and make it attractive, entrepreneurs enrich living and life. Entrepreneurs are strong and demanding people who are chasing their ideas and adding value for others. This is not a simple task, whether one is beginning a new company or rebranding an existing one,

launching new products or services, or just making a bold move in the direction of their main objective. Consequently, the entrepreneurial intention is vital for the collective success and fulfilment of an entrepreneur. At this point, to be an entrepreneur entails to keep designing, creating, building, and encouraging people to improve and change the world to a better place.

In addition, entrepreneurs come up with innovative business ideas across all fields, including the creative sector, such as architecture, and make significant contributions to socioeconomic progress. However, the current job market is oversaturated, leading many recent graduates to struggle to find paid employment. This is a major challenge for governments worldwide, and it is especially critical in Nigeria due to its large population and growing youth unemployment rate. Encouraging university students to pursue self-employment opportunities instead of traditional wage-based careers is a preferable solution to this problem, as argued by Otache et al. in 2020. Unfortunately, the private sector, particularly the construction industry, which could provide many jobs for young architects and graduating allied professionals, is not doing well due to the poor state of the Nigerian economy. Moreover, employment opportunities in Nigeria's public sector are nearly nonexistent, even though the few that are available are mostly reserved for citizens with political influence. Political influence is frequently more important than competence, skills, and level of educational qualifications. Young graduates have greater difficulties because of this, among other factors (Adenike, 2021). Gafar et al. (2017) stated that if Nigerian governments provide practical support to develop entrepreneurs by learning by doing and encourage graduates from diverse academic backgrounds to start their businesses, this might lessen the issue of young unemployment in all academic disciplines, which would decrease the number of graduates looking for employment and increase the number of job creators in the Nigerian economic climate.

The decision to become an entrepreneur is primarily influenced by various factors, such as attitudes, perceived control, and the norms of society. These elements fuel personal ambition, career fulfilment, and self-employment aspirations (Ajzen, 2020). Numerous studies have been done on entrepreneurship, including ones that examine the relationship between education and outcomes for self-employment in various regions. However, the findings of these studies have been subject to diverse opinions and discussions (Law & Breznik, 2017; Iwu et al., 2022; Otache et al., 2022). This article aims to assess the impact of entrepreneurship education in higher education institutions within the context of architectural training in the university environment.

As per the opinions of many professionals in the architectural construction industry and architectural educators, entrepreneurship requires a complex intellectual process (Gafar, 2016). Researchers like Aigbedion et al. (2021) have acknowledged that self-employment requires intricate mental navigation. Ajzen's (1991) theory of planned behaviour was utilized by Kisubi (2021) to gain a better understanding of the cognitive processes underlying a university undergraduate student's intention to start their firm. Al-Jubari et al. (2019) and Tantawy et al. (2021) have also recognized the theory as a useful model for explaining the decision to launch a firm. Ultimately, a person's willingness to work for themselves (self-employed) is determined by their behavioural mentality, perceived startup process control, and subjective norms. The cornerstone of this study is the idea of using cognitive psychology

combined with the entrepreneurial orientation intention model, and numerous studies have confirmed this theory or model as valuable. However, further empirical research is required to develop a comprehensive understanding of the variables influencing entrepreneurial self-employment intention, especially among the graduating students in the Department of Architecture at Ahmadu Bello University, Nigeria.

Theoretical framework and hypotheses development

The development of entrepreneurial self-employment intentions is a vital component of entrepreneurship. It serves as the foundation for all factors that influence the commencement and expansion of entrepreneurial behaviour and activities. While factors such as insufficient entrepreneurship education, a lack of societal and financial support, and other related obstacles are often viewed as impediments to entrepreneurial intention and subsequent business startup or venture creation, it is the entrepreneurial intention that truly contributes to the establishment and growth of entrepreneurship. Architects with a business-oriented mindset who possess strong entrepreneurial intentions achieve self-reliance, self-recognition, and self-fulfilment, resulting in the creation of multiple business ventures, innovation, and value generation for new and existing firms and companies (Tamm et al., 2022). This demonstrated that it is the mindset of entrepreneurs that directs their attention, experience, and actions towards adopting a business concept and determining the structure and direction of their venture creations. Because of this, entrepreneurship research pays more attention to the intentions of students.

Even though the entrepreneurial intention of university students has been studied from a different academic domain and diverse perspectives, the findings are still controversial and inconclusive, and as a result, there hasn't been an integrated investigation or comparative research on the mechanisms and results related to how entrepreneurial self-employment intention may be influenced by multiple variables or constructs (Ilerisoy et al., 2021). Therefore, understanding the multidirectional variables influencing students' entrepreneurial self-employment intentions is crucial (Silva, 2021). In this study, the researcher employs two well-known models (the Theory of Planned Behavior (TPB) and the Entrepreneurial event (EE) Models) to investigate how established multidirectional variables could influence students' entrepreneurial self-employment intentions in the Nigerian prestigious schools of architecture.

Connectivity of TPB and EO models in Entrepreneurial Self-employment Intentions

In studies about ambitions for entrepreneurship and self-employment, scholars have established a correlation between the TPB and EO models (Silva et al, 2021; Kisubi, 2021). The TPB has emerged as one of the most widely used theories in recent times for explaining and predicting individual behaviour, including entrepreneurship. Scholars in entrepreneurship, in particular, utilize the TPB to elucidate and forecast planned behaviours, which may include starting and expanding a business venture or firm (see Figure 2).

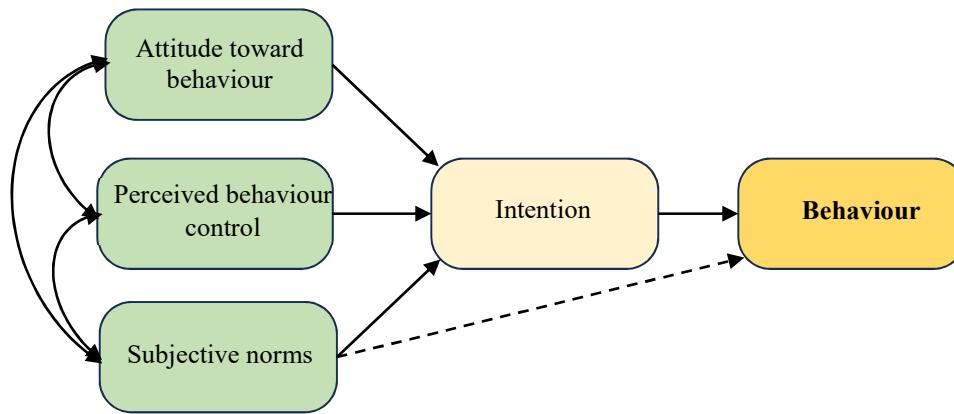


Figure 2: Theory of planned behaviour model

Source: Ajez, (2020)

Antecedents of the theory of planned behaviour (TPB) have been examined in various studies, as reported by Iwu et al. (2020), to determine their impact on an individual's entrepreneurial intentions. Kisubi (2021) has reiterated the importance of entrepreneurial intentions when choosing a professional path, whether it be paid employment or self-employment. This reaffirms the claim made by Iwu et al. (2020) about the significant role that entrepreneurial intentions play in shaping one's career trajectory. It is essential to consider these aspirations carefully when deciding which path to pursue (see Figure 3). To fully understand this relationship, it is important to take a comprehensive approach since there are various dynamic factors at play. These factors encompass skills related to business awareness, business reality, business creativity and innovation, human resources, mastery of venture or project financial management, and a willingness to take risks. When determining a professional path, it is essential to consider several factors. These include business acumen, creativity, financial management abilities, and a willingness to take risks.

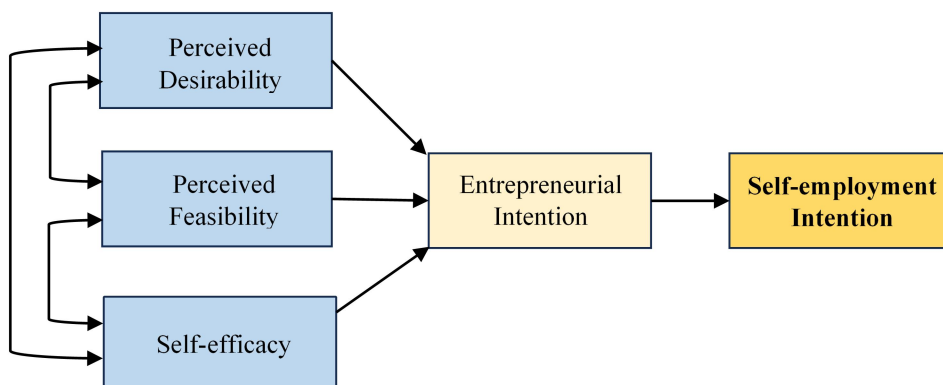


Figure 3: Entrepreneurial event model

Source: Soomro et al., (2020)

According to Towers et al. (2020), these are all significant components that can impact one's career trajectory. Consequently, it is crucial to thoughtfully evaluate and contemplate these aspirations when deciding which path to pursue. All of these factors are intertwined with an

architect's core responsibilities for ensuring effective project delivery in today's highly competitive economic environment. As Gafar (2016) pointed out, in today's competitive knowledge economy, the architects who will succeed are those who possess an entrepreneurial spirit. The graduating architects need to develop these essential skills to achieve success in the field of architecture. By inculcating these skills and determining the best path forward, every graduate can position themselves for a rewarding career as an architect.

Creating a cohesive theoretical framework for entrepreneurial architectural education can greatly benefit from the use of conceptual statements like these. They provide a strong foundation for understanding the critical components that contribute to success in this field. By reflecting on these statements and evaluating which path might be the best fit, aspiring architects can better prepare themselves for economic uncertainty. In addition, this mindset could also aid in better understanding the factors that lead to successful entrepreneurship by connecting intention models with key entrepreneurship objectives, such as understanding the structure of commercial awareness, and business reality, and improving students' ability to create value. As a result, universities can better equip architecture students with the skills they need to excel in today's highly competitive business world. Numerous reputable scholars, including Al-Jubari et al. (2019) and Silva (2021), have utilized the TPB model as a foundational framework for their studies on entrepreneurial intention. Additionally, Uctu and Al-silefanee (2023) as well as Ranga et al. (2019) have utilized the entrepreneurial event model (see Figure 3). This study adeptly integrates facets of both models to comprehensively investigate the entrepreneurial self-employment intentions of architecture students as presented in Figure 4.

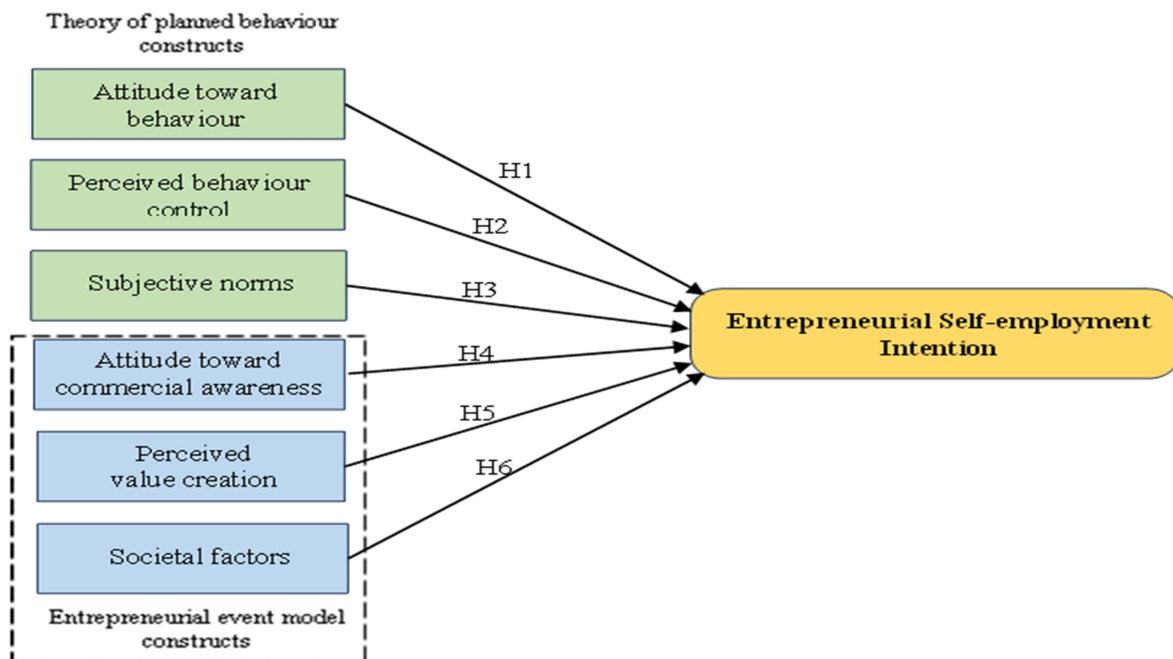


Figure 4: Proposed integrated model

Source: Adapted from Fayolle, (2005)

To address the objectives and research problems of this study, a comprehensive theoretical framework that encompasses three essential dimensions is put forward. The first component focuses on the TPB dimensions, including attitudes towards behaviour, perceived behavioural control, and societal factors. The second dimension is centred on entrepreneurial event parameters, including attitudes towards commercial awareness, perceived value creation, and subjective norms. Finally, the third dimension is the entrepreneurial self-employment intention (EI) as the dependent variable. Figure 3 provides a visual representation of the conceptual framework developed in this study, which aims to provide answers to the research questions at hand.

Law and Breznik (2017) examined the entrepreneurial intentions of engineering discipline master's students at one of eastern Nigeria's universities. The study found that students' attitudes, subjective norms, and perceived behavioural control were significantly correlated with their entrepreneurial intention to be self-employed after they graduate from the university. However, the study also revealed that personal attitude, subjective norms, and perceived behaviour only accounted for less than ten percent of the variability in entrepreneurial intention. This suggests that there may be other factors at play when it comes to pursuing entrepreneurship for self-employment, but it is still encouraging to see that such a significant number of students are interested in starting their businesses. On the account of the above literature, this study postulated that:

- H1. Attitude has a positive influence on the architecture students' entrepreneurial self-employment intention.
- H2. Perceived behavioural control has a positive influence on architecture students' entrepreneurial self-employment intention.
- H3. Subjective norms have a positive influence on the architecture students' entrepreneurial self-employment intention.

Iakovleva and Kolvereid (2009) conducted a study to investigate the effects of personality traits, demographic factors and government support on entrepreneurial self-employment intentions among Nigeria's university students. Data were collected from 487 final-year engineering and business university students by using a convenient sampling method. The findings revealed that engineering students have lower entrepreneurial intentions as compared to business students. In addition, students who majored in business programmes have higher self-employment intentions as compared to those in engineering majors. Similarly, students with a good understanding of business principles and experience have higher entrepreneurial and self-employment intentions as compared to their counterparts in engineering, who have a technical background in product development and lack the knowledge for the commercialization of the products developed. Finally, the results of this study reveal that business awareness and perceived behaviour control are the two variables that most significantly influence entrepreneurial and self-employment intentions.

Gafar's study in 2016 surveyed the faculty of environmental students at the Ahmadu Bello University in Nigeria. The findings showed that because of the inherent enterprising nature of Fine Art and Industrial Design, their students have higher entrepreneurial intentions toward

self-employment than their counterparts (Architecture, Building and Urban and Regional students). Likewise, students who have parents with good business awareness and experience have a positive impact on their perceived desirability and feasibility of venture creation. Gafar et al. (2016) reported that attitudes toward business reality and perceived value creation towards rebranding existing ventures explain entrepreneurial intentions and self-employment among real estate management students in Malaysian public universities.

In this competitive economic dispensation, perceived value creation is the strategy of improving what is considered a benefit or constructive advantage that clients and consumers associate with the delivery of services and products by architects. The practice of architecture as a profession has evolved beyond its age as a service provider to become a business-oriented profession in today's economic reality. As an architect, a producer, or a provider of services, it entails comprehending and satisfying the demands and preferences of clients and consumers. When embarking on a new venture creation or establishing an enterprise or firm as an architect, the desirability of the underlying idea is of crucial importance. The EO and TPB models outline this concept, which is akin to attitude towards behaviour. For students, their attitudes towards commercial awareness and enterprise cognizance play a significant role in shaping their interest in entrepreneurship and self-employment (Gafar, 2016). Similarly, the concept of perceived feasibility, as proposed in the EO's model, aligns with TPB's model of perceived behavioural control. For students, their perceived capacity to create value is a key determinant of their inclination towards entrepreneurship and self-employment as a career choice. Notable scholars have asserted that in any given geographical context, societal factors also explain entrepreneurial intention (Fayolle, 2005). According to Rai et al. (2017), how society views entrepreneurship has a significant impact on students' career choices. Subjective norms play a crucial role in determining if students are more or less inclined to pursue self-employment as a viable career option. This effect is especially noteworthy for those who have a strong or weak inclination towards entrepreneurship, as societal factors can significantly influence their decision-making process.

On account of the above assertions, this study postulated that:

- H4. Attitude towards commercial/enterprise awareness has a positive influence on the architecture students' entrepreneurial self-employment intention.
- H5. Perceived value creation has a positive influence on the architecture students' entrepreneurial self-employment intention.
- H6. Societal factors have a positive influence on the architecture students' entrepreneurial self-employment intention.

Most recent entrepreneurship studies in the context of Nigeria have not paid any attention to the commercial and enterprise awareness and value creation dimensions of the architectural service-based entrepreneurial orientation perspective and its impact on strengthening the students' intention toward self-employment. In addition, this study attempts to employ the proposed integrational entrepreneurial models in Figure 5 to assess the architecture students' cognitive attributes (attitude, perceived behaviour control and societal norm) and entrepreneurial orientation parameters (attitudes towards enterprise awareness, perceived

value creation, and subjective norms) influence on their intention to pursue entrepreneurial self-employment upon graduation following their participation in a course on entrepreneurship. It intends to contribute to the relevant literature. This is because none of the empirical research has investigated this integrated model, particularly regarding the architecture field of study and Nigeria's context.

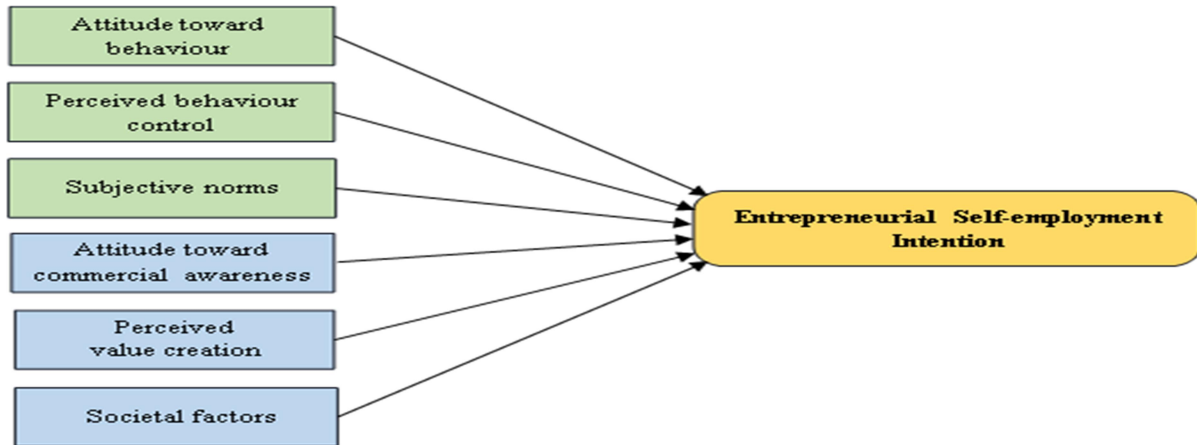


Figure 5: Research assessment framework

METHODOLOGY

Research design, instrument, sampling and data collection

The main goal of this study was to investigate the possible influence of cognitive characteristics and entrepreneurial orientation dimensions on the self-employment intentions of Ahmadu Bello University architecture students. The purposive sample approach and survey method were employed in this study to gather data on the established variables. The survey method used validated instruments from previously published literature. We used SPSS and structural equation modelling (SEM) software to investigate the proposed research assessment framework. As noted by Awang (2015), AMOS is a cutting-edge software program with powerful statistical capabilities, making it an effective tool for analyzing complex interrelationships with multiple variables or constructs, as in the case of this research model. The outcome of this study will provide valuable insights for educators and policymakers on how cognitive traits and entrepreneurial orientation might influence students' self-employment intentions.

The study conducted by Gafar et al. (2016) and Linan (2005) provided the original items of measurement, which were adapted for the independent variables and consisted of 31 items. The study used items of measurement for the dependent variable as stated in Valliere (2015). The questionnaire structure was divided into three sections. Section A focused on the demographic profile of the respondents, while Section B contained 30 items, and Section C consisted of 5 items. The measurement scale ranged from 1 to 5, with a paradigm of measurement of 1 (strongly disagree) to 5 (strongly agree). After administering 30 questionnaires as a pilot study, some of the items required refinement and rewording to

remove ambiguous statements for clarity, thereby improving the time required to fill out the questionnaire. This was to ensure that the questionnaire was diligently designed to achieve accurate and reliable results. The purposive sampling technique used for the selection of relevant respondents targeted the students in the department of architecture. After this, the data collection process was self-administered, and the survey link was shared among architecture students at the 300, 400, and master's levels through WhatsApp groups. These levels were chosen because they participated in mandatory university entrepreneurial education.

FINDINGS AND DISCUSSION

Statistical Package for Social Sciences (SPSS) software and Structural Equation Modelling (SEM version 22) were used for the descriptive and inference analyses of the data gathered. According to the data gathered from the 239 respondents, 187 (78.2%) of them were male and 52 (21.8%) were female, with a mean age of 21. Table 1 presents a few more conclusions based on the feedback from the respondents. 70.7% of architecture students believed strongly that they intended to launch a business after graduation. Only 4.1% of respondents were not interested in beginning any kind of business, and 21% of them were undecided; perhaps they would rather have a paid job. The two-year professional requirement for tutelage could be a possible explanation for the 25.1% of students who are unsure or not interested in business venture creation. Based on the significant percentage (70.7% of the students), the findings suggested that graduating architecture students, both male and female, desire to be entrepreneurs in the future despite the professional tutelage requirement upon graduation.

Table 1: Respondents' demographic characteristics

	Frequency	Percentage	
Gender	Male	187	78.2
	Female	52	21.8
Age	15-20	9	3.8
	21-30	218	91.2
	30-40	12	5.0
I intend to start a business and become an entrepreneur in future	169	70.7	
I am not sure if I will ever establish my own company or be an entrepreneur	60	25.1	
I have no intention to start a business venture when I graduate	10	4.2	
My parent(s) are in a paid job, either in public or private sector	63	26.4	
My parent(s) are having a business venture (Self-employed)	78	32.6	
My parent(s) are in a paid job and have additional businesses (self-employment)	87	36.4	
My parent(s) are not working (Retired/Decease/Others)	11	4.6	

Source: Fieldwork (2023)

Additionally, the majority of students (59%) have one or both of their parents run their businesses or enterprises while still working a paid job; this advantage of possible plural sources of income would make them more financially secure and self-reliant than their peers (26.4%) with only paid employment. This 26.4% are in a paid job in public and private sectors at various levels. The remaining 4.6% of parents who responded were retired, deceased, or other (see Table 1), which demonstrated that a greater proportion of students'

parents are still working and engaging entrepreneurially, which could have a positive influence on the architecture students' entrepreneurial self-employment intention.

Analysis of measurement model

Confirmatory factor analysis (CFA) using SEM (AMOS version 21) was used to assess the measurement models for each component. The CFA of the SEM was used to analyse the complexity of the research assessment model due to its robustness. SEM has been recommended by Awang (2015) as a new second-generation statistical method of analysis that is best applied to complex models due to its accuracy and capacity to execute CFA and hypothesis testing concurrently. SEM is a confirmatory technique that aims to provide a thorough way of assessing and changing measurement and structural model assumptions. There are a total of 35 items of measurement for the seven research constructs. As a result, according to Awang (2015), the initial Confirmatory Factor Analysis (CFA) demonstrated that the fitness indices of the initial measurement model were not within the advised threshold. So, a second CFA was carried out, one item of measurement was removed from the endogenous construct, and a total of 34 items constituted the measurement model. The measurement model CFA then closely matches the Goodness-of-fit (GOF) parameters (TLI, CFI, NFI, and GFI were all over 0.90, respectively) employed by a famous expert in SEM (Awang, 2015) to assess the model's fitness. Additionally, the RMSEA is less than 0.08, and the ChiSq/df is less than 3. In addition, factor loading values greater than 0.6 were observed for each measuring item. All of these numbers supported the measurement model's fitness and satisfied the structural model's requirements and the final research's structural measurement model presented in Figure 6.

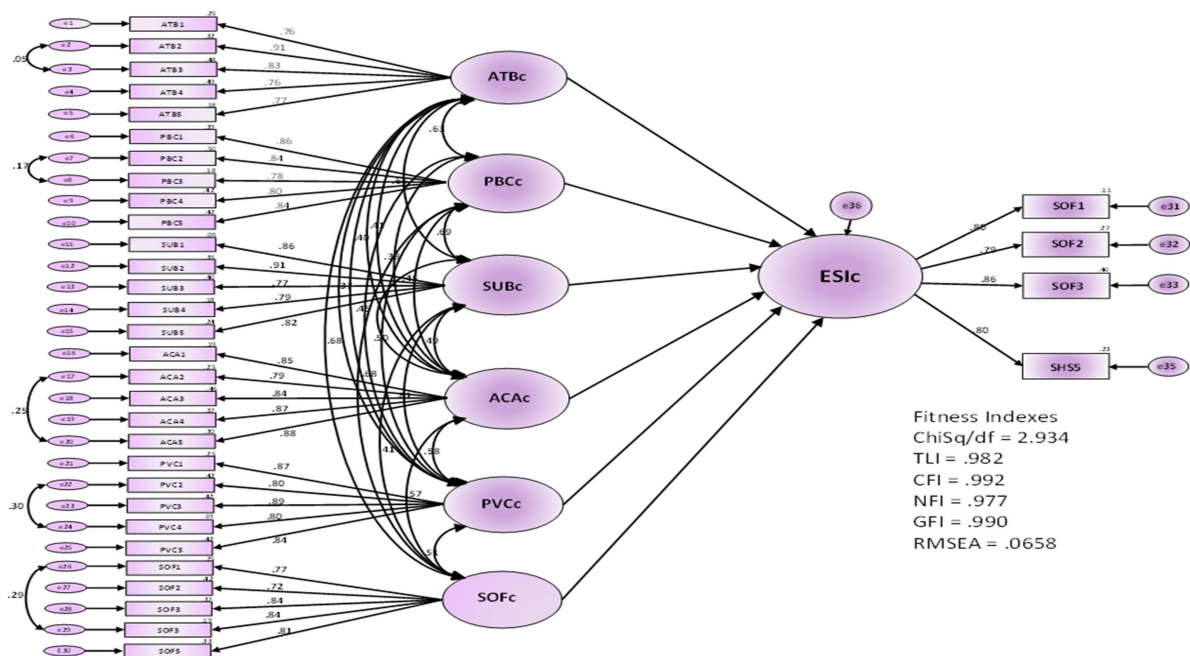


Figure 6: Final structural measurement model

Source: Fieldwork (2023)

Reliability and validity of a measurement model

According to Awang (2015), once the CFA technique for each measurement model is complete, a researcher must compute the remaining measures to show the measurement model's validity and reliability. Convergent validity ($AVE \geq 0.50$), construct validity (all fitness indices for the models must achieve the specified threshold), and discriminant validity (All items with factor loading lower than 0.6 were eliminated) are used to assess dependability. There is a 0.85 association between exogenous constructs. According to Karimi et al. (2011), doing an adequate AVE (average variance extracted) study is necessary to prove discriminant validity. In an AVE analysis, the square root of each AVE value associated with each latent construct is tested to see if it is significantly more substantial. The validity and reliability metrics for the research measurement model are presented in Table 2. The summation of the findings from the confirmatory factor analysis (CFA) for each construct was examined, and the results are shown in Table 2. The diagonal computations show the correlation between the various constructions, whereas the other statistics show the square root of AVE. A diagonal value might obtain discriminant validity, according to Awang (2015), if it is greater than the numbers contained in its row and column. Table 2 presents this in a simple and logical format. As a result, the evaluation of the research measurement model demonstrated that the constructs satisfied the requirement for discriminant validity.

Table 2: The summary of the CFA results

Constructs	Items	Factor loading	Cronbach alpha (≥ 0.7)	CR (≥ 0.7)	AVE (≥ 0.5)
ATB	ATB1	0.725	0.891	0.896	0.674
	ATB2	0.891			
	ATB3	0.811			
	ATB4	0.721			
	ATB5	0.762			
PBC	PBC1	0.803	0.771	0.783	0.609
	PBC2	0.847			
	PBC3	0.757			
	PBC4	0.843			
	PBC5	0.830			
SUB	SUB1	0.836	0.872	0.879	0.684
	SUB2	0.792			
	SUB3	0.769			
	SUB4	0.807			
	SUB5	0.823			
ACA	ACA1	0.804	0.831	0.837	0.603
	ACA2	0.782			
	ACA3	0.801			
	ACA4	0.852			
	ACA5	0.861			
PVC	PVC1	0.863	0.870	0.876	0.651
	PVC2	0.798			
	PVC3	0.850			
	PVC4	0.819			
	PVC5	0.836			
SOF	SOF1	0.791	0.794	0.801	0.688
	SOF2	0.784			
	SOF3	0.822			

Assessment of the structural model and hypotheses testing

In the subsequent empirical analysis, CFA was applied to specify the research assessment model to establish a set of constructs that influence the architecture students' entrepreneurial self-employment intention at Ahmadu Bello University which awards the degree of Bachelor of Science in Architecture. The structural measurement model for the research satisfies the baseline requirements appropriately, as illustrated diagrammatically in Figure 7 and according to the Goodness-of-fitness indices (TLI, CFI, GFI, NFI, and RMSEA). Every metric was significantly higher than the 90% confidence threshold. Similarly, the RMSEA is less than 0.08, and the ChiSq/df falls below 3. The findings of the hypothesis test are shown in the next paragraph and summarized in Table 3.

Table 3: Summary of hypothesis testing results in the research structural model

Hypothesis	Constructs and path	Standardized estimates	Unstandardized estimates	S.E.	C.R.	P-value	Results
H1	ESI ← ATB	0.829	0.558	0.041	13.737	0.000	Supported
H2	ESI ← PBC	0.416	0.452	0.113	3.989	0.003	Supported
H3	ESI ← SUB	0.331	0.242	0.072	3.342	0.015	Supported
H4	ESI ← ACA	0.180	0.331	0.057	3.408	0.008	Supported
H5	ESI ← PVC	0.120	0.180	0.082	2.007	0.268	Not Supported
H6	ESI ← SOF	0.041	0.120	0.057	0.745	0.012	Supported

Source: Fieldwork (2023)

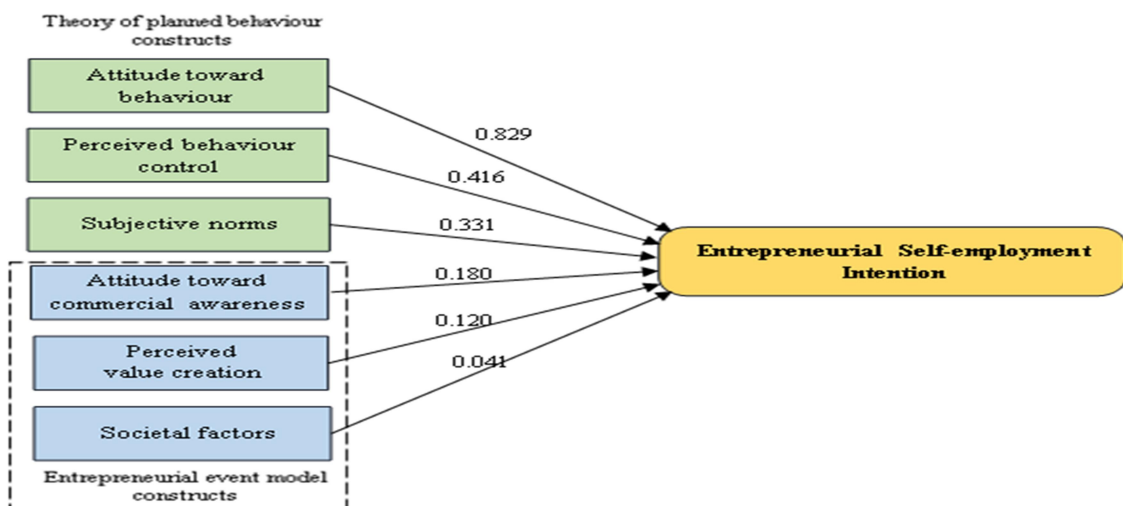


Figure 7: Final structural measurement model with estimated regression weights

Source: Fieldwork (2023)

Discussion

In this study, the research findings have shown that attitudes toward behaviour, perceived behaviour control and subjective norms do constitute direct and positive influence on entrepreneurial self-employment intention as postulated in H1, H2 and H3 respectively (see Table 4). Also, it is obvious from the analyzed data collected from the architecture students that the relationship between attitude toward commercial awareness, perceived value creation and societal factors and entrepreneurial self-employment intention is positive, significant and is a direct relationship.

On H1, there is a significant positive relationship between attitude toward behaviour and entrepreneurial self-employment intention of the architecture students ($\beta = 0.829$, $z = 13.737$, and $p = 0.000 < 0.001$) based on the data collected from students and analyzed. Thus, H1 is supported and upheld. The finding is consistent with past studies (Silva et al., 2021). A possible explanation for this finding may be that architecture training is a technical-based discipline with analytical, problem-solving, and management skills and is enterprise-centered in nature (building economics). Coupled with their participation in entrepreneurship education, all these may contribute to their positive attitude toward entrepreneurial self-employment.

On H2, the relationship between perceived behaviour control and entrepreneurial self-employment intention of the architecture students ($\beta = 0.416$, $z = 3.989$, and $p = 0.003 < 0.005$) shows that there is a positive influence, significant and direct effect. This finding is in harmony with the previous studies conducted by Al-Jubari et al. (2019) and Aigbedion (2021). It is logical to say that this study has unmistakably shown that the majority of architecture students believe in their own perceived behaviour control and abilities since it is simple for them to start a business initiative and see it through to a business venture. Additionally, they are certain that they have all the necessary abilities to establish their firms. Generally speaking, they think they can manage any firm well.

On H3, the research findings have shown that subjective norms are significant to entrepreneurial self-employment intention ($\beta = 0.331$, $z = 3.342$, and $p = 0.015 < 0.05$), and thus hypothesis H3 is supported. The finding is consistent with notable past scholars' work (Otache et al., 2020; Al-Jubari et al., 2019). The H3 is accepted because, in Nigeria today, family, friends, and society support university students to be job creators rather than job seekers. The current competitive job market is saturated, and any student who can start an entrepreneurial project is rewarded through recognition and admiration in Nigerian societies, and architecture students are no exception. Moreover, architectural project presentations (building design, model making, and animation videos) at the university usually enable architecture students to frequently interact with other students, staff, and the academic environment. Their interaction with the university community is a possible enabler for their strong perception of societal support for their entrepreneurial self-employment inclination. In addition, most of the respondents (58.5%) noted that their parents run their enterprises, making them self-employed, and 40.5% and 1% indicated that their parents are civil servants and retired, deceased, or other; they might not want to follow the same career paths and be

determined to create wealth and have financial freedom through entrepreneurial self-employment.

About the H4, the model's regression coefficient weights suggest that the attitude of architecture students toward commercial awareness in determining their desire to start their own business is positively significant ($\beta = 0.180$, $z = 3.408$, and $p = 0.008 < 0.005$). In other words, according to the information gathered and examined, the architecture students' attitude toward commercial awareness has a favourable and significant effect on their entrepreneurial self-employment aim for self-reliance by way of embarking on an enterprise venture after the completion of their studies. As a result, research H4 is verified and acceptable for this study. The inference that can be drawn from the present study is also in line with past studies on engineering students' intentions of establishing their enterprises, published by Gafar et al. (2015) and Tantawy et al. (2021), in each case. Given that architects frequently engage with clients, building materials suppliers, contractors, and allied professionals, business acumen is considered essential for architecture students, regardless of their decision to prefer self-employment or paid employment, and the training is designed from this perspective. In line with Ilerisoy et al. (2021), managing human, mechanical, and material resources in the pre-contract, post-contract, construction, and post-construction stages all calls for an in-depth understanding of the business realities, commercial acumen, and market dynamics of the building industry.

Regarding H5, research outcomes have shown that perceived value creation has no importance with regards to entrepreneurial-self-employment intention ($\beta = 0.120$, $z = 2.007$, and $p = 0.268 > 0.05$) and this meant that the H5 is not supported. As a result, the findings contradict those of previous investigations (Vosloo, 2016; Gafar et al. 2015; Law & Breznik, 2017). The fact that architecture students have positive enthusiasm for their future outlook for entrepreneurship; however, the training time duration and tutelage years for professional practising license requirements may be the reason for the rejection of this hypothesis. Other possibilities for the rejection of H5 are that architectural creativity is not characteristically translated to business creativity, overreliance on technical skills for the creation of buildings in the built environment as products, and a lack of commercial or enterprise skills to commercialize the product. In general, perceived value creation implies transformation, specialization, new product development, and business opportunity recognition, and innovative ideas can only be formulated with the entrepreneurial diversity in the architecture field of study.

Likewise, value-creation activities in architectural education are the indication and implementation of novel ideas, the creation of landmark buildings (dynamic and state-of-the-art products), or the improvement of existing or reinventing contemporary architectural services. Students' perceived value creation and the success of entrepreneurial and self-employment mindsets can change positively if training co-creates the entrepreneurial and technical skills of the architecture students. This is consistent with Gafar et al. (2016) assertion that as long as architecture is rooted in traditional professional practice instead of dynamic contemporary practice, students' perceived value creation will remain low. In this competitive economic era, both the university and government must motivate students,

encourage them to be creative and innovative, and provide an innovative academic environment for what they can learn and create, not what they can learn by heart for examination.

Finally, H6 based on study findings has demonstrated that societal factors are significant in achieving entrepreneurial self-employment intent ($\beta = 0.041$, $z = 0.745$, and $p = 0.012 < 0.05$), and thus hypothesis H6 is supported and accepted in line with the data collected and analyzed. The finding is consistent with notable past scholars' work (Al-Jubari et al., 2019; Nnaemeka-Okeke et al., 2019). Several notable empirical studies, including those by Iwu et al. (2020), Towers et al. (2020), and Rai et al. (2017), established comparable findings from their investigations.

In summary, the regression weights for the research's sample size ($n = 239$) are shown in Table 4 and Figure 6. Except for perceived value creation, which shows no significant impact in the context of this research, the SEM's result shows that all relationships have a positive influence and are significant at a ninety-nine percent confidence level. The first variable has a more substantial estimate of influence than the other five variables in the causal relationship between entrepreneurial self-employment intention and the six determiner factors. In other words, among architecture students, the influence of attitude on business reality is higher. Possible interpretations of these findings indicate that attitudes toward business reality and societal factors are the main determinants of the desire of architecture students to engage in entrepreneurial self-employment. The findings of this study are in agreement with those of several studies in the entrepreneurship literature (Gafar et al., 2015; Law & Breznik, 2017) that have determined there is no significant direct relationship between perceived value creation and entrepreneurial self-employment intention. It is therefore safe to say that architecture students do not think their technical creativity might influence how they perceive value creation and how they intend to pursue entrepreneurial self-employment, as well as their preparedness to translate their core value of creativity into businesses or the creation of commercial ventures after graduation. According to Law and Breznik (2017), one explanation for this is that architecture and engineering practice are fundamentally design and technically-oriented professions. The curriculum structure, course content, and teaching methodology, as well as the tutelage years for professional practising license requirements, may be other possible reasons for non-compliance with their perception of value creation, diversification, and innovation in every aspect of the professional practice.

CONCLUSION

Individual, professional, organizational, and national economic growth are all significantly impacted by entrepreneurship, most prominently through greater market competitiveness and employment creation. Understanding students' intentions for starting their businesses seems crucial, especially in a developed country like Nigeria, where the employment market is becoming over-saturated and the economy is experiencing a slump. The study focused on the entrepreneurial self-employment intentions of students studying architecture at Ahmadu Bello University in Zaria, Nigeria, a developing nation with substantial challenges to paid jobs due to declining economic factors. It also examined the cognitive characteristics and

entrepreneurial event variables associated with these students. Although the majority of the students had intentions to pursue self-employment as entrepreneurs, the results showed that except perceived value creation, cognitive attributes (attitude, perceived behaviour control, and subjective norms) and entrepreneurial event characteristics (attitudes toward commercial awareness and societal factors) were key influences on such intentions. The results presented here have important ramifications for stakeholders in architectural education, the professional practice of career development, and national economic transformation.

In the current economic reality, schools of architecture's role are to produce creators and innovators in every area of human endeavours for the betterment of the society they serve and to sustain themselves economically. This requires collaborative efforts from the government, architectural professional bodies, and tertiary institutions. Creating enterprise and commercializing design skills, as well as innovative mindsets, are all factors in developing professional and high-quality entrepreneurship education in architecture schools. It is imperative to upgrade the university curriculum in all academic disciplines to inculcate an entrepreneurial mindset in students. It would be easier to increase students' entrepreneurial inclinations after graduation if we had a better grasp of the factors affecting their intent to engage in self-employment as entrepreneurs. In light of this, when students acquire more business knowledge, skills, and an entrepreneurial mindset, these abilities will support the development of their professional or occupational achievement. Additionally, these skills considerably improve graduates' employment opportunities. As a result, specialist entrepreneurial training has to be more integrated into architectural educational curricula for instruction, learning, and evaluation.

To ensure a prosperous architectural profession and collaborative commercial ventures through vertical or horizontal profession diversification, aspiring entrepreneurial architects are supposed to be trained close to real-life events during their academic training. To advance students' abilities and knowledge, encourage their entrepreneurial attitudes, and improve their cognitive attributes and entrepreneurial event characteristics, entrepreneurial education is required. Enterprise education could greatly empower graduating architects with an aptitude for creativity, inventiveness, innovation, and taking risks in venture creation. Real-time case studies and market-based knowledge pertinent to the local marketplace might be provided and included in the coaching and instructional methods. This will develop entrepreneurial competencies and capabilities, enabling them to launch, create, and manage their firms and businesses successfully after graduation. The shortcomings of this research lie in the fact that students' self-evaluations regarding their entrepreneurial self-employment ambitions might not provide an accurate reflection of their propensity to start their businesses upon graduation. To determine the real career choices of the students pursuing architecture as a profession, it is necessary to conduct a periodic and longitudinal assessment of their actual entrepreneurial ventures after graduation.

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