

Opportunities and Skills needed for Effective Enterprising in Industrial and Consumer Electronics

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Abstract

The rate of unemployment in Nigeria calls for a drastic and effective approach and solution. The study sought to identify the opportunities and skills needed for effective entrepreneurship in industrial and consumer electronics. Two research questions and two hypotheses were formulated. A descriptive survey research design was adopted for the study. The study's sole instrument was a questionnaire. The population of the study was made up of 100: 28 electrical and electronic lecturers in tertiary institutions in Niger State, 8 electrical and electronic workshop personnel, and 64 electronics technicians in Niger State. All the lecturers and workshop personnel were used while propulsive sampling techniques were used to select the 64 electronics technicians in Niger State. Mean and standard deviation were used to answer the research questions, while ANOVA was used to analyze the hypotheses to determine whether they were significant at the (P .05) level. The findings that emerged, among others, are that there are a lot of entrepreneurship opportunities available in industrial and consumer electronics, and there are a lot of skills needed by industrial and consumer electronics entrepreneurs. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in industrial and consumer electronics in Niger State. The following recommendations were made, among others: There should be more awareness of the entrepreneurial opportunities in industrial and consumer electronics, and there should be training and retraining for those who wish to be involved in electronics entrepreneurship.

Key words: Industrial and consumers electronics, skills needed, effective enterprising and opportunities.

1. Introduction

Since the year 2004, the rate of insurgencies in Nigeria has increased tremendously, such as Boko Haram, Fulani headsmen, kidnapers, and many more, which has been attributed to

unemployment in the country. The major group of people found in such acts are youths with energy and capacity to develop themselves who turn to terrorism in the name of earning a living.

The rate at which everyone is looking for or searching for white collar jobs is increasing day-by-

day, while the Nigerian President announces that every place is fielded up by both the Federal, State, and Local governments, stressing further that there is no job anywhere no matter how qualified you are (Stephen, 2022).

Nigeria's unemployment rate in 2020 and 2021, according to Doris (2022) and the National Bureau of Statistics (2021), was 33.3% and 32.5%, respectively. The rate of unemployment in a country has significant negative effects on the youth and the country's economy. Youth unemployment in Nigeria has caused some of them to engage in a variety of illegal activities, including prostitution, thuggery, hooliganism, pickpocketing, drug addiction and selling, armed robbery, and even hired assassination, making them suitable to be used as offensive tools by politicians (Adegbami & Adewole, 2013). Some youths are unemployed today because they cannot have access to white collar jobs or are not employable because they lack the necessary and required skills. While some are not aware of the opportunities around them.

The high rate of unemployment among youth and graduates has long been a source of concern for the Nigerian government. It will be false information to claim that the government has never tried to reduce unemployment in Nigeria at any level. Other commitments of the Nigerian government under the Global Initiative, launched in 2016, include the establishment of the National Directorate of Employment (NDE) and its skills acquisition program, the National Poverty Eradication Programme (NAPEP), the Subsidy Reinvestment and Empowerment Program (SURE-

P), Youth Enterprise with Innovation in Nigeria (YOUWIN), Npower in 2017, and the Nigerian

Youth Employment Action Plan (NIYEAP). In spite of all the measures, it is predicted that Nigeria's unemployment rate will rise to 32.5 percent in 2021. In 2022, this amount is expected to rise even further. According to historical data, the unemployment rate in Nigeria has been steadily rising over the last few years. The Nigerian methodology placed the unemployment rate at over 33% in the fourth quarter of 2020 (Varrella, 2021), but the NBS had it at 33.3% in the same period. In light of this, it seems that the Nigerian government's above-mentioned efforts are not having a substantial effect on lowering unemployment. There is a need for a better and more long-lasting solution to this unpleasant condition, and entrepreneurship, particularly in the industrial and consumer electronics.

Looking at what is happening around the globe in terms of technology development and the advent of digitalization in every sector of our economy, it is clear that every entrepreneur needs more than empowerment. Empowerment without the acquisition of the needed skills and knowledge is just a waste of resources. Entrepreneurship in electronics could assist youths in developing the mindset and skills required to be self-employed in industrial and consumer electronics.

Electronics can be defined as the branch of science and engineering that deals with the controlled flow of electrons through vacuum, gas, or semiconductors (Santosh, 2021). It is the study and use of devices that control the flow of electrons (or other charged particles). Therefore, electronic devices are designed to perform specific tasks

using electromagnetic force or power. These devices are found in every aspect of human activity. Electronic devices can be found in numerous household products, including such items as telephones, computers, and CD players.

Not only in household products but also in industries, companies, offices, and every other sector of life that is categorized as industrial and consumer electronics.

Consumer electronics are electronic devices that are used for day-to-day activities at homes and offices. Such electronic devices are: washing machines, air conditioners, telephones, mobile phones, calculators, refrigerators, scanners, microwaves, loudspeakers, personal computers, printers, projectors, headphones, and many more (Jibin, 2016). Industrial electronics are electronic devices that are used daily in industries to save time and cost, increase productivity, and increase efficiency. Examples of industrial electronics are artificial intelligence, machine learning, robotics, smart meters, the internet of things, computing, and many more. According to Jibin (2016), automatic control systems are becoming more prevalent in various industries on a daily basis, making it feasible to quickly control any kinds of materials, machinery, and gadgets with electronic circuits.

Electronics devices are found and ultimately useful in the following area: communication and entertainment, defense sector, instrumentation, medical electronics, industries, automobiles, consumer electronics (Jibin, 2016 & Tarun, 2014). In the communication and entertainment, every nation and individual especially in this 21st century depends greatly on communication. Its importance in defense cannot be overemphasized,

it has contributed greatly to defense in different ways such areas as Missiles, RADARS, warplane and communication setup. In modern warfare, communication is almost entirely electronic.

Medical lines are also going digital; there is no area of medicine where there is no electronic device that has been used for easy diagnostic, operating, and application of treatments. Electronic equipment is being extensively used in the medical field. Examples are electron microscopes, ECG, EEG, X-rays, defibrillators, oscilloscopes, MRI, CT scanners, glucometers, etc. (Jibin, 2016; Tarun, 2014). The increment of automated machines and robotics in industries calls for the application of electronic circuits for automatic control systems. Automatic door openers, lighting systems, power systems, safety devices, and many more are all operated by electronic circuits (Jibin, 2016).

Jibin (2016), William (2012) Thomas and James (2011) revealed that several pieces of electronic equipment are used in cars for charging batteries, enabling power-assisting functions, measuring gauges, and monitoring and controlling the engine's performance. Electronics are found to be useful in instrumentation; with the help of electronics, measuring instruments are designed and constructed to assist in carrying out accurate, reliable, and faster measurements (Jibin, 2016).

The above explanation of the areas of application of electronics is important for a better understanding of its importance in our daily lives and the entrepreneurial opportunities in industrial and consumer electronics. Therefore, it is evident that there are a lot of entrepreneurship

opportunities in the electronics field, ranging from designing, construction, servicing, troubleshooting sales, and others, that youths can venture into, which will make them self-employed and in turn reduce the rate of unemployment in Nigeria. The overmentioned opportunities can be learned both from formal and informal educational systems to give them the grace to become electronics entrepreneurs.

Entrepreneurship is the process through which a person identifies a need or difficulty in his surroundings and uses it as a springboard to produce goods and services that address the issue at hand while also making a profit. According to Okwori et al. (2021), entrepreneurship is the act of organizing, coming up with, assessing, and seizing opportunities to generate goods and services with the intention of turning a profit. The capacity of an individual to put ideas into practice is referred to as entrepreneurship. The challenges of planning, organizing, and managing resources in relation to a commercial initiative show out clearly in all of the definitions of the idea of entrepreneurship. Although entrepreneurship was initially primarily associated with business, it has since expanded to encompass manufacturing, distribution, transportation, and actually the majority of activities related to goods, services, and procedures (Osuala, 2004).

As an entrepreneur, your aim should not only be to make money all the time but also to create a solution to a problem. Whenever the major focus is all about making money, the entrepreneur may not last in that business. Therefore, it is necessary to first find a problem and learn how to solve it and improve on it; that would make you a great entrepreneur. Therefore, it is evident that there are many skills that must be learned and mastered,

including theoretical skills, practical skills, and soft skills, which are referred to as entrepreneur competency, for any youth to succeed as an entrepreneur in the industrial and consumer electronics industries. According to UNESCO-UNEVOC (2019), entrepreneurial competences are a combination of knowledge, skills, and attitudes that include self-assurance, networking, risk understanding, teamwork, creativity, a sense of initiative, problem-solving, the ability to marshal

resources, and financial and technological knowledge as cited by Okwori et al., 2021). Instead of waiting for a white-collar job that may come or may not come, it is necessary to learn an entrepreneurial skill that will enable one to be self-employed in entrepreneurial career opportunities in industrial and consumer electronics trades.

With the recent and rapid development and changes in technology and the increasing number of digitalized devices and services, more entrepreneurship opportunities have opened in electronic. What is/are the best ways to keep the youth responsive to economic and societal changes and reduce the unemployment rate in Nigeria is by looking into the opportunities and skills needed for effective enterprising in industrials and consumer electronics. All that is required to become a successful entrepreneur in electronics is to be well-versed in the technical know-how of modern devices that are in great demand. Greater opportunities for job creation, economic expansion, and productivity are provided by electronics, be they industrial or consumer.

2. Statement of the Research Problem

The issue of unemployment in Nigeria needs a serious, comprehensive, brave, and determined

approach. The rates of unemployment in Nigeria are increasing year-by-year, and it appears as if the measures the Nigerian government has put in place are not capable of solving the problem. This is due to a constant rise in youth unemployment rates, as measured by the National Bureau of Statistics, between 2010 and 2020.

By 2045, the number of young people in Africa between the ages of 15 and 24 is predicted to double from 200 million to 400 million, according to Judith Rodin, President of the Rockefeller

Foundation (Luke, 2015). Given that the private sector prioritizes the development of new employment opportunities, it is predicted that 200 million young people will join the formal workforce. Furthermore, it was stated that only 3-5 million jobs will be created annually for the 10-12 million young people who are eligible to work in the formal economy, leaving roughly half of these young people with little hope of finding employment. The question now is, "What happens to the other half? Roaming around the street or engaged in underemployment or illicit activities.

But this should not be a reason for youths to remain unemployed when there are a lot of opportunities for entrepreneurship in different fields. With the advancement of technology, advertisement digitalization and communication, and changing demand in the workforce, there is a call for new and more reliable electronics devices and smart ways of doing things, creating more and more entrepreneurship opportunities. As revealed by researchers, career opportunities, establishment of small-scale enterprises, production, and creative and innovative entrepreneurship opportunities are available in different fields that youths can take up and

become employed individuals (Ogbu 2012 and Niir Project Consultancy Service (NPCS) 2015). To be an entrepreneur goes beyond designing products, servicing them, identifying opportunities, and conducting market research. Bryan and Colin (2002) maintained that entrepreneurs should exhibit identifiable characters and skills to make them outstanding in their day-to-day activities. He stressed that an entrepreneur should exhibit the following characteristics and skills: creativity and innovation; opportunity recognition and evaluation; motivation to excel; determination; and a strong sense of self-leadership.

Given the scenario above, the situation in industrial and consumer electronics might not be different. It is clear from the evidence that there are a lot of untapped employment opportunities in industrial and consumer electronics. Which may be as a result of the youths' unawareness of these opportunities or because they do not possess the right skills needed to venture into them. Hence the need for the study to assess the opportunities and skills needed for effective entrepreneurship in industrial and consumer electronics.

3. Research Questions

Each of the research questions below was addressed in the study, and a 0.05 level of significance was used to evaluate the null hypothesis that followed.

1. What are the entrepreneurial opportunities in industrial and consumer electronics in Niger State?
2. What are the skills needed by entrepreneurship in industrial and consumer electronics in Niger State?

4. Hypotheses

Ho1. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians with respect to their perceptions of the entrepreneurship opportunities in industrial and consumer electronics in Niger State.

Ho2. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians with respect to their perceptions of the skills needed by entrepreneurship in industrial and consumer electronics in Niger State.

4.0 Methodology

A survey research design is considered suitable for this study to collect data from the targeted population. Based on information gathered from a sample of electrical and electronic lecturers, electrical workshop personnel, and electronics technicians in Niger State regarding the opportunities and skills required for successful entrepreneurship in industrial and consumer electronics, the researchers can use this design to describe the attitudes, opinions, behaviours, or characteristics of the population. The study was carried out in Niger State, Nigeria.

The population of the study was made up of 100: 28 electrical and electronic lecturers in tertiary institutions in Niger State, 8 electrical and electronic workshop personnel, and 64 electronics technicians in Niger State. All the lecturers and workshop personnel were used while propulsive sampling techniques were used to select the 64 electronics technicians with NCE, ND, HND, or B.Eng/B.Tech in electrical/electronics in Niger State. A structured questionnaire is the instrument

used to collect data. The questionnaire was developed to collect data for the study's research questions. A 100% return rate on all of the questionnaires that were distributed. The research question and hypothesis served as the framework for organizing and analyzing the data that was gathered for the study. The analysis uses SPSS version 23. Based on the resulting mean score, which was interpreted in relation to the idea of actual lower and upper limits of numbers, as indicated in Table 1, decisions on the study were made. The standard deviation was used to determine if the responses of the respondents were near to the mean or not. Any item with a standard deviation of 1.96 or less indicated that the respondents' responses were not excessively out

of the norm or dissimilar from one another, and any item with a standard deviation of 1.96 or more indicated that the respondents' responses were excessively out of the norm. The possibilities and skills required for effective entrepreneurship in industrial and consumer electronics were examined using ANOVER to identify the no significant (P .05) level of significance. The instruments for data collection were administered to the respondents by the researchers.

Table 1: Interpretation of Four Point Scale

S/N	Scale of R.Q 1	Scale of R.Q 2	Point
1	Highly Agreed	Highly Needed	3.50 – 4.00
2	Agreed	Needed	2.50 – 3.49
3	Slightly Agreed	Slightly Needed	1.50 – 2.49
4	Disagreed	Not Needed	0.50 – 1.49

Key: R.Q = Research Question

Research Question 1: What are the entrepreneurial opportunities in industrial and consumer electronics in Niger State?

Table 2. The mean response of the electrical and electronic lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in electronic

S/N	ITEMS	Mean	SD	Decision
	Entrepreneurial Career Opportunities in Industrial and Consumers Electronics			
1	Industrial electronics technician	3.04	1.03	A
2	Consumer electronics technician	3.40	0.81	A
3	Cable television technician	3.10	0.96	A
4	Communication electronics technician	3.66	0.77	HA
5	Computer repairs technician	2.80	0.99	A
6	Medical Electronics Technician	3.04	0.88	A
7	Office Equipment Technician	2.70	0.91	A
	Opportunities to establish small scale enterprises in industrial and consumers electronics			
8	Establishment of small and medium scale sells of electronics components	3.12	0.87	A
9	Establishment of an enterprise for the sale of computers	3.36	0.85	A
10	Establishment of an enterprise for the sales of general electronics goods and services	3.58	0.73	HA
11	Establishment of an enterprise for the sales of different kinds of measuring instruments	2.70	1.11	A
12	Establishment of an enterprise for the sales of electric doors and installation of security devices.	2.84	1.06	A
13	Providing electronics training	3.46	0.79	A
14	Servicing and repair of electronics	3.10	1.05	A
15	E-Waste Recycling	3.60	0.93	HA
	Industrial and consumers electronics production, creative and innovative entrepreneurship opportunities			
16	Construction of adaptor and chargers	2.80	1.18	A
17	Production of different types and size of transformers	2.60	1.21	A
18	Production of measuring instrument	3.36	0.89	A
19	Construction of voltage regulator and inverters	3.60	0.67	HA
20	Production of wall clocks	3.10	0.95	A
21	Production of security devices	3.72	0.64	HA
22	Industrial Automation	2.80	0.99	A
23	Electrical Panel Manufacturing	3.30	1.01	A
24	Inverter Production	3.80	0.61	HA
25	Printed Circuit Board Production	3.18	0.95	A
	Grand Mean	3.19		A

Key: HA=Highly Agree, A = Agree, and SD = Standard Deviation

Table 2 shows that respondents highly agreed with items 7, 10, 15, 19, 21, and 24, with mean values ranging between 3.58 and 3.80. Items 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 16, 17, 18, 20, 22, 23, and 25 with mean values from 2.70 to 3.46 signified that the respondents moderately agreed with the questions raised on the items. The fact that the respondents' standard deviation on the entrepreneurial opportunities in industrial and consumer electronics is less than 1.96 suggests that the respondents' responses did not deviate too much from the mean or from one another.

Research Question 2: What are the skills needed by entrepreneurship in industrial and consumer electronics in Niger State?

Table 3. Means of the electrical and electronic lecturers, workshop personnel, and electronics technicians on the skills needed by electronics entrepreneurship.

Key: HN =Highly Needed, N = Needed and SD = Standard Deviation

Table 3 shows that respondents agreed with items 1, 2, 4, 5, 6, 9, 12, 13, 18, 21, and 22 as highly needed, with mean values ranging between 3.50 and 3.90. While items 3, 7, 8, 10, 11, 14, 15, 16, 17, 19, and 20 were moderately needed, the mean values ranging from 2.80 to 3.44 indicated that the respondents agreed with the questions raised on the items. The fact that the respondents' standard deviation on the skills needed by entrepreneurship in industrial and consumer electronics is less than 1.96 suggests that the respondents' responses did not deviate too much from the mean or from one another.

5. Hypothesis 1

Ho1. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in industrial and consumer electronics in Niger State.

Table 4. ANOVA analysis of the mean response of lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in industrial and consumer electronics in Niger State.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.578	3	1.193	2.470	.081
Within Groups	843.040	1746	.483		
Total	846.618	1749			

Table 4 revealed that the F-calculated values for mean scores of lecturers, workshop personnel, and electronics technicians on the

S/N	Items	M	SD	Decision
1	Critical thinking skill	3.90	0.36	HN
2	Effective Communication skill	3.66	0.77	HN
3	Collaboration skill	2.80	1.18	N
4	Creativity skill	3.76	0.52	HN
5	Innovative skill	3.76	0.62	HN
6	ICT skill	3.94	0.31	HN
7	Ability to recognize opportunities	2.90	1.05	N
8	Ability to recognize and take reasonable risk	3.40	0.93	N
9	Proactive skill	3.76	0.72	HN
10	Team work	3.10	1.15	N
11	Positive mind set	3.34	0.92	N
12	Continue learning skill	3.72	0.54	HN
13	Perseverance	3.50	0.68	HN
14	Market analysis skill	3.30	0.91	N
15	Ability to articulate your purpose	3.40	0.81	N
16	IoT (Internet of Thing)	2.90	1.05	N
17	Ability to understand the cultural believe of your area	3.20	1.09	N
18	Ability to accept responsibilities when you are wrong	3.90	0.31	HN
19	Ability to troubleshoot electronics circuit	3.30	1.02	N
20	Ability to repair electronic circuit	3.44	0.82	N
21	Ability to read electronics circuit	3.74	0.56	HN
22	Ability to construct electronics circuits	3.70	0.65	HN
	Grand Mean	3.47		N

entrepreneurship opportunities in industrial and consumer electronics in Niger State The result revealed that the F-calculated value for Group is 2.470 with a p-value of 0.081, which is greater than.05 sig. level. Therefore, the non-hypothesis is accepted because there is not enough evidence to reject the null hypothesis. With this result, there are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in industrial and consumer electronics in Niger State

Hypothesis 2.

Ho2. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the skills

needed by entrepreneurship in industrial and consumer electronics in Niger State.

entrepreneurship opportunities in industrial and consumer electronics in Niger State.

Table 5. ANOVA analysis of the mean response of lecturers, workshop personnel, and electronics technicians on the skills needed by entrepreneurship in industrial and consumer electronics in Niger State.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.286	2	1.143	2.067	.127
Within Groups	850.049	1537	.553		
Total	852.335	1539			

Table 5 revealed the F-calculated values for the mean scores of lecturers, workshop personnel, and electronics technicians on the skills needed by entrepreneurship in industrial and consumer electronics in Niger State. The result revealed that the F-calculated value for Group is 2.067 with a p-value of 0.127, which is greater than .05 sig. level. Therefore, the non-hypothesis is accepted because there is not enough evidence to reject the null hypothesis. With this result, there are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the skills needed by entrepreneurship in industrial and consumer electronics in Niger State.

6. Summary of the Findings

1. The listed entrepreneurship opportunities are available in industrial and consumer electronics.
2. The skills listed are all needed by industrial and consumer electronics entrepreneurs.
3. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the

4. There are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the skills needed by entrepreneurship in industrial and consumer electronics in Niger State.

7. Discussion of Findings

The finding on the first objective revealed that there are a lot of entrepreneurship opportunities in industrial and consumer electronics that everybody can venture into and become self-employed or be able to employ others. The best solution to the unemployment problem in Nigeria is through entrepreneurship, which allows every individual to become self-employed and gainfully employ others. This is in agreement with the study of Mari, et al. (2010), who maintained that the solution to unemployment is entrepreneurship. The entrepreneurial opportunities in industrial and consumer electronics that Nigerian citizens can keen into to reduce unemployment include: industrial electronics technician, communication electronics technician, consumer electronics technician, establishment of an enterprise for the sales of general electronics goods and services, e-waste recycling, printed circuit board production, inverter production, industrial automation, and many more. This study is in line with the study of Ogbu (2012), who identified entrepreneurship opportunities in electrical and electronic trades as the establishment of small and medium-scale sales of electronics components, the establishment of an enterprise for the sale of computers, the establishment of an enterprise for the sale of general electronics goods and services. The rate at which the electronics field is advancing in the production of electronic gadgets for both homes and industries, as well as entrepreneurial opportunities, this is in line with the study of

Platform for Accelerating the Circular Economy (PACE) (2021), It was discovered that technology have changed how we work and live. further emphasized that the estimated \$1 trillion worldwide market for consumer electronics today is expected to rise. Therefore, there is no end limit

to entrepreneurship opportunities in industrial and consumer electronics.

In the same vein, Table 4 revealed that there are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the entrepreneurship opportunities in industrial and consumer electronics in Niger State. The study is in agreement with the study of Ogbu (2012), who identified entrepreneurship opportunities in electrical and electronic trades as the establishment of small and medium-scale sales of electronics components, the establishment of an enterprise for the sale of computers, the establishment of an enterprise for the sale of general electronics goods and services. The finding also agreed with the study of Niir Project Consultancy Service (NPCS) (2015), which identified electrical control panels, electric energy meters, microwaves, capacitors, uninterruptible power supplies (UPS), electronic toys, inverters, electronic digital weighing machines, and multilayer printed circuit boards as business opportunities that can be done either by manufacturing or by sales.

The result in Table 3 revealed that the skills listed are all needed by industrial and consumer electronics entrepreneurs. It is revealed that the skills that are needed are necessary for every individual that wants to venture into any industrial or consumer electronics enterprise; this will allow him to choose the right entrepreneur and be able to compete with the world and stand the test of time. It is also revealed that both technical and soft skills are needed by industrial and consumer

electronic entrepreneurs to succeed in their endeavours. This is in line with the study of Yisa et al. (2021), who opined that the right skills for the right job a person possessed allowed them to effectively achieve their goal. In according to Adeoti's (2014) and Agada (2014) study, entrepreneurial skills are fundamental abilities required to establish, grow, finance, and thrive in a

business. An individual's ability to select the best electronics trade enterprises to improve their financial situation and increase their chances of success in business constitutes their entrepreneurial skill in industrial and consumer electronics. In support of this study. This definition is supported by the findings of this study. Individuals with entrepreneurial skills can capitalize on an idea and launch a business for social and economic development in addition to personal gain. Therefore, for any industrial or consumer electronics entrepreneur to be successful in their enterprise, all the needed technical and soft skills are needed to make them fully competent and expert technicians. Muhammed (2018), as supported, listed some of the skills an electrical or electronics engineer is expected to possess if he will be successful at work. These skills include a good knowledge of analog electronics, a foundational knowledge of programming languages, circuit optimization with cost-cutting expertise, troubleshooting skills, and many more. There is a need for upgrading and retraining to obtain the necessary and trending skills. This is supported by the YENA Roadmap (2017), which suggests that there is a need to improve training delivery through effective training methods that strengthen core employability skills. The result of the analysis showed that the respondents, to a very great extent, agreed that entrepreneurial skills are needed by industrial and consumer electronics entrepreneurs in Niger State.

It is revealed from Table 5 that there are no significant differences between the mean responses of lecturers, workshop personnel, and electronics technicians on the skills needed by entrepreneurship in industrial and consumer electronics in Niger State. This is in line with the study of Olabiyi (2015), who in his study opined that there is no significant difference in the opinions of male and female students regarding the influence of psychomotor skills required in the employability of woodwork students. Also, Daniel

et al. (2021) found that there is no significant difference between electrical engineering lecturers' and electrical engineers' average responses to the question of what skills industrial electricians in Kaduna need to manage electric motors effectively. The finding also agreed with the study of Alhassan et al. (2021), which revealed that science and technology students agreed that Nigerian youth need to have entrepreneurial skills in addition to the technical skills acquired in the course of their studies to ensure their employment. They stressed further that the skills most required to ensure youth employability are networking and negotiation skills. It is revealed that both soft and practical skills are needed by industrial and electronic consumers to prepare them to set up their own businesses and stand tall among their counterparts. This is in agreement with the study of Shehu et al. (2021), which revealed that possession of welding practical skills is highly important for gainful employment in both the public and private sectors of the economy. Stressed that the acquisition of practical skills is important before attempting to go into self-employment.

8. Conclusion

The study is based on the opportunities and skills needed for effective entrepreneurship in industrial and consumer electronics. It is clear from the result of the study that there are a lot of entrepreneurship opportunities in industrial and consumer electronics that individuals, both

children, youth, and adults, could venture into that will reduce the rate of unemployment in Nigeria and make them self-reliant. Findings of this study also revealed that no matter how lucrative industrial and consumer electronics entrepreneurship could be, there is a need for necessary and adequate skills to be acquired if and only if the electronics entrepreneur wishes to succeed, stand the test of time, and be ready for the future.

9. Recommendation

Based on the findings of the study, the following recommendations are made:

1. There should be more awareness of the entrepreneurial opportunities in industrial and
2. consumer electronics. In doing that, people will be aware that there are career opportunities in electronics, the establishment of small-scale enterprises in electronics and production, and creative and innovative entrepreneurship opportunities.
3. There should be training and retraining for those who wish to pursue electronics entrepreneurship.
4. There should be more work on the most needed skills for effective entrepreneurship in industrial and consumer electronics.

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