






“Gender differences in entrepreneurial interest and practice among undergraduate students in Nigeria”

AUTHORS	Caleb Adelowo   Yusuf Akinwale  
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Caleb Adelowo, Ph.D., Postdoctoral
Research Fellow, Department of
Management, Faculty of Economic
and Management Sciences, North-
West University, South Africa.
(Corresponding author)

Yusuf Akinwale, Ph.D., Associate
Professor, Department of Economics,
College of Business Administration,
Imam Abdulrahman Bin Faisal
University, Saudi Arabia.



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Caleb Adelowo (South Africa), Yusuf Akinwale (Saudi Arabia)

GENDER DIFFERENCES IN ENTREPRENEURIAL INTEREST AND PRACTICE AMONG UNDERGRADUATE STUDENTS IN NIGERIA

Abstract

The economic turbulence in the last two decades and the Covid-19 pandemic have impaired several economies, heightened unemployment, and worsened job loss and socio-economic hardships. Promoting entrepreneurship inclusiveness has become a critical strategy to revamp the economy. Meanwhile, the global economy has been projected to grow faster with an increase in women entrepreneurs. However, there seems to be a gender gap and differential in start-ups, which draws down women's inclusion in the business environment. This study examines the gender differential in entrepreneurial interest and practice among 12,485 university students in Nigeria. The results reveal that 88% of male and 84% of female students want to start their own businesses. Both males (66%) and females (65%) reported high entrepreneurial interest, with no statistically significant difference between both genders. The logistic regression analysis shows that entrepreneurship education, relational support, risk-taking, self-efficacy, university ecosystem, and attitudes toward behavior are the main drivers of entrepreneurial interest among male and female students. However, the university ecosystem is found to not significantly affect entrepreneurial interest among male students. Similarly, all factors except for the university ecosystem significantly influence entrepreneurial practice among male and female students. However, relational support is not statistically significant for female students. The study concludes with appropriate policy suggestions that could improve and sustain entrepreneurship interest and practice in both male and female students.

Keywords

gender, entrepreneurial interest, undergraduate students,
female entrepreneurship, Nigeria

JEL Classification

L26, J16, A22, I24

INTRODUCTION

Entrepreneurship has been a conduit of global development in the last few decades (Bergner et al., 2021; Alene, 2020). This has brought much attention from academia and practice professionals in an ever-dynamic, innovative, and increasingly changing business environment (Schumpeter, 1942). Therefore, entrepreneurial intention is recognized as a critical determinant of entrepreneurial activity (Kong & Choo, 2022; Ajzen, 2011; Ajzen & Fishbein, 1980). Entrepreneurship has been male-dominated for many decades until recent times (Muntean & Ozkazanc-Pan, 2015). Women account for approximately half of the working-age population, yet they are underrepresented in virtually all fields of the economy (Strawser et al., 2021). Meanwhile, if these narratives were changed by appropriate policy and a sound enabling environment for women, they could contribute approximately USD 28 trillion to the global GDP by 2025 (Desjardins, 2018). According to the 2016/2017 Global Entrepreneurship Monitor (GEM) report, the gap in the rate of female entrepreneurship in developed economies remains

wide, while that of developing economies is closing up due to a large number of women establishing and thriving in necessity-driven ventures (Kelley et al., 2017).

The rate at which female-owned businesses close down is higher (Strawser et al., 2021), and there are almost no female entrepreneurs in digital and technology businesses (OECD/The European Commission, 2019). This could be attributed to the constraints that deprived women of their maximum potential to launch their businesses, such as the required skills, access to finance, socio-economic factors, cultural, mentorship, and networking, among others (Ogundana et al., 2021; OECD/The European Commission, 2019). Social norms and perceptions of families greatly influence female entrepreneurship opportunities. However, a more enabling environment could support female-owned businesses to grow in many less-developed countries (Ogundana et al., 2021).

While an increased number of women started their own businesses in 2021/2022 compared to 2019, there is still a gender gap as women globally represent one in every three established business owners (Macmillan & Rajewski, 2021). Besides human capital diversity in the entrepreneurial process, promoting female entrepreneurship and women's businesses reduces unemployment and contributes to inclusive economic growth (Rietveld & Patel, 2022; Hechavarría et al., 2019). The young generations of males and females have been recognized as the future of any country; therefore, innovative and entrepreneurial-minded youth would likely create wealth and sustainable businesses (Akinwale & Adelowo, 2022; Mahadea et al., 2011).

Hence, developing the entrepreneurial capabilities of female students is likely to boost the establishment of sustainable businesses (Akinwale, 2018). There is a need to unpack specific factors, such as social norms, self-efficacy, training, and entrepreneurship education, that drive entrepreneurial interest and practice in both female and male students to determine appropriate policy intervention that could foster female entrepreneurship (Kong & Choo, 2022; Tsyganova & Shirokova, 2010; Yordanova & Tarrazon, 2010).

1. LITERATURE REVIEW

Entrepreneurship has been recognized as an important mechanism for injecting innovation, productivity, and growth into the national economy (Akinwale, 2018). Entrepreneurship fuels economic growth through the creation and acceleration of new business start-ups and jobs and improvement in national competitiveness (WIPO et al., 2022). Governments and policymakers across the globe are constantly reviewing and revising their policy strategies to improve entrepreneurship ecosystems and further harness their economic potential. For instance, the introduction of entrepreneurship education in the tertiary education system was born out of the understanding that when young people in universities and colleges are exposed to the nitty-gritty of entrepreneurship, the likelihood of career choice in self-employment will improve (Olofinyehun et al., 2018). Therefore, entrepreneurship education has become one of the main processes of instilling entrepreneurial mindsets in students.

Also, attention has been paid to the establishment of entrepreneurship infrastructures such as business incubators, science parks, accelerators, and, more recently, co-working spaces and technology hubs to speed up venture creation among youth (Olofinyehun et al., 2018). A recent analysis of venture capital across the globe also shows an upsurge in this investment in both developed and developing countries, and more importantly, in countries where none existed in the last decade (WIPO et al., 2022). Countries now attach more seriousness to virile entrepreneurship ecosystems in addressing devastating global problems, such as unemployment and global warming. All countries need more entrepreneurs to bounce back better after the debilitating effect of the Covid-19 pandemic. In addition, governments need to ensure that the policy environment is suitable and inclusive for both male and female gender to exploit available entrepreneurial opportunities. For this to happen, government interventions must be inclusive, considering critical factors that spur entrepreneurial spirit in males and females.

Studies have shown that males are naturally more inclined to entrepreneurship than their female counterparts (Thebaud, 2015; Liñán & Fayolle, 2015; Olofinyehun et al., 2018). A recent global university entrepreneurial spirit student survey reveals a wide gender gap among the surveyed participants as the intentional, nascent, and active entrepreneurs are smaller among females (Sieger et al., 2021). A study conducted among 1400 university students in Spain shows that women are less likely to start an entrepreneurial business due to their fear of failure (Sánchez Cañizares & Fuentes García, 2010). Meanwhile, female participation in entrepreneurship or economic activities has been perceived as a great economic gain for any nation, mainly because women's workforce share was responsible for 11% of America's GDP in 2012 (Kauffman Foundation, 2015). The cultural shift in the Arab countries, where women are now allowed to work or pursue entrepreneurial ventures, clearly recognizes women's potential in economic development. Kauffman Foundation (2015) also reported that despite women's readiness to engage in economic activities, their participation as entrepreneurs was uneven, indicating that fewer women become entrepreneurs and their potential contributions to job creation, innovation, and economic growth became unrealized.

To create a critical pool of quality entrepreneurs in sub-Saharan Africa, government and development planners should pay adequate attention to gender equality in their interventions for maximum socio-economic benefits. Although some of the factors that put women at a disadvantage when it comes to entrepreneurship have been studied in both developed and developing countries, which include cultural tendencies, roles, societal bias, inadequate access to business mentorship and capital, and masculinity perception of entrepreneurship (De Vita et al., 2014; Thebaud, 2015; Liñán & Fayolle, 2015; Kauffman Foundation, 2015; Moreira et al., 2019). However, the gender difference in factors influencing entrepreneurial intention and practice among undergraduates in universities remains largely underexplored.

Entrepreneurial intention is a precursor to entrepreneurial behavior, considering the Ajzen theory of planned behavior and the theory of reasoned action (Ajzen, 2011). Intention or behavior is driven by several factors, particularly individual perception of the behavior, subjective norm, and perceived behavioral

control (Ajzen, 1991, 2011). These factors and others have been studied extensively in recent times to provide a better understanding of how entrepreneurship behaviors could be developed and sustained among undergraduates in Nigeria (Olofinyehun et al., 2018). The perception of national support for male and female entrepreneurship in developing countries differs significantly when the number of females in public positions is critically assessed. For instance, while some state governors in Nigeria have women as deputies, the country has not had a female vice president. That said, in the National Assembly, where laws are legislated and critical national decisions are taken, only some females are elected to the Chamber to make decisions, even though women constitute about 50% of the national population (NACETEM, 2021). This shows the need to design an appropriate gender framework that could allow females to aspire and attain their full potential in any field of endeavor. Although there are few successful female entrepreneurs in Nigeria, including those participating in oil and gas, information and communication technologies (ICTs), agriculture, and other critical economic sectors, they are always outnumbered by their male counterparts considering some of the challenges they face as women (De Vita et al., 2014; Thebaud, 2015; Kauffman Foundation, 2015; Moreira et al., 2019). Critically, motherhood is an essential factor that limits the potential of women entrepreneurs, particularly in developing countries where they need to cater to the children and the family. In most cases where they engage in entrepreneurial activities, it is mostly in a flexible way to accommodate family commitments (Institute for Women's Policy Research, 2016). Therefore, the motherhood mindset and gender roles tend to dictate the breath of women in entrepreneurship.

To address the challenges going forward, particularly among undergraduates, providing appropriate motivation for young women to stimulate and sustain their interest in entrepreneurship requires that crucial determinants of entrepreneurial propensity are unpacked, and appropriate interventions are provided. Moreover, establishing the differences in key determinants of the entrepreneurial propensity among male and female university students is useful to help design appropriate evidence-informed interventions needed to improve their chances of becoming entrepreneurs. Earlier studies have shown that Nigerian undergraduates engage in entrepreneurial activities

in school (Olofinyehun et al., 2018). However, the data were not gender disaggregated to see the proportion of females concerned. A recent survey of entrepreneurial spirit among students in fifty-eight nations also shows that the gender gap persists, as more males indicate higher intentional, nascent, and active entrepreneurial propensity than their female counterparts (Sieger et al., 2021).

Yordanova and Tarrazon (2010) assessed the effects of gender on entrepreneurial intentions by highlighting the cause of the gender gap in entrepreneurial intentions among Bulgarian university students. The results revealed that women have lower entrepreneurial intentions than men. In addition to this, the gender effect on entrepreneurial intentions is mediated by perceived behavioral control and partially mediated by perceived subjective norms and attitudes toward entrepreneurship (Yordanova & Tarrazon, 2010). Thus, appropriate policy actions to encourage female start-ups should be directed at attitudes, subjective norms, perceived behavioral control, and the link between entrepreneurial intentions and behavior among women. To address specific gender-related issues in the policy, clear evidence is required. Therefore, this study aims to provide information on entrepreneurial interest and practice and their correlates along the gender dimensions in Nigeria.

2. METHODOLOGY

The study utilizes a cross-sectional dataset collected from undergraduates in six universities across Nigeria. These universities were selected through cluster sampling to cut across the six geopolitical zones in the country. Furthermore, the selection is also based on the alignment of the dataset with the previous surveys for proper comparison and consistency. The entrepreneurship ecosystem questions were introduced into the questionnaire only for the year 2020/1, and this justifies why this paper focuses on that year. The dataset contained important entrepreneurial characteristics of undergraduates, as the data were meant to evaluate entrepreneurship education policy in Nigeria (Olofinyehun et al., 2022).

The compulsory entrepreneurship education policy was introduced in 2006 by the government through the National Universities Commission

(NUC) to ingrain entrepreneurship mindset and culture in students to stimulate their potential for start-up creation. In addition, the government proposed to use the policy to turn students into job creators after graduation rather than job seekers. The curriculum is in two parts: theory and practice; both have moved beyond optional and elective courses to compulsory ones. To strengthen and appropriately coordinate the teaching of the course in all tertiary institutions, each university now has a Centre for Entrepreneurship Development (CED). These centers and stakeholders in the education sector are responsible for reviewing the entrepreneurship curriculum, selecting faculties for facilitating the course, and organizing practical sessions in diverse areas.

Earlier studies have established that entrepreneurship education significantly influenced entrepreneurial intention and practice among undergraduates (Olofinyehun et al., 2018). Exploring the gender dimension of this dataset is necessary to unearth critical factors that could improve gender parity among students in entrepreneurship activities.

Based on Ajzen's theory of planned behavior, the intention is a function of attitude toward a behavior, subjective norms, and perceived behavioral control (Ajzen, 2011). Therefore, the dataset variables allow for analysis along Ajzen's perspective. These variables include the general measure of self-efficacy, risk-taking, and attitude toward entrepreneurship behavior. Other important variables captured in the dataset are the relational support from family and friends and items measuring the university ecosystem. The items were captured in two separate sections of the questionnaire used for data collection (Olofinyehun & Egbetokun, 2022). The items used to capture the variables were measured on a five-point Likert scale of '0' never to '4' always.

For the risk-taking, variables PEC 27, 38, and 49 were used as they revolved around questions relating to the risk propensity of the undergraduates. For instance, "I do things that are risky," "I do things that others consider risky," and "I weigh my chances of succeeding or failing before I decide to do something" were the questions raised. For self-efficacy, which defines the confidence students have in their capacity to undertake entre-

preneurship ventures, PEC 10, 23, and 32 of the datasets were used. The questions are “I feel confident that I will succeed at whatever I try to do; I like challenges and new opportunities and trying something difficult or challenging; I feel confident that I will succeed.”

Three items were selected for attitude toward entrepreneurship behavior (PEC 8, 30, and 45) because they revolved around students’ attitudes to entrepreneurship. Questions like “I plan a large project by breaking it down into smaller tasks; I try to think of all the problems I may encounter and plan what to do if; and I try things that are very new and different from what I have done before” were raised in the questionnaire.

The variables PEC 13, 18, and 31 were considered for relational support. These variables defined the influence of family and friends’ support for entrepreneurship among the students. Relational support has been established to influence entrepreneurial intention among undergraduates in a Nigerian university (Olofinyehun et al., 2018). The questions raised are “I try several times to get people to do what I would like them to do; I seek the advice of people who know a lot about the tasks I am working on; and I get important people to help me accomplish my goals.”

Finally, the university ecosystem was captured by items in variables 26i, 26ii, and 26iii, as contained in the dataset. The study adopted the Global University Entrepreneurial Spirit Students’ Survey (GUESSS) framework to elicit information on the university entrepreneurship ecosystem and the degree to which they support students’ entrepreneurial inclinations (Sieger et al., 2021).

The undergraduates were asked about their intention to engage in entrepreneurship as a career option (var18). This variable represented the entrepreneurial intention of the undergraduates and was used as a dependent variable for the regression analysis. Their level of entrepreneurship interest was also captured in variable var19 and was ranked on a five-point Likert scale of ‘1’ very low to ‘5’ very high. A total of 12,485 students responded to the questionnaire. The data were prepared and analyzed using both descriptive (SPSS) and inferential analysis with an E-views statistical package.

3. RESULTS

The descriptive analysis of the respondents is presented in Table 1. Most students (86.5%) are between the ages of 16 and 25, while the least (0.2%) are above 40. Also, 62% of the sampled students are male, while 38% are female. The major specializations of the students are also queried: 40% of the students are studying science-based major, 30% are studying tech-based major, 25% are studying social science/management-based major, and 5% others. This reflects that most of the students are in STEM-based disciplines, which indicates potential technology innovation products and services in the future. Table 1 also shows that 80% of the students claimed that their parents have previously initiated or run a business. This could signify that they might be familiar to running a business as their parents’ involvement in a business could directly or indirectly spill over to them. Table 1 also shows the students’ academic level, which ranges from 200 level (year 2) to 500 (year 5). While the highest number of respondents (31%) are in the 300 level, the least (21%) are in the 200 level. This shows that the sampled students are almost evenly distributed across the levels, except year 1, which is excluded from the study due to their newness in the university.

Table 1. Characteristics of the respondents

Characteristics	Description	Frequency	%
Age (in years)	Below 16	34	0.3
	16-20	4162	34.2
	21-25	6374	52.3
	26-30	1458	12.0
	31-35	80	0.7
	36-40	44	0.4
	Above 40	26	0.2
Gender	Female	4753	38
	Male	7732	62
Present academic level	500 Level	2645	21.4
	400 Level	3303	26.8
	300 Level	3823	31.0
	200 Level	2571	20.8
Field of specialization (Major)	Science-based	4935	39.7
	Tech-based	3711	29.9
	Social sciences/ Management-based	3136	25.2
	Others	639	5.1

It could be deduced from Table 2 that most (86%) of the students are interested in starting their own business, depicting a great interest of Nigerian students in entrepreneurship. This could be a result of their

parents' involvement in business, their exposure to entrepreneurship education in school, and/or an increasing lack of white/blue-collar jobs in the Nigerian labor market. Meanwhile, 66% of the students rated their entrepreneurial interest as high, while 30% and 4% rated it as moderate and low, respectively. From a gender perspective, 88% of the male students are interested in starting their own business, and 67% rated their interest as high. However, 84% of the female students are interested in starting their own business, and 65% rated their interest as high. The figures from both males and females show that though males are higher, they are in the same category, which is very close.

Furthermore, the Chi-square result shows no statistical difference in male and female students' entrepreneurial interest ($\chi^2 = 54.37$; P-value = 0.000). This signifies that both male and female students perceived entrepreneurial interests similarly. This further corroborates the percentage of male and female students interested in entrepreneurship, as these figures are within the same percentage range of 80s in Table 2.

Table 2. Descriptive analysis of entrepreneurial interest among male and female students

Characteristics	Description	Frequency	%
Interest in starting own business (All)	Yes	9888	86.5
	No	1545	13.8
Level of entrepreneurial interest (All)	Very high	3534	34.8
	High	3174	31.3
	Moderate	3067	30.2
	Low	288	2.8
	Very low	85	.8
Entrepreneurial interest among male students	Yes	6216	88
	No	817	12
Level of entrepreneurial interest among male students	Very high	2262	35.5
	High	1994	31.3
	Moderate	1878	29.5
	Low	185	2.9
	Very low	49	0.7
Entrepreneurial interest among female students	Yes	3602	84
	No	711	16
Level of entrepreneurial interest among female students	Very high	1254	33.8
	High	1151	31.0
	Moderate	1164	31.4
	Low	102	2.8
	Very low	36	1.0

Logistic regression was conducted to examine the factors influencing entrepreneurial interest among the students, including the gender dimension. Table 3 shows the results of the factors that influence entrepreneurial interest after dissecting the gender into male (Panel A) and female (Panel B) independently and, at the same time, taking them jointly as one (Panel C). The six factors that are considered to influence entrepreneurial interest among the students are entrepreneurship education (EE), relational support (ReS), risk-taking (RT), self-efficacy (SE), university ecosystems (UC), and attitudes toward behavior (ATB). The results in Panel A for males reveal that all the factors are highly likely and statistically significant to influence the level of entrepreneurial interest of students, except the university ecosystem (odd ratio = 0.98, P-value = 0.6808). The result of Panel B for female students indicates that the six factors are highly likely and statistically significant to influence their entrepreneurial interest. The odd ratios of the six factors are greater than 1, with that of the university ecosystem being the least (1.065), and the p-values are less than 10% significant level. Meanwhile, Panel C, the joint logistic regression result of male and female genders, reveals that all factors except the university ecosystem are statistically significant at 10%.

The logistic regression results of gender differential in entrepreneurial practice are also presented in Panel A (male) and Panel B (female) in Table 4. Except for the university ecosystem and attitudes toward behavior, the six factors are significant and highly likely to influence male students' entrepreneurship practice. However, this occurs at a 10% level of significance in Panel A. However, all the factors except university ecosystem and relational support influence female students' entrepreneurship practice at a 10% level of significance in Panel B. This shows that there are four main factors out of six that significantly influence entrepreneurship practice among students. Specifically, entrepreneurship education, relational support, risk-taking, and self-efficacy influence entrepreneurship practice among males, while entrepreneurship practice among females is influenced by entrepreneurship education, risk-taking, self-efficacy, and attitudes toward behavior.

Table 3. Ordered logistic regression analysis of factors influencing entrepreneurial interest in male and female students

Variables	Panel A (Male)		Panel B (Female)		Panel C (Both)	
	B Coefficient	Odds ratio	B Coefficient	Odds ratio	B Coefficient	Odds ratio
Entrepreneurship education (EE)	0.2439*	1.276	0.5501*	1.734	0.3422*	1.408
Relational support (ReS)	0.1349*	1.144	0.1108*	1.117	0.1150*	1.121
Risk-taking (RT)	0.2594*	1.296	0.1775*	1.194	0.2234*	1.250
Self-efficacy (SE)	0.2882*	1.334	0.4900*	1.632	0.3652*	1.440
University ecosystem (UC)	-0.0121	0.988	0.0637*	1.066	0.0226	1.022
Attitudes toward behavior (ATB)	0.1965*	1.217	0.1459*	1.157	0.1816*	1.199

Note: * Signifies 10% level of significance.

Table 4. Ordered logistic regression analysis of factors influencing entrepreneurial practice in male and female students

Variables	Panel A (Male)		Panel B (Female)	
	B Coefficient	Odds ratio	B Coefficient	Odds ratio
Entrepreneurship education (EE)	0.3891*	1.476	0.2380*	1.269
Relational support (ReS)	0.1342*	1.144	-0.0140	0.986
Risk-taking (RT)	0.1908*	1.210	0.2334*	1.263
Self-efficacy (SE)	0.1166*	1.124	0.2072*	1.230
University ecosystem (UC)	-0.0323	0.968	0.0123	1.012
Attitudes toward behavior (ATB)	0.0535	1.055	0.1774*	1.194

Note: * Signifies 10% level of significance.

4. DISCUSSION

There had been much concentration on male entrepreneurship in the past, with little or no focus on female entrepreneurship until the recent period (Rietveld & Patel, 2022). However, female entrepreneurship has recently increased over time in many countries but still lags behind males (GEM, 2022). Studies have shown that increasing women's participation in entrepreneurship would improve gender equality and social and economic growth of the country (Adelowo & Akinwale, 2018; Rietveld & Patel, 2022). Since universities are considered a center for knowledge spillovers that is instrumental to socio-economic development (Ward et al., 2019), it becomes pertinent to assess factors driving entrepreneurial interest and practice among female and male students to determine differences in both genders.

The results indicate that most Nigerian students are interested in entrepreneurship, and this could be because entrepreneurship course is a compulsory course across Nigerian universities, which is an indication of the directive of the Nigerian government that has mandated all university administrations to offer entrepreneurship courses to stu-

dents in their respective universities (Akinwale & Adelowo, 2022). The descriptive analyses show that both males and females are interested in entrepreneurship, and their interest levels are moderately high. Yet, that of males is slightly higher than that of females. This is similar to the study of Rietveld and Patel (2022), who also confirmed that gender inequality in entrepreneurship is rapidly closing up. This is further corroborated by the result of the chi-square, which rejects that there is a significant difference in entrepreneurial interest and gender.

Also, Wasilczuk and Karyy (2022) spotted slightly higher entrepreneurial intention among students in selected European countries. Hence, the results clearly show no statistical difference between the entrepreneurial intention and gender of both males and females. This implies that both male and female students fall within the same category regarding their entrepreneurial interests though that of males is slightly higher than females. The result of this study is in line with Shneor and Jensson (2014) and Brush (2008) but differs from Sieger et al. (2021) and Yordanova and Tarrazon (2010).

The study found that entrepreneurship education, relational support, risk-taking, self-efficacy, and at-

attitudes toward behavior significantly influence the entrepreneurial interest of both male and female students. Training through proper entrepreneurship education courses has also been acknowledged by Rietveld and Patel (2022) and Tsyganova and Shirokova (2010) to foster the entrepreneurship interest of females. The support from friends and families and their willingness to take risks in business also influence the entrepreneurial interest of female students as well as that of males. Youths tend to develop interests in a business their families and friends are involved in, and they quickly get relative support (Akinwale, 2018; Manolova et al., 2008). This enhances the pursuit of self-realization goals of both genders, especially females, and develops their attitudes and confidence toward starting a business (Manolova et al., 2008). This deviates from Ward et al. (2019), who found that social norms and relational supports are more likely to influence males' entrepreneurial interest than females.

Ward et al. (2019) aligns with these results regarding males and females having similar risk-taking appetites in driving entrepreneurial interest. In contrast, Westhead and Solesvik (2016) and Grilo and Irigoyen (2006) revealed that males have higher risk-taking than their female counterparts. This study also indicates that females have self-efficacy and confidence toward starting their businesses similar to that of males, which deviates from the related studies (Caro-González et al., 2017; Dabic et al., 2012), which opined that females display low confidence in becoming successful future entrepreneurs than males. All these factors are also significant in driving entrepreneurial practice for the two genders, except university ecosystem for both, relational support for females, and attitudes for males. The university ecosystem has a lower likelihood and is insignificant in influencing the entrepreneurial interest of male students, but it is significant in influencing female entrepreneurial interest, though low. In addition, the university ecosystem is not significant in driving entrepreneurial practice for both genders. It could be deduced that

while entrepreneurship education plays a significant impact in driving entrepreneurial interest and practice of both male and female students in Nigeria, the university ecosystem is lagging despite the availability of entrepreneurship centers in most universities. This is not in line with Butkouskaya et al. (2020) and Saeed et al. (2015), who asserted that the university ecosystem influences students across the genders.

These results could be due to female students realizing the great challenges of being employed in government institutions, as the Nigerian government is reducing the number of civil servants by privatizing some of the institutions and scrapping others to reduce the cost of governance. More so, there is a gradual cultural change of women in Nigeria deviating from their initial mindset of staying at home as full housewives as many young men are only getting married to the women that could support them in meeting some of the financial responsibilities of the household.

The policy implication in this study includes the university administration ensuring that both female and male students are equally well exposed to starting a business and well informed of all the prerequisites involved in start-ups. This might require the university administration to reassess the entrepreneurship and incubation centers in their respective universities and ensure that they are functioning according to the expectation to create a sound university ecosystem that supports practical businesses for the students. More so, entrepreneurship courses (a critical element of entrepreneurship education) should continually be improved to meet up with the dynamic reality of the world to properly train female students on entrepreneurship. This would instill confidence and entrepreneurship attitudes in female and male students toward becoming entrepreneurs before graduation. The parents should also be sensitized and encouraged to support their female children in starting a business while in school, as this relational support is relatively lower for female students.

CONCLUSION

This study sets out to explore the gender differential in entrepreneurial interest and practice among undergraduate male and female students in Nigeria. It also examines differences in the factors influencing entrepreneurial intention and entrepreneurship practice between male and female students using large-scale cross-sectional data collected in 2020/1.

The descriptive results demonstrate that the majority of students, including males and females, are interested in entrepreneurship, and their interest is high. The entrepreneurial interest of males is slightly higher than that of female students, but this is not statistically significant. The logistic regression results indicate that entrepreneurship education, relational support, risk-taking, self-efficacy, and attitudes toward behavior significantly influence male students' entrepreneurial interest. Similarly, the five factors, including the university ecosystem, significantly influence female students' entrepreneurial interests. The odd ratio for the university ecosystem is observed to be low for both genders, though that of female is slightly higher.

Meanwhile, the male students' entrepreneurial practice is influenced by entrepreneurship education, relational support, risk-taking, and self-efficacy. In contrast, the female students' entrepreneurial practice is influenced by entrepreneurship education, risk-taking, self-efficacy, and attitudes toward behavior. Entrepreneurship education is highly significant to the entrepreneurial practice of both male and female students, but the university ecosystem has no effect. This result suggests that the university ecosystem needs to be improved to support the entrepreneurship activities of students, particularly among females.

Based on the results of this study, the main recommendations are drawn as follows. The university administration should ensure that the entrepreneurship centers are managed more effectively to drive entrepreneurial interest in both male and female students, with specific provisions that could further unleash entrepreneurship potential in female students. Furthermore, the government should popularize the recently promulgated Start-up Act of 2022 and reduce the regulatory requirements of starting a business for university students. More entrepreneurship training and apprenticeship are needed to further boost students' self-efficacy and enhance their entrepreneurship tendencies. Establishing entrepreneurship infrastructure and facilities such as business incubators, innovation hubs, and competitive business grants is vital for the students to transition their entrepreneurial intention to entrepreneurship practice. Creating more awareness regarding start-ups encourages students of both genders to start a business, and female students are better at starting a business than male students. Also, parents and relatives should support their daughters appropriately and encourage them to start their own businesses.

AUTHOR CONTRIBUTIONS

Conceptualization: Caleb Adelowo, Yusuf Akinwale.

Data curation: Caleb Adelowo.

Formal analysis: Yusuf Akinwale.

Investigation: Caleb Adelowo, Yusuf Akinwale.

Methodology: Caleb Adelowo.

Project administration: Caleb Adelowo.

Resources: Caleb Adelowo, Yusuf Akinwale.

Software: Yusuf Akinwale.

Supervision: Caleb Adelowo.

Validation: Caleb Adelowo, Yusuf Akinwale.

Writing – original draft: Caleb Adelowo, Yusuf Akinwale.

Writing – review & editing: Caleb Adelowo, Yusuf Akinwale.

REFERENCES

1. Adelowo, C., & Akinwale, Y. (2022). Socio-demographic factors, entrepreneurial orientation and wealth creation among MSMEs in Nigeria. *International Journal of Technological Learning, Innovation and Development*, 14(4), 426-439. <https://doi.org/10.1504/IJTLLID.2022.128929>
2. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
3. Ajzen, I. (2011). The theory of planned behavior: Reactions and reflections. *Psychology & Health*, 26(9), 1113-1127. <https://doi.org/10.1080/08870446.2011.613995>
4. Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Prentice-Hall.
5. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
6. Akinwale, Y. (2018). Descriptive analysis of building indigenous low-carbon innovation capability in Nigeria. *African Journal of Science, Technology, Innovation and Development*, 10(5), 601-614. <https://doi.org/10.1080/20421338.2017.1366131>
7. Alene, E. (2020). Determinants that influence the performance of women entrepreneurs in micro and small enterprises in Ethiopia. *Journal of Innovation and Entrepreneurship*, 9, 24. <https://doi.org/10.1186/s13731-020-00132-6>
8. Bergner, S., Auburger, J., & Paleczek, D. (2021). The why and the how: A nexus on how opportunity, risk and personality affect entrepreneurial intention. *Journal of Small Business Management*. <https://doi.org/10.1080/00472778.2021.1934849>
9. Brush, C. G. (2008). Women entrepreneurship: A research overview. In A. Basu, M. Casson, N. Wadson, & B. Yeung (Eds.), *The Oxford Handbook of Entrepreneurship* (pp. 611-628). Oxford University Press. <https://doi.org/10.1093/oxford-hb/9780199546992.003.0023>
10. Butkouskaya, V., Romagosa, F., & Noguera, M. (2020). Obstacles to sustainable entrepreneurship amongst tourism students: A gender comparison. *Sustainability*, 12(5), 1812. <https://doi.org/10.3390/su12051812>
11. Caro-González, F., Romero-Benabent, H., & Sánchez-Torné, I. (2017). The influence of gender on the entrepreneurial intentions of journalism students. *Intangible Capital*, 13(2), 430-478. <http://dx.doi.org/10.3926/ic.927>
12. Dabic, M., Daim, T., Bayraktaroglu, E., Novak, I., & Basic, M. (2012). Exploring gender differences in attitudes of university students towards entrepreneurship: An international survey. *International Journal of Gender and Entrepreneurship*, 4(3), 316-336. <https://doi.org/10.1108/17566261211264172>
13. De Vita, L., Mari, M., & Poggesi, S. (2014). Women entrepreneurs in and from developing countries: Evidences from the literature. *European Management Journal*, 32(3), 451-460.
14. Desjardins, J. (2018, January 23). *How gender diversity enhances the bottom line*. Visual Capitalist. Retrieved September 11, 2022, from <https://www.visualcapitalist.com/gender-diversity-bottom-line/>
15. Global Entrepreneurship Monitor (GEM). (2022). *Women's entrepreneurship report: From crisis to opportunity*. Retrieved February 2, 2023, from <https://www.gemconsortium.org/reports/womens-entrepreneurship>
16. Grilo, I., & Irigoyen, J. (2006). Entrepreneurship in the EU: To wish and not to be. *Small Business Economics*, 26(4), 305-318. <https://doi.org/10.1007/s11187-005-1561-3>
17. Hechavarria, D., Bullough, A., Brush, C., & Edelman, L. (2019). High-growth women's entrepreneurship: Fueling social and economic development. *Journal of Small Business Management*, 57(1), 5-13. <https://doi.org/10.1111/jsbm.12503>
18. Heilbroner, R. L., Ajzen, I., Fishbein, M., & Thurow, L. C. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.
19. Institute for Women's Policy Research. (2016, September). *Breadwinner mothers by race/ethnicity and state* (IWPR #Q054). Retrieved from <https://iwpr.org/wp-content/uploads/2020/08/Q054.pdf>
20. Kauffman Foundation. (2015, July 20). *Women entrepreneurs are key to accelerating growth* (Policy Digest). Ewing Marion Kauffman Foundation. Retrieved from https://www.kauffman.org/wp-content/uploads/2019/12/women_entrepreneurs_are_key_to_accelerating_growth.pdf
21. Kelley, D., Baumer, B., Brush, C., Greene, P., Mahdavi, M., Majbouri, M., & Heavlow, R. (2017). *Women's entrepreneurship 2016/2017 report*. Global Entrepreneurship Research Association. Retrieved from <https://www.gemconsortium.org/report/gem-20162017-womens-entrepreneurship-report>
22. Kong, H., & Choo, S. (2022). Gender differences in the relationship between achievement motivation and entrepreneurial intention: a conditional process model of entrepreneurship and gender. *SAGE Open*, 12(2). <https://doi.org/10.1177/21582440221097897>
23. Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, 11, 907-933.
24. Macmillan, M., & Rajewski, G. (2021, November 16). *Research shows women entrepreneurs are key to inclusive economic growth*. Babson Thought & Action. Retrieved from <https://entrepreneurship.babson.edu/gem-women-entrepreneurship-report/>
25. Mahadea, D., Ramroop, S., & Zewotir, T. (2011). Assessing entrepreneurship perceptions of high school learners in

- Pietermaritzburg, Kwazulu-Natal. *South African Journal of Economics and Management Science*, 14(1), 66-79. <http://dx.doi.org/10.4102/sajems.v14i1.59>
26. Manolova, T., Brush, C., & Edelman, L. (2008). What do women entrepreneurs want? *Strategic Change*, 17(3-4), 69-82. <https://doi.org/10.1002/jsc.817>
27. Moreira, J., Marques, C. S., Braga, A., & Ratten, V. (2019). A systematic review of women's entrepreneurship and internationalization literature. *Thunderbird International Business Review*, 61(4), 635-648. <https://doi.org/10.1002/tie.22045>
28. Muntean, S., & Ozkazanc-Pan, B. (2015). A gender integrative conceptualization of entrepreneurship. *New England Journal of Entrepreneurship*, 18(1), 27-40. <https://doi.org/10.1108/NEJE-18-01-2015-B002>
29. National Bureau of Statistics (NBS). (2020). *Labor force statistics: Unemployment and underemployment report. Abridged labor force survey under Covid-19*. National Bureau of Statistics (NBS), Abuja. Retrieved from www.nigerianstat.gov.ng/pdf/uploads/Q2_2020_Unemployment_Report.pdf
30. National Centre for Technology Management (NACETEM). (2021). *Socio-economic development in Nigeria* (An unpublished report of the 2nd African Peer Review Mechanism on socio-economic development in Nigeria). NACETEM, Nigeria.
31. OECD/The European Commission. (2019). *The missing entrepreneurs: Policies for inclusive entrepreneurship in Europe*. Paris: OECD Publishing. <https://doi.org/10.1787/71b7a9bb-en>
32. Ogundana, O., Simba, A., Dana, L. P., & Liguori, E. (2021). Women entrepreneurship in developing economies: A gender-based growth model. *Journal of Small Business Management*, 59(sup1), S42-S72. <http://dx.doi.org/10.1080/00472778.2021.1938098>
33. Olofinyehun, A., & Egbetokun, A. (2022). Pooled longitudinal dataset on the assessment of an apprenticeship-based entrepreneurship intervention in Nigeria. *Mendeley Data*, V1. <https://doi.org/10.17632/x7v3gd2wm3.1>
34. Olofinyehun, A., Egbetokun, A., & Adelowo, C. (2018). The supply of high quality entrepreneurs in developing countries: Evidence from Nigeria. *Science and Public Policy*, 45(2), 269-282. <https://doi.org/10.1093/scipol/scx065>
35. Rietveld, C., & Patel, P. (2022). Gender inequality and the entrepreneurial gender gap: Evidence from 97 countries (2006–2017). *Journal of Evolutionary Economics*, 32, 1205-1229. <https://doi.org/10.1007/s00191-022-00780-9>
36. Saeed, S., Yousafzai, S., Yani-De-Soriano, M., & Muffatto, M. (2015). The role of perceived university support in the formation of students' entrepreneurial intention. *Journal of Small Business Management*, 53(4), 1127-1145. <https://doi.org/10.1111/jsbm.12090>
37. Sánchez Cañizares, S., & Fuentes García, F. (2010). Gender differences in entrepreneurial attitudes. *Equality, Diversity and Inclusion*, 29(8), 766-786. <https://doi.org/10.1108/02610151011089519>
38. Schumpeter, J. (1942). *Capitalism, socialism and democracy*. Harper and Brothers.
39. Shneor, R., & Jensson, J. (2014). Gender and entrepreneurial intentions. In L. Kelley (Ed.), *Entrepreneurial Women: New Management and Leadership Models* (pp. 15-67). Santa Barbara, CA: Praeger Publisher.
40. Sieger, P., Raemy, L., Zellweger, T., Fueglistaller, U., & Hatak, I. (2021). *Global student entrepreneurship 2021: Insights from 58 countries*. GUESSS. Retrieved from https://www.guesssurvey.org/resources/PDF_InterReports/GUESSS_2021_Global_Report.pdf
41. Statista. (2022). *Unemployment rate in Nigeria in selected quarter between the 1st quarter of 2015 and the 4th quarter of 2020*. Retrieved February 11, 2023, from <https://www.statista.com/statistics/1119375/unemployment-rate-in-nigeria-by-quarter/>
42. Strawser, J., Hechavarria, D., & Passerini, K. (2021). Gender and entrepreneurship: Research framework, barriers, and opportunities for women entrepreneurship worldwide. *Journal of Small Business Management*, 59(1), 1-15. <https://doi.org/10.1080/00472778.2021.1965615>
43. Thebaud, S. (2015). Status Beliefs and the Spirit of Capitalism: Accounting for Gender Biases in Entrepreneurship and Innovation. *Social Forces*, 94(1), 61-86. <https://doi.org/10.1093/sf/sov042>
44. Tsyganova, T., & Shirokova, G. (2010). Gender differences in entrepreneurship: Evidence from GEM data. *Organizations and Markets in Emerging Economies*, 1(1), 120-141. <http://dx.doi.org/10.15388/omee.2010.1.1.14309>
45. Ward, A., Hernández-Sánchez, B., & Sánchez-García, J. (2019). Entrepreneurial potential and gender effects: The role of personality traits in university students' entrepreneurial intentions. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.02700>
46. Wasilczuk, J., & Karyy, O. (2022). Youth attitude to entrepreneurship in Eastern and Central European countries: Gender aspect. *Problems and Perspectives in Management*, 20(3), 83-94. [http://dx.doi.org/10.21511/ppm.20\(3\).2022.07](http://dx.doi.org/10.21511/ppm.20(3).2022.07)
47. Westhead, P., & Solesvik, M. (2016). Entrepreneurship education and entrepreneurial intention: Do female students benefit? *International Small Business Journal*, 34(8), 979-1003. <http://dx.doi.org/10.1177/0266242615612534>
48. World Intellectual Property Organization (WIPO), Dutta, S., Rivera León, B. L. L., & Wunsch-Vincent, S. (2022). *Global innovation index 2022: What is the future of innovation-driven growth?* Geneva: WIPO. <https://doi.org/10.34667/tind.46596>
49. Yordanova, D., & Tarrazon, M. (2010). Gender differences in entrepreneurial intentions: Evidence from Bulgaria. *Journal of Developmental Entrepreneurship*, 15(3), 245-261. <https://doi.org/10.1142/S1084946710001543>