# BRIDGING GENDER GAPS IN TECH ENTREPRENEURSHIP FOR SUSTAINABLE GROWTH IN NIGERIA

**Adenike T. EGUNJOBI**
*University of Lagos, Akoka, Nigeria*
*Faculty of Social Sciences*
*Department of Economics*
*aegunjobi@unilag.edu.ng*
*adenikejesus@gmail.com*
**Oluwakemi M. ADEMISOLA**
*University of Lagos, Akoka, Nigeria*
*Faculty of Social Sciences*
*Department of Economics*
*kemiademi@gmail.com*

**Abstract**
*Entrepreneurship has no perimeter to individual differences (gender, race, colour, and culture). This makes gender equity, a bedrock to flourishing modern economies that desires sustainable inclusive growth. However, statistical evidence shows women have been underrepresented in the tech entrepreneurship space in Nigeria. Hence, this study assessed the gap and how this gap can be bridged using a survey from seven technology-based firms in Lagos state via the use of Multinominal Regression. Result revealed that there is a significant relationship between discipline in education and technology-based skills and the ability to establish or work in a technology-based firms. The study therefore recommends that grants and scholarships in STEM education be given to females which will be used to make policy recommendations that will help reduce gender inequality among tech entrepreneurs in the future.*

**Keywords:** Entrepreneurship, Gender gap, Multinomial regression STEM Technology
**JEL Classification. L26, J71, O33**

## 1.0 Introduction

Entrepreneurship has no perimeter to individual differences such as gender, race, color, and culture. This suggests that either a male or female can become an entrepreneur and this makes gender equity a bedrock for flourishing modern economies that desires sustainable inclusive growth. Therefore, recognizing gender equality is important to ensure that both genders can contribute fully to the advancement of the society and economy at large. Moreso, as it increases the efficiency, capacity, and size of the economy through inventiveness and competitiveness (Zanjirchi et al., 2019; Akpodono, 2016).

Without mincing words, women too can make significant impact on sustainable growth through their contribution to business activities in terms of job creation, poverty alleviation, and

reducing social exclusion. The gender gap in entrepreneurship has drawn the attention of emerging works of literature in recent years to female entrepreneurs because it has been recognized to represent one of the fastest-growing categories of entrepreneurship across the globe (Kelley et al., 2017; Hechevarría et al., 2019; Bahmani-Oskooeeet al., 2013; Ayogu and Agu, 2015). The Organisation for Economic Co-operation and Development (OECD) in 2004, regarded female entrepreneurs as untapped resources for sustainable growth through their contribution to job creation both for others and themselves. Women also contribute to society via their input to problem-solving in businesses as well as utilization of entrepreneurial opportunities.

The dependence on technology has experienced exponential growth in the last decade, and accounts for the leading contributions to the global market (Techmirror, 2021; Watters, 2018; Merchant Machines, 2020). It directly impacts our daily activities and life, work, finance, education, and even leisure. Also, solutions in the areas of environment and health in modern-day society are developed through the use of advanced technology. If women are not involved in the advanced process of technology in the various sectors of society, then, the perspective of women has undoubtedly been ignored. If the advancement in technology would be of benefit to everyone in society, then the people who made them must incorporate both genders of requisite skills and gender balance (Aidis, 2016; Berg et al, 2018).

However, the Global Entrepreneurship Monitor (GEM) in 2019, highlighted that the widest gap ever existed among entrepreneurs is in technology, and this is reflected in the differences in business activities engaged by both genders, where males are more than twice their female counterparts. The systematic mapping study of Wilson and Paton-Romero (2022) also revealed that there are countries with no women in the technology business. In addition, identified problems also include; uneven access to education of the girl child, less number of female students offering science and technology related courses, occupational segregation especially in technology companies because of the use of equipment/tools and religious discrimination of women. Therefore, the gender gap between male and female technopreneurs needs to be reduced through the involvement of more females in the computer science field and in the technology-based entrepreneurial career path. Thus, this study is set out to evaluate the cause of the existing gender bias in technology-based firms in Nigeria while also examining how to reduce gender gap in order to promote sustainable development.

Most exiting studies have examined gender differences in entrepreneurship and women entrepreneurship across the globe (Sajjad et al, 2020; Pandang et al, 2022; Henry, Ahl and Foss 2015; Omoyele et al 2023). However, only few of these studies conducted on other countries (but not in Nigeria) have focused on gender differential in entrepreneurship with attention on technology-based firms' establishment and job roles (Kavoleva et al, 2021; Wilson and Paton-Romero, 2022). This study will therefore contribute to knowledge and is different from others by being the first of such study to focus on Nigeria and specifically Lagos State, and also in the use of a different technique, the Multinominal Regression to assess the relationships between gender, skills, discipline in education and job role and establishment of businesses with reference to Tech–related.

**2.0 Literature Review**
**Theoretical Background**
**Resource-based theory and Feminist theory**

This study is established on the resource-based theory and the feminist theory. The resource-based theory established by Conner (1992), and Rumelt (1987) argued that the economy depends mainly on the effective usage of both the tangible and intangible resources at the disposal of the country which gives them an absolute advantage to fostering economic growth (Mwailu and Mercer, 1983; Wernerfelt, 1984, Rumelt, 1984 and Penrose, 1959). Therefore, considering the continuous increase in the population of females in Nigeria which accounts for 49.46 percent, i.e. almost half the total nation's population (WDI, 2022) and based on this theory, if this female population size is efficiently managed, the country's economy can be transformed and prospered through entrepreneurship. It is therefore imperative for a country to utilize all its resources to stimulate sustainable development.

In addition is the feminist theory which has formed a core argument for feminism. Offen (1988) opined that the female gender should be given equal opportunity socially, politically, and economically and by extension, equality in entrepreneurship. The theory frowns against subordination, oppression, and inequality of the female gender and identifies capital deprivation, industry experience differences, educational differences, and networking relationships in society as these affect the success and growth of female entrepreneurs (Appelbaum, Audet, and Miller, 2003; Cron, Bruton, and Slocum, 2006). Gender issues have been proven to affect small and medium-scale businesses in Nigeria as most women entrepreneurs' activities have been swept under the carpet by classifying them under the informal and micro sectors (UNCTAD, 2014).

**Empirical Review**
**Entrepreneurship, Women, and Sustainable Growth**

Entrepreneurship in recent years has been drawing significant attention due to the obvious gender differences that exist in the participation of doing business. The word gender gap has been expanded to encompass not only differences in wages, but also the uneven economic contribution between male and female workers to the economy, and the uneven progress in career (Goldin 1990; Blau and Kahn 1994; 2017; Card et al. 2015). The study of Sajjad et al. (2020) assessed the contribution of female entrepreneurs to economic development globally. The study employed the use of secondary data from 69 countries, using a multiple regression analysis. The findings from the study showed that women's participation in entrepreneurship has improved the well-being of society through improved income and thus, advanced global economy. On the contrary, Satpayeva et al. (2020), examined female entrepreneurs in Kazakhstan using the systematic approach and statistical methods. However, findings revealed that although there has been an increase in the number of female entrepreneurs in the country, their business activities have had not much significance on the economy as such, businesses have not experienced many turnovers especially in the number of employees.

A study was done in Bangladesh, the Philippines, and Africa (Benin, Malawi) by Quisumbing, et al. (2021), on gender equality and empowering women in agriculture and the value chain for the food system, employing a primary survey for data collection. The findings from their study showed that engaging in entrepreneurship activities is insignificant to gender equality rather, education and training of the gender is positively significant for growth. This was

not the same for Chiewattanakul et al. (2021) on the study of women entrepreneurship in the Pacific and Asia. The survey for these regions revealed a high level of the gender gap, as the results showed that the nonexistence of advisors, the traditional gender role of females, and economic disparity among others are responsible for female non-functionality in the entrepreneurship world. Findings also collaborated with the results of the Africa Development Bank (2018) that the barriers responsible for women's inability to participate fully in the entrepreneurship space in the Asian region are embedded in social norms and habitual practices which are pointers to how much funds, time and independence a woman will devote to personal businesses.

## Gender Equality and Tech Entrepreneurship

The argument that the founding of technology-based firms is generally referred to as a male domain is not far-fetched given the fact that the proportion of women in technology-based firms and employment is proportionally low (Dautzenberg. 2012). The argument is also based on the fact that entrepreneurship trait is stereotypically accorded to males coupled with the lack of female gender inclusion in the conception of the technology sector (Aidis. 2016; Berg et al, 2018). The study of (Porter and Serra 2020; Breda et al 2021) showed that the factor responsible for the gender gap in tech entrepreneurship can be traced to gender sorting according to discipline in education, which STEM particularly emphasize. These studies also found that there are differences in the early career path for both men and women. Likewise, (Nollenberger et al. 2016; Abraham 2017; 2019; and Wu 2018) findings also revealed that the absence of female superiors has widened the gap between gender tech entrepreneurs' most especially female employees in the aspect of wages and career advancement. Thebaud (20150, and Markussen and Roed (2017), in their studies also identified venture capital financing as more male-dominated which was acknowledged as a contributing factor to the widening gender gap in entrepreneurship. Also, Scott and Shu (2017) and Guzman and Kacperczyk (2019), revealed that tech entrepreneurship is a capital-intensive business, as such, females in the industry receive less funding compared to their counterparts in the same industry.

## 3.0 Methodology

The survey research design was adopted to examine the causes of the gender gap in technology-based entrepreneurship and discover how reduction in gender gap can achieve sustainable growth in Nigeria. The population for this study are employees in seven technology-based firms within Lagos state. A random sampling technique was adopted in selecting these firms within the state. However, the names of these firms will be kept private due to the existence of gender disparities observed during the survey.

## 4.0 Results and Findings

This section presents the results obtained from the research survey. 700 questionnaires were administered to 7 technology-based firms in Lagos State while a total of 573 questionnaires were retrieved from the conducted survey. This represents 81.9% of responses of the total sample size. By implication, this data is considered suitable for this study. Before proceeding to analyze the collected responses, the demographic characteristics of participants will be presented. This is to ensure that the population under study is gender bias-free, category of

business skewness, and other socio-economic narrow-mindedness that can stem from the population size are adequately taken care of.

**Table 1: Demographic data of the study**

| S/N | Item | Scale | Freq. | Percent | Mean |
|-----|------|-------|-------|---------|------|
| 1 | Gender | Male | 357 | 62.3 | 1.3770 |
|   |        | Female | 216 | 37.7 |  |
|   |        | Total Count | **573** | **100** |  |
| 2 | Age | Less than 30 years | 264 | 46.3 | 1.8053 |
|   |     | 31-40 years | 165 | 28.9 |  |
|   |     | 41-50 years | 129 | 22.6 |  |
|   |     | 51 years and above | 12 | 2.1 |  |
|   |     | Total | **570** | **100.0** |  |
| 3 | Education | NCE/ND | 21 | 3.7 | 2.3404 |
|   |           | HND/B.Sc | 330 | 58.5 |  |
|   |           | Post Graduate | 213 | 37.8 |  |
|   |           | **Total** | **564** | **100.0** |  |
| 4 | Course Studied | Non Computer/Tech Related | 501 | 90.3 | 1.0973 |
|   |                | Computer/Tech Related | 54 | 9.7 |  |
|   |                | **Total** | **555** | **100.0** |  |
| 5 | Job Role | Non-Tech Related | 444 | 85.5 | 1.1445 |
|   |          | Tech Related | 75 | 14.5 |  |
|   |          | Total | **519** | **100.0** |  |
| 6 | Company Size | 1-20employees | 108 | 21.1 | 1.6725 |
|   |              | 21-50employees | 129 | 25.1 |  |
|   |              | 51 and above | 276 | 53.8 |  |
|   |              | **Total** | **513** | **100.0** |  |

**Source: Field survey 2024**

Table 1 above shows the demographic characteristics of the respondents for this study. From the responses, it is very obvious that more males are working in technology-based firms than females. The survey showed that 357 responses are from the male which is represented by 62.3% and the female is 37.7% (216 respondents), depicting the existence of gender gap. Also, table 1 reveals that most employees in these firms are less than 30 years of age represented by 46.3% of the total responses. The majority of the employees are first degree holders which is represented by 58.5% of the total responses from the firms. Most of the respondents, 90.3% have studied courses which are non-tech related. Also, most of the employees have job roles that are non-tech related they represent 85.5% of the respondents in which 60% of them are females. The company size is about 50 employees and above. However, most of the respondents are not job owners.

**Table 2: Reasons for gender imbalance in tech entrepreneurship**

| S/N | Item | Scale | Freq. | Percent | Mean |
|---|---|---|---|---|---|
| 7 | Founding technology-based firms is commonly regarded as a male domain | Strongly Disagree | 66 | 11.6 | 3.2474 |
| | | Disagree | 162 | 28.4 | |
| | | Neutral | 99 | 17.4 | |
| | | Strongly Agree | 51 | 8.9 | |
| | | Agree | 192 | 33.7 | |
| | | **Total** | **570** | **100.0** | |
| 8 | Most Females do not have a STEM background | Strongly Disagree | 75 | 13.1 | 3.0681 |
| | | Disagree | 192 | 33.5 | |
| | | Neutral | 105 | 18.3 | |
| | | Strongly Agree | 21 | 3.7 | |
| | | Agree | 180 | 31.4 | |
| | | **Total** | **573** | **100.0** | |
| 9 | Females lack or have low skills in technology | Strongly Disagree | 162 | 28.3 | 2.304 |
| | | Disagree | 246 | 42.9 | |
| | | Neutral | 69 | 12.0 | |
| | | Strongly Agree | 0 | 0 | |
| | | Agree | 96 | 16.8 | |
| | | **Total** | **573** | **100.0** | |
| 10 | More women who have the expertise do not have access to finance for the establishment | Strongly Disagree | 51 | 8.9 | 3.300 |
| | | Disagree | 129 | 22.5 | |
| | | Neutral | 120 | 20.9 | |
| | | Strongly Agree | 75 | 13.1 | |
| | | Agree | 198 | 34.6 | |
| | | **Total** | **573** | **100.0** | |
| 11 | Venture capital investment points to the sociocultural gender bias | Strongly Disagree | 54 | 9.5 | 1.598 |
| | | Disagree | 129 | 22.6 | |
| | | Neutral | 174 | 30.5 | |
| | | Strongly Agree | 18 | 3.2 | |
| | | Agree | 195 | 34.2 | |
| | | **Total** | **570** | **100.0** | |
| 12 | Females are less flexible to work conditions as business owners (time and mobility) | False | 234 | 41.1 | 4.375 |
| | | True | 336 | 58.9 | |
| | | **Total** | **570** | **100.0** | |

**Source: Field survey 2024**

Table 2 above is a summary of the reasons behind gender gaps in technology entrepreneurship in Nigeria. The survey also reveals that females usually believe that founding or working in a technology-based firm is usually assumed to be the male domain as represented by 33.7% of the total sample size in this study. The respondents however disagreed that the STEM background has contributed to the wider gender gap in tech entrepreneurship in Nigeria. This is

represented by 33.5% of the respondents (192 responses). Likewise, a total of 42.9% (246 respondents) also disagreed that the female gender does not have the required technological skills as an entrepreneur. 34.6% of the respondents also agreed that most women who possess tech skills do not have access to finance and this has promoted a very wide gender gap among tech entrepreneurs. Also, the respondents consented that females on most occasions, suffer from opportunities to invest (venture capital) into the business and this is represented by 195 (34.2%) respondents. In summary of Table 1, most respondents agree 58.9% (346 respondents) that females are less flexible in working and moving around, this accounts for gender differences in the tech space.

**Table 3: how to reduce gender gap for sustainable development**

| S/N | Item | Scale | Freq. | Percent | Mean |
|-----|------|-------|-------|---------|------|
| 13 | Designing and Implementing of National Strategies such as training to improve female tech skills | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 24<br>3<br>39<br>171<br>330<br>**567** | 4.2<br>.5<br>6.9<br>30.2<br>58.2<br>**100.0** | 4.426 |
| 14 | Femaletechnopreneurs can be fostered by promoting diversity in tech entrepreneurship and engagement in innovation | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 9<br>12<br>33<br>189<br>327<br>**570** | 1.6<br>2.1<br>5.8<br>33.2<br>57.4<br>**100.0** | 4.026 |
| 15 | Fostering evidence-based gender-related actions by collecting gender-disaggregated data. | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 9<br>39<br>174<br>54<br>294<br>**570** | 1.6<br>6.8<br>30.5<br>9.5<br>51.6<br>**100.0** | |
| 16 | Publication of an annual technology-based entrepreneur's gender report | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 27<br>12<br>120<br>72<br>336<br>**567** | 4.8<br>2.1<br>21.2<br>12.7<br>59.3<br>**100.0** | 4.195 |
| 17 | Providing funds and grant schemes aimed at enrolling women in STEM education | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 15<br>9<br>39<br>183<br>318<br>**564** | 2.7<br>1.6<br>6.9<br>32.4<br>56.4<br>**100.0** | 4.383 |

| 18 | Establishing awards and prizes enhancing the visibility of women in STEM and in high-technology sectors | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 12<br>3<br>57<br>183<br>312<br>**567** | 2.1<br>.5<br>10.1<br>32.3<br>55.0<br>**100.0** | 4.375 |
| --- | --- | --- | --- | --- | --- |
| 19 | Facilitating the participation of women in the tech-based labour market | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 12<br>3<br>51<br>183<br>318<br>**567** | 2.1<br>.5<br>9.0<br>32.3<br>56.1<br>**100.0** | 4.396 |
| 20 | Implementing awareness campaigns tackling socio-cultural norms and biases | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 9<br>3<br>54<br>171<br>330<br>**567** | 1.6<br>.5<br>9.5<br>30.2<br>58.2<br>**100.0** | 4.428 |
| 21 | Increase in the demand for female skills will reduce the gender gap | Strongly Disagree<br>Disagree<br>Neutral<br>Strongly Agree<br>Agree<br>**Total** | 6<br>54<br>72<br>150<br>291<br>**573** | 1.0<br>9.4<br>12.6<br>26.2<br>50.8<br>**100.0** | 4.162 |

**Source: Field survey 2024**

The summary of how the gender gap in tech entrepreneurship is reduced for sustainable growth is presented in Table 3 above. The survey revealed that 58.3% represented by 330 respondents agreed that recognizing female deficiency in tech and implementing national strategies such as training to improve women's tech skills will reduce the gender gap and bring more development in tech-entrepreneurship. Also from the same table, 57.3% of the respondents agreed that through the promotion of diversities in the technology space and engagement through innovation, the inclusion of females in the tech space can be fostered. The responses from 296 respondents representing 51.6% of the study sample size agreed that having disaggregated data on gender imbalances will be of help in identifying how such gaps can be reduced. Furthermore, a total of 336 (59.3%) respondents opined that a continuous report on entrepreneurs in the tech space will aid in bridging the gender gap in the technology profession. Providing funds and grants for women in STEM education will aid in reducing the gender gap in technology as purported by 318 (56.4%) respondents. Additionally, 312 (55%) respondents opined that when awards are given to women in STEM education, it enhances their visibility in the tech space. Also, 318 (51.6%) responses show that facilitating the participation of women in the tech-based labour market will reduce the gender gap. The participants agreed that the gender gap can be reduced through campaigns against norms and socio-cultural ethics that are biased gender-wise especially as relates to business. Furthermore, 291 (50.8%) respondents

agree that gender gap in the tech space can be reduced by increasing the demand for female skills.

**Table 4: Multinomial Regression Result**

**Step Summary**

| Model | Action | Effects | Model Fitness criteria -2log likelihood | Effect selection tests | | |
|---|---|---|---|---|---|---|
| | | | | Chi-Square[a] | Df | Sig. |
| 0 | Entered | Intercept, STEM background, Gender | 215.793 | . | | |
| 1 | Entered | Technology skill * Age * Gender | 197.390 | 18.404 | 4 | .001 |
| 2 | Entered | STEM background * Age * Gender | 186.931 | 10.459 | 4 | .033 |

**Source: field survey 2024**

The table above shows the interactions among the variables of interest to discover the factors responsible for the gender gap in the technology space in entrepreneurship. The Chi-Square statistics of technology skill, age, and gender is (18.404, p <0.05), which implies that this interaction has a significant effect on tech-related professions and job role as a tech expert. Also, the chi-square statistics of STEM background, gender, and age (10.459, p <0.05) signify that the interaction between the variables has a significant effect on tech-related professions and job role as a tech expert. Thus, the collaboration of technology skill, age, and gender will promote the development of tech-related professions and their job role as tech experts. Also, the collaboration of STEM background, gender, and age will further encourage the progress of tech-related professions and their job role as tech experts.

**Table 5: Model Fitness Information**

| Model | Model Fitness criteria 2log likelihood | Likelihood Ratio Tests | | |
|---|---|---|---|---|
| | | Chi-Square[a] | Df | Sig. |
| Intercept Only | 224.695 | | | |
| Final | 186.931 | 37.764 | 13 | .000 |

**Source: field survey 2024**

The model of fitness was assessed using the Chi-square statistic. The chi-square value was 37.764 and the p-value is less than 0.05. this proves that there is a significant relationship between the dependent variable and the independent variables in the final model. This result implies that gender is mostly considered in employing a tech-skill expert in most fin-tech companies.

**Table 6: Goodness-of-Fit**

|  | Chi-Square[a] | Df | Sig. |
|---|---|---|---|
| Pearson | 143.169 | 55 | .700 |
| Deviance | 142.189 | 55 | 1.000 |

**Source: field survey 2024**

The goodness-of-fit model further justifies the fitness of the model for this study as the Pearson value of (143.169) and the Deviance value of (142.189) from Table 6 above showed that the model is fit, since the tests are not statistically significant as the p-value is greater the 0.05.

**Table 7: Likelihood Ratio Tests**

| Effect | Model Fitting Criteria | Likelihood Ratio Tests | | |
|---|---|---|---|---|
|  | -2 Log Likelihood of Reduced Model | Chi-Square | Df | Sig. |
| Intercept | 186.931[a] | .000 | 0 | . |
| STEM Background | 197.707 | 10.776 | 4 | .029 |
| Gender | 192.709 | 5.778 | 1 | .016 |
| Technology Skill * Gender | 202.028 | 15.097 | 3 | .002 |
| STEM Background * Gender | 197.390 | 10.459 | 4 | .033 |

**Source: field survey 2024**

The above result is the likelihood ratio test for the study. The result revealed that the predictors of the study such as gender, technology skill*gender, and STEM background*gender of the respondents were significant. This implies that the predictors contribute significantly to the outcome of the final model in this study.

**Table 8: Parameter Estimate**

| JobRole[a] | B | Std. Error | Wald | Df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|
| Intercept | 2.250 | .668 | 11.341 | 1 | .001 |  |
| Gender | .046 | .285 | 3.018 | 1 | .022 | 1.609 |
| Age | .212 | .163 | 1.695 | 1 | .193 | 1.237 |
| [STEM=1.00]*Gender* Age | .801 | .510 | 2.462 | 1 | .117 | 2.227 |
| [STEM=2.00]*Gender* Age | .227 | .677 | .113 | 1 | .737 | 1.255 |

| | | | | | | |
|---|---|---|---|---|---|---|
| [STEM=3.00]*Gender* Age | .264 | .406 | .422 | 1 | .056 | 1.302 |
| [STEM=4.00]*Gender* Age | .592 | .335 | 3.120 | 1 | .057 | 1.807 |
| [STEM=5.00]*Gender* Age | 0[b] | . | . | 0 | . | . |
| [Skill=1.00]*Gender*Age | -.204 | .470 | .189 | 1 | .664 | .815 |
| [Skill=2.00]*Gender*Age | 1.027 | .417 | 6.073 | 1 | .014 | 1.358 |
| [Skill=3.00]*Gender*Age | .915 | .696 | 1.726 | 1 | .189 | 2.496 |
| [Skill=5.00]*Gender*Age | 0[b] | . | . | 0 | . | . |

a. The reference category is: Tech-Related.
b. This parameter is set to zero because it is redundant.

The result above displays that for respondents with a preference for technology-related job roles, the gender of the respondents has a significant impact on the job role of the respondents. As gender (b=0.046, Wald=3.018, p<0.05) increased by 1 unit of the odd probability, the chances of tech-related job roles compared to non-tech-related job roles increased. The result also implies that tech-related businesses are likely to be owned/employ the male gender by 1.609 times than the female counterpart.

Also, the STEM background, gender, and age are shown to have a significant impact on job roles at strongly agree, which implies that age, course of study, and gender are more likely to be considered fit to own a tech business and/or be employed by 1.302 times than the respondents with no STEM background. Also, the results showed a significant impact of skills in technology, gender, and age on tech-related businesses and job roles

**Discussion of Findings**

Based on the results of this study, there are more males than females in the conducted survey on 7 technology-based firms in Lagos, Nigeria. The survey revealed that out of the respondents, only 37.7% are female and their job role is not even tech-related. Not surprising, all the firms surveyed are all owned by the male gender. This finding validates the study by Dautzenberg (2012) that the founding of technology-based firms is usually assumed male dominated as a result of the low proportion of women in the tech space. Also, the study showed that gender bias is one of the factors that debar most females from becoming tech-entrepreneurs. This also aligns with the study of (Scott and Shu 2017 and Guzman and Kacperczyk 2019), which revealed that tech entrepreneurship is a capital-intensive business, and females in the industry receive less funding compared to their counterparts in the same industry.

Sorting according to discipline in education, findings display that gender gap in tech entrepreneurship is widened. Evidence portray that most of the female respondents do not have a Science, Technology, Engineering, and Mathematics (STEM) background, which is a prerequisite to go into tech business or be employed as a tech expert, this is in line with the study of (Porter and Serra 2020 and Breda et al 2021) which exposed that the factor responsible for gender gap

in tech entrepreneurship can be traced to gender sorting according to discipline in education, in which STEM is particularly emphasized with differences in the early career path for both men and women.  Result also revealed that tech skills and age also have a significant relationship with job role and been a tech entrepreneur as depicted by the survey since most of the respondents are below 30 years of age.

## 5.0 Summary, Conclusion and recommendations

The study examines bridging the gender gap in tech entrepreneurship for sustainable growth in Nigeria by making use of seven technology-based firms in Lagos to first confirm the gender gap in the workplace and among the owners of these firms. It was confirmed that gender imbalance exists among the employees. It also confirmed a significant relationship between STEM education, technology-related skills, and job roles. Conclusively, given that the CEOs of these technology-based firms were all males because founding a technology-based firm is considered capital intensive and funds are usually granted to male founders than their female counterparts, thus, pursuing tech relevant discipline in education and technology-related skills are germane factors responsible for the widening gender gap to becoming a technology-based entrepreneur and must be seriously addressed by all stakeholders to reduce gender gap in tech entrepreneurship and foster sustainable development.

Recommendations

This study therefore recommends that:

Females who show interest in the establishment of technology-related firms be funded not only through government schemes but by stakeholders who have an interest in technology innovations.

Also, females should be considered for grants and scholarships to study STEM-related courses and tech-related skills which will contribute to bridging the gender gap in technology.

The survey from this study also discovered that age is a silent factor that determines the opportunity for both genders to be in the technology space in Nigeria, this implies that age is a restriction in the tech career. This study therefore recommends that restriction to age as a beneficiary to grants and scholarships in STEM education and skills acquisitions most especially for female be removed.

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