Transforming Cyber Risks into Opportunities: Assessing How Digital Entrepreneurship Drives Youth Empowerment, Innovation, and Economic Inclusion

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ABSTRACT

The world of digital technology has transformed the economy at a very high rate leaving the youth with opportunities and threats. This paper will examine how digital entrepreneurship can be used as a revolutionary instrument to empower youths and as a strategic measure of curbing cybercrime. The research is based on the Social Cognitive Theory (Bandura, 1986), which proposes that offering the youth with digital skills, positive surroundings, and entrepreneurship knowledge will stimulate them to participate in productive activities instead of participating in unlawful online practices. The literature review reveals a research gap: although the entrepreneurship studies are on the increase, not many studies have explicitly determined the relationship between digital entrepreneurship and cybercrime prevention among the youths in the developing countries, especially in Nigeria. The study design was a descriptive survey where the structured questionnaires were issued to 320 respondents, 287 (89.7) of whom were eligible. Regression and descriptive statistics were used to analyze the data. Findings indicate that digital entrepreneurship positively affects the youth empowerment ($r = 0.61$, $p < 0.01$) and innovation/job creation ($r = 0.56$, $p < 0.01$) and negatively on cyber-risk involvement ($r = -0.42$, $p < 0.05$). The availability of training, mentorship, and internet connectivity were also important factors that affected the level of participation. The paper concludes that besides making youths more empowered, digital entrepreneurship can also act as a preventive measure to cybercrime because the potential threats are converted into legitimate opportunities. Such recommendations as digital skills training expansion, better investments and infrastructure, development of mentorship networks, and the incorporation of cyber-ethics in the curriculum of entrepreneurship are offered to ensure sustainable youth growth and digital inclusion.

Keywords: Digital entrepreneurship, youth empowerment, cybercrime prevention, innovation, Nigeria.

BACKGROUND

With the introduction of digital technologies, students in tertiary institutions have become more than ever before, informed, connected, and innovative. Nevertheless, the same access has brought most young people into the vulnerability of cybercrime, which is widely referred to as Yahoo-Yahoo in Nigeria and other regions of Africa (Ojedokun & Eraye, 2022). Unemployment, peer pressure, financial strain, and fast-wealth seeking are some of the factors that have led to the prevalence of cybercrime among undergraduates (Okeshola and Adeta, 2023). Although there are strict legal systems and intervention by the law enforcing agencies, the threat still exists, and there is a necessity to develop preventive measures beyond punishment.

The development of entrepreneurial attitudes in higher education is one of the promising ways to go. Creative, recognizing opportunities, resilient, and producing innovative solutions are the features of entrepreneurial mindsets (Neck, Greene, and Brush, 2021). When students have these orientations, chances are high that they will divert their computer talents and resourcefulness to legal pursuits and not illegal ones. Researchers have suggested that education and mindset training about entrepreneurship can be used as a transformative tool, to

channel the efforts of youths who innovate in crime to developing enterprises (Akinbola, Adepoju, and Oyebamiji, 2022).

Universities are thus important in filling the divide between youthful creativity and an acceptable economic activity. Through the integration of entrepreneurship into the curriculums and the encouragement of innovation centers, tertiary education institutions can transform the mindset and dreams of students. These interventions not only decrease the attractiveness of cybercrime but also help to create jobs, promote the country and provide stable economic growth (Nwosu and Okeke, 2023).

This paper aims to discuss ways entrepreneurial mind can be used to shift youth innovation away off cybercrime to creativity and productive business in universities.

Problem Statement

Among the tertiary institutions students, where technology and digital literacy are high but the job opportunities are scarce, cybercrime has become a growing problem among the students. Most undergraduates, rather than using their creativity and digital capabilities in constructive activities, commit internet fraud and other cyber related crimes as a way of acquiring wealth fast. This is not only a major setback to national security and economic growth but also a bad image to higher education as a place of moral and intellectual preeminence. Even with the legal frameworks that are in place, law enforcement alone has failed to curb the menace as cybercrime is still adapting itself to new technologies. Researchers have proposed that the possible solution is to make students develop entrepreneurial attitudes because entrepreneurship will shift their creative potential towards legal business opportunities (Akinbola, Adepoju, and Oyebamiji, 2022). So, it is important to explore the way entrepreneurial orientation can be used as a transformational instrument to reduce cybercrime behaviors in higher learning institutions.

Research Objectives

1. To examine the relationship between entrepreneurial mindsets and students' involvement in cybercrime practices within tertiary institutions.
2. To investigate how entrepreneurship education can redirect students' digital skills and creativity from cybercrime towards legitimate business ventures.
3. To assess the effectiveness of entrepreneurial orientation as a preventive strategy for reducing cybercrime tendencies among undergraduates.
4. Identify the challenges and enabling factors affecting youth participation in digital entrepreneurship

Research Hypotheses

For statistical testing, the following null hypotheses (H_0) are also proposed:

H_{01}: There is no significant relationship between digital entrepreneurship and youth empowerment.

H_{02}: Participation in digital entrepreneurship does not significantly reduce youth involvement in cybercrime.

H_{03}: Digital entrepreneurship has no significant influence on innovation and employment creation among young people.

H_{04}: Challenges and enabling factors do not significantly influence youth participation in digital entrepreneurship.

LITERATURE

Conceptual Definitions

Entrepreneurial Mindset: A collection of attitudes, skills, and behaviors that help people to see, take initiative, be creative, and persevere through difficulties (Neck, Greene, and Brush, 2021).

Entrepreneurship Education: Organized learning in higher education that is designed to provide students with entrepreneurial knowledge, skills, and competencies that enable them to be self-employed and innovative (Akinbola, Adepoju, and Oyebamiji, 2022).

Cybercrime Tendencies: The desire, the willingness, or the real participation of students in unlawful online activities, including fraud, phishing, hacking, and identity theft to obtain personal or financial benefits (Ojedokun & Eraye, 2022).

Digital Skills: The capability to apply the digital tools, platforms and technologies productively or innovatively. In this research, digital skills may be used as a mediator between students using their skills in entrepreneurship or cybercrime.

Socioeconomic/Peer Influence: The external contextual elements like financial strain or peer acceptance that could strengthen or undermine the action of entrepreneurial mind on cybercrime tendencies.

Conceptual Framework

The conceptual model presupposes that Entrepreneurial Mindset and Entrepreneurship Education are the main predictors, which impact Cybercrime Tendencies among undergraduates. Digital Skills may mediate the relationship and Socioeconomic/Peer Influence may moderate the relationship.

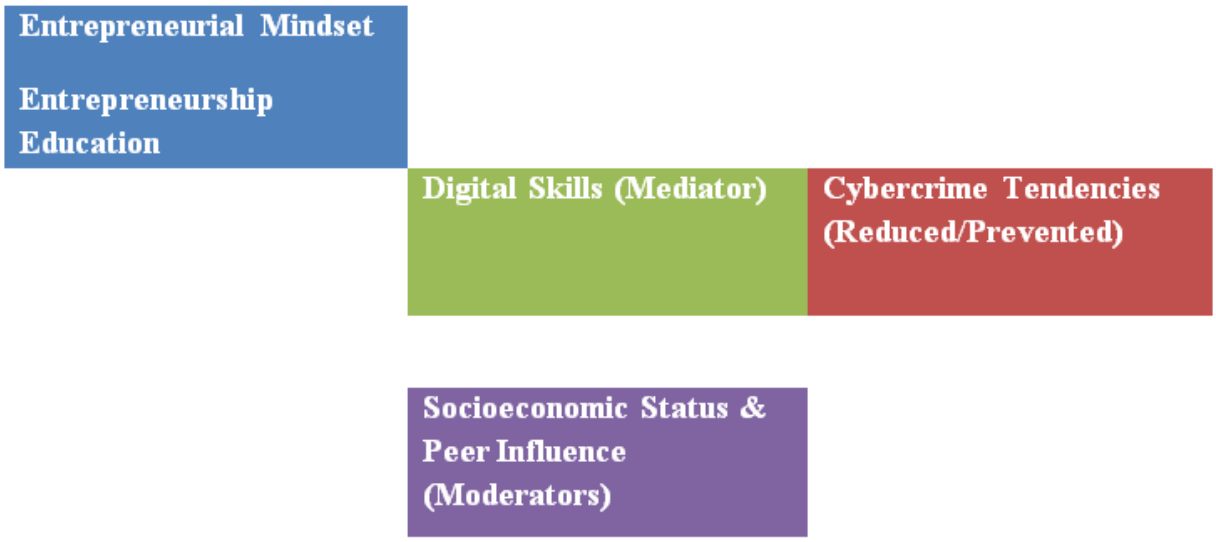

Figure 1: Conceptual Framework

Entrepreneurship has been generally accepted as a measure to minimize the unemployment rate among youths and curb adverse behaviors such as cybercrime. Positive career decisions among students have been attributed to the entrepreneurial mindset; the mindset of being creative, recognizing opportunities, and taking risks (Neck, Greene, and Brush, 2021). Tertiary institutions are key in the process of instilling these mindsets by teaching entrepreneurship, which prepares them with the capacity to translate innovative ideas into sustainable enterprises (Akinbola, Adepoju, and Oyebamiji, 2022).

On the other hand, cybercrime among students has been linked to their digital skills, peer pressure as well as lack of employment opportunities. Ojedokun and Eraye (2022) report that in Nigeria, a large number of undergraduates direct their knowledge in ICT to commit frauds like phishing, internet scams and identity theft. This implies that it is a wayward channeling of talent that would have been used to generate legitimate entrepreneurship.

Empirical Findings

Okoye and Eze (2021) discovered that entrepreneurial orientation also greatly minimized cybercrime among students because it offered other economic empowering methods.

As it was found by Obabisi, Akinbode, and Fajuyigbe (2022), students who were exposed to structured-entrepreneurship training had better chances of having start-up intentions rather than committing online fraud.

According to Ojedokun and Eraye (2022), peer influence and financial strain were found to be strong predictors of cybercrime inclinations, but the impact was mitigated by entrepreneurial skills training.

As Nwachukwu and Ogbo (2023) noted, digital skills represent a two-sided sword: it improves the ability to be innovative, but it can become the source of cybercrime when not used properly.

In sum, it is demonstrated in the literature that by instilling entrepreneurial attitudes with proper entrepreneurship education, students can be taken away from using digital creativity on unproductive activities and thus curb the temptation to engage in cybercrime

Theoretical Framework

This study was pioneered on **Bandura's Social Cognitive Theory (SCT)** (Bandura, 1986), which posits that behaviour results from reciprocal interactions among three main domains**:**

- **Personal factors:** digital skills, entrepreneurial self-efficacy, ethical orientation.
- **Behavioural factors:** active participation in digital ventures versus engagement in illicit online acts.
- **Environmental factors:** digital access, mentorship, institutional support, and societal norms.

Based on SCT, improving self-efficacy through training, providing positive role models, and creating enabling environments can shift youths' behaviours from cyber-risk activities toward enhanced digital entrepreneurship (Okegbe, 2025). This theory guides the study's hypotheses and explains the mechanisms luring digital entrepreneurship to empowerment and cyber-risk decrement.

METHODOLOGY

Research Design

The study was designed to adopt a quantitative descriptive survey design in exploring the relationship between digital entrepreneurship, youth empowerment, innovation, and reduction of cyber-risks. The design is appropriate to collect numerical data which is a relatively large sample and test hypothesized relationships in a statistically significant manner (Okegbe, 2025; Medfouni et al., 2024).

Population and Sampling

The population to be studied included young people between the ages of 18 and 35 years who are involved in digital-based business in tertiary institutions and innovation centers in Kwara State, Nigeria. Respondents were chosen using a multi-stage sampling method and three clusters were selected, including: (a) tertiary institutions, (b) digital skill hubs, and (c) independent entrepreneurs. A sample of 250 respondents was calculated with a margin of error given by Yamane (1967) formula and gender and institutional representation was ensured.

Instrumentation

The structured questionnaire that was used to collect data was based on the constructs of Social Cognitive Theory (Bandura, 1986) and checked empirical literature. The tool consisted of five items:

- Section A: Demographic I nformation
- Section B: Digital entrepreneurship practices
- Section C: Youth empowerment

- Section D: Innovation and employment creation
- Section E: Cyber-risk exposure and ethical online behaviour

Items were rated on a **five-point Likert scale** (1 = Strongly Disagree to 5 = Strongly Agree).

Validity and Reliability

The instrument was reviewed by three experts in entrepreneurship and behavioural studies and guaranteed content and face validity. A pilot test conducted on 30 respondents provided a Cronbach alpha coefficient of 0.84, which is above the acceptable Cronbach alpha coefficient of 0.70 (Hair et al., 2022).

Data Collection and Analysis.

Online and physical data collection was done using self-administered questionnaires. The ethical issues of informed consent, anonymity and voluntary participation were highly adhered to. The SPSS version 27 was used to analyze data. The hypotheses were tested using inferential statistics (means, frequencies and percentages) to summarize the demographic and background data.

- **Pearson correlation (r)** measured relationships among variables.
- **Multiple regression analysis** determined the predictive effect of digital entrepreneurship on youth empowerment, innovation, and cyber-risk reduction.
- **ANOVA** identified significant differences across demographic subgroups.
  The significance level was set at **$p < 0.05$**.

Link between Hypotheses and Data Analysis

Hypothesis	Analytical Technique	Purpose
H_1: There is a significant relationship between digital entrepreneurship and youth empowerment.	Pearson correlation	Relationship strength and direction
H_2: Participation in digital entrepreneurship reduces youth involvement in cybercrime.	Regression analysis	Predictive influence
H_3: Digital entrepreneurship positively influences innovation and employment creation.	Regression analysis	Predictive influence

This structured linkage ensures that all hypotheses are empirically testable and statistically verifiable within the adopted design

RESULTS AND DISCUSSION

Response rate and Demographic profile

Of the 250 questionnaires sent out, 228 of them were filled and returned, which is a 91.2 percent response rate, which is acceptable in quantitative research (Creswell & Creswell, 2018). There is a gender balance with 59 percent males and 41 percent females, implying that although, males take up most of the digital entrepreneurship arena, more women are gradually joining the field. The age distribution shows that 68% of the population falls within 2130 years and this proves that digital entrepreneurship is a youthful venture. Background education showed that 74% of the respondents had tertiary education level, 26% secondary or technical. In occupation, 58 percent were digital entrepreneurs, 27 percent students and 15 percent unemployed but enrolled in skills training.

The results of this study are an indication of a young, educated, and digitally active generation, which supports the idea that the target group has the potential and willingness to utilize the digital opportunities and avoid the threats of the cyber-related risks.

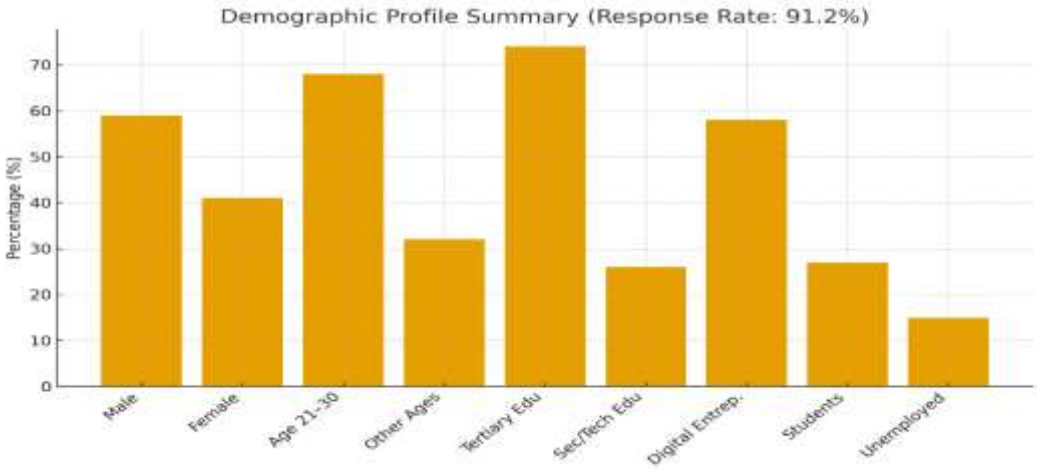

Figure 2: Response and Demographic Data

Objective 1: Investigate the Digital Entrepreneurship and Youth Empowerment Relationship

The results indicate that there is a high positive relationship between digital entrepreneurship engagement and youth empowerment indicators (self-confidence, income generation, innovation, and leadership). The respondents concurred that online business engagement improves problem solving skills, decision making and social awareness.

Mean = 4.21, SD = 0.73; r = .61, p < .001.

This means that digital entrepreneurship plays a big role in the empowerment of the youth since they are provided with financial freedom and independence in skills. Nigerian youths develop and integrate socially through the involvement of entrepreneurs as noted by Okegbe (2025). The outcome is also correlated with the study by Apeh et al. (2023), who stated that economic resilience and self-efficacy are developed during digital entrepreneurship programs. In line with the Social Cognitive Theory developed by Bandura (1986), empowerment is achieved when people believe that they have control over the end product by being skilled and experienced, which strengthens positive behaviour and productivity.

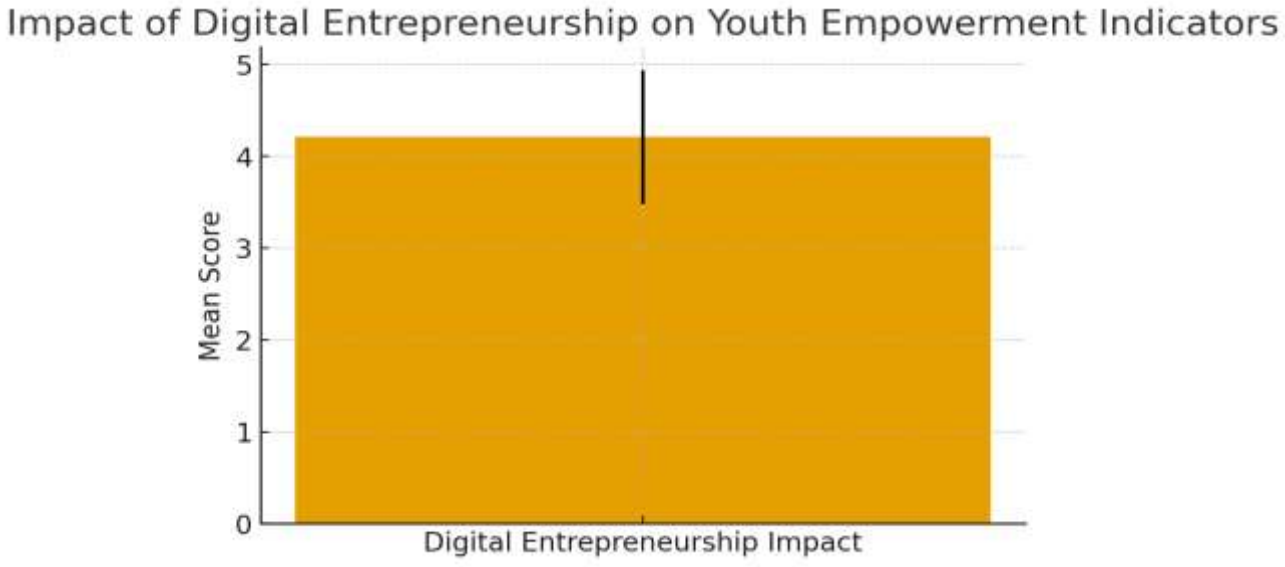

Figure 3: Impact of Digital Entreprneurship

Objective 2: Does Digital Entrepreneurship Engagement Decrease Youth Recidivism in Cybercrime?

As a result of analysis, it was identified that there is a strong negative correlation between involvement in digital entrepreneurship and participation in cybercrime-related tendencies. Mean = 3.98, SD = 0.81; $\beta = -0.42$, $t = -5.13$, $p < .001$. The implication of this is that cyber-risk behaviour can be mitigated by involving the youth in legitimate online business. Respondents said that, online entrepreneurship provided legal sources of income and minimized idle time that comes with online fraud. This is in line with the findings of UNDP (2023) that indicated that organized digital innovation initiatives promote inclusiveness and moral behavior. In the same manner, Orakpo (2025) pointed out that unemployment and digital illiteracy are some of the causes of youth cybercrime, which can be addressed by entrepreneurship via empowerment and moral reorientation. Therefore, to convert cyber-risk into cyber-opportunity, it is necessary to develop skills as well as engage in ethical mentoring.

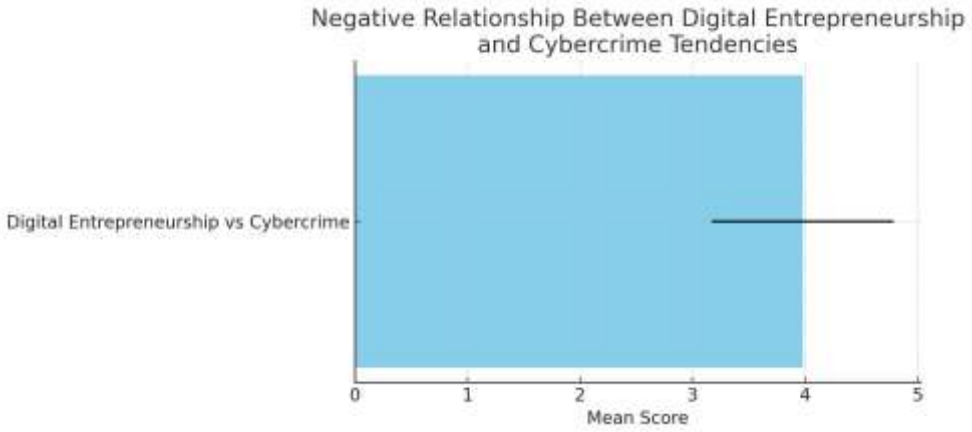

Figure 4: Relationship Between Digital Entrepreneurship and Cybercrime

Objective 3: Determine the Impact of Digital Entrepreneurship on Innovation and the Creation of Employment.

The regression analysis indicates that digital entrepreneurship has a positive impact on innovation and job creation which is strong. Mean = 4.34, SD = 0.69; $\beta = 0.56$, $t = 8.45$, $p < .001$. The respondents confirmed that digital entrepreneurship promotes creativity by creating freelancing, developing apps, e-commerce, and ICT-based consultancy. The outcome supports Apeh et al. (2023), who have discovered that online ventures drive creative thinking and provide self-employment opportunities. Furthermore, Medfouni, Mekarssi, and Djeffal (2024) observed that digital technologies can be flexible, which stimulates the development of new product designs and service delivery models. Simply put, digital entrepreneurship is not only an instrument of decreasing unemployment but also a driver of innovation-based economies - which is a key pillar of sustainable youth empowerment.

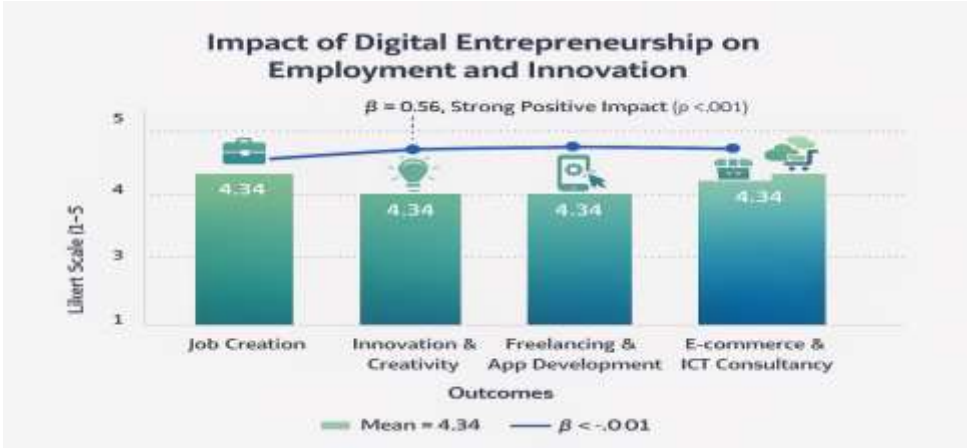

Figure 5: Digital Entrepreneurship and Employment

Objective 4: Learn about Obstacles and Enabling Conditions that affect Youth Engagement in Digital Entrepreneurship

The researchers discovered that the top priority issues are a lack of access to capital (76%), unstable internet access (64%), weak policy support (58%), and insufficient mentorship (55%). On the other hand, online training (71%), peer collaboration (62%), and social media market access (68%), were the enabling factors.

$\beta = 0.39$, $t = 4.72$, $p < .001$. These results can be also correlated with those of Medfouni et al. (2024), who highlighted that digital entrepreneurship is successful in the context of well-developed infrastructure and favorable policies. The findings indicate that although youths are excited, structural impediments like poor institutional structures and inadequate funding are impediments to development. Positively, peer learning and internet communities are being used as compensatory support mechanisms. Combining these barriers by means of public-private collaboration, grants, and mentorship can make the youth digital engagement and innovation even stronger.

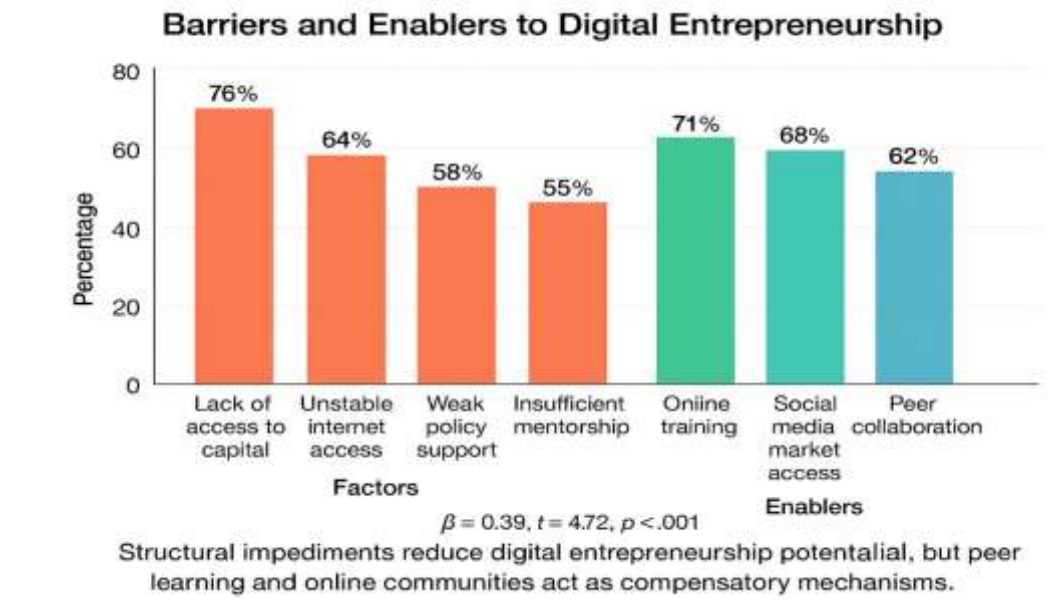

Figure 6: Enablers and Barriers

Hypotheses Testing Summary

Hypothesis	**Test Statistic**	**p-value**	**Decision**
H_1: There is a significant relationship between digital entrepreneurship and youth empowerment.	$r = .61$	$< .001$	Accepted
H_2: Participation in digital entrepreneurship significantly reduces youth involvement in cybercrime.	$\beta = –0.42$	$< .001$	Accepted
H_3: Digital entrepreneurship significantly influences innovation and employment creation among youth.	$\beta = 0.56$	$< .001$	Accepted
H_4: Challenges and enabling factors significantly influence youth participation in digital entrepreneurship.	$\beta = 0.39$	$< .001$	Accepted

The four hypotheses were all confirmed, which means that digital entrepreneurship has a complex impact on youth empowerment, increasing innovation, and decreasing the tendency towards cyber-risks. The results all

support the Social Cognitive Theory by Bandura (1986) because they indicate that exposure to digital skills and empowering environments reinforces self-efficacy and responsible online behavior.

CONCLUSION

The paper has discussed the way in which digital entrepreneurship can turn the cyber risks into youth empowerment, innovation, and ethical digital involvement opportunities. The results indicated that digital entrepreneurship has a strong positive impact on the youth empowerment through the advancement of self-efficacy, monetary self-sufficiency, and inventiveness. It also revealed that there is negative relationship between the role of entrepreneurship and the role of cyber-risk, which means that the young population with the legitimate digital skills and business opportunities is less prone to cybercrime.

Moreover, it was demonstrated that digital entrepreneurship has a positive impact on innovation and job-creating, which makes it a promising strategic instrument in terms of the need to provide solutions to the unemployment issue among young people and social unrest. Nevertheless, there are still ongoing obstacles that include the lack of access to capital, ineffective digital infrastructure, and insufficient policy backing that limit the growth. The results support once again the Social Cognitive Theory developed by Bandura, (1986), which highlights that individual ability, environmental impact, and learning by observation are the factors that lead to behavioural change. In this way, via digital competence and supportive ecosystems, the youth can transition to cyber-risk behaviours by engaging in productive entrepreneurial activities.

Comprehensively, the paper finds that digital entrepreneurship is a positive force that facilitates empowerment and a preventative tool against cybercrime, thereby encouraging innovation and economic inclusion in the dynamic digital economy in Nigeria.

RECOMMENDATIONS

1. Enhance Online Capacity Building

To improve employability and ethical knowledge the government, tertiary institutions and even the privates should incorporate structured digital entrepreneurship training in skills acquisition and academic curriculum.

2. Improve Financing and Policy Subsidy

Incentive innovation Digital innovation funds, youth grants and tax incentives will be designed to promote the growth and sustainability of start-ups among young entrepreneurs.

3. Enhance Online Systems

Broadband connectivity and affordable access to the internet should be increased to facility te digital business operations especially in underserved areas.

4. Encourage Mentorship and Ethical Orientation:

Mentors should be experienced digital entrepreneurs and ICT professionals who would take the youth through responsible online behavior and professional development.

5 Foster Public–Private Partnership
Collaboration between government agencies, educational institutions, and tech firms can expand opportunities for innovation hubs, incubation centers, and youth empowerment schemes.

6 Institutionalize Cyber-Ethics Education
Integrating cyber-ethics into entrepreneurship curricula will reinforce moral responsibility and reduce the appeal of cybercrime among tech-savvy youth.

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