

Full Length Research Paper

An assessment of the choice and performance of women entrepreneurs in technological and non-technological enterprises in southwestern Nigeria

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The learning mechanisms and factors that influenced the choice and performance of women in technological and non-technological Micro and Small Scale Entrepreneurship (MSSE) in Southwestern Nigeria were studied. This was with a view to recommending policy measures that could enhance the participation and performance of women in technological businesses. Primary data were collected from 210 micro and small scale enterprises owned by women using structured questionnaire and the Raosoft sample size calculator based on the normal distribution statistical method. Secondary data were also used. Descriptive and inferential statistics were employed for data analysis. The study revealed that learning mechanisms such as television, trade fairs and community outreach programmes significantly influenced the choice of technological ventures. Factors such as educational background, prior training in venture, role model, socio-cultural factor, and age also influenced the choice of ventures. Furthermore, the performance of the businesses and respondents were significantly influenced by variables such as business premise status, retraining opportunities, systematic planning and monitoring among others. The study concluded that the greatest motivation for women in non-technological ventures was unemployment while for technological ventures was personal interest. Personal Entrepreneurial Characteristics enhanced the women's performance. Recommendations were made towards boosting the choice and performance of the women especially in technological ventures.

Key words: Women, entrepreneurs, technological, non-technological, businesses, performance.

INTRODUCTION

The phenomenon of business ownership in Nigeria dates back to pre and post-colonial era and involved commercial activities such as wholesale and retail trading of which women were predominant. There were also enterprises such as weaving, fishing, food processing, agricultural production, blacksmithing, goldsmithing, etc much more predominant with the men. Nigeria enjoyed a phenomenal economic growth during the oil boom period of 1973-1980, with per capita GDP rising from ₦25, 740 in 1971 to ₦128, 700 in 1980 (Yusuf and Schindehutte, 2000). In this period, despite the dramatic rise in oil revenues, misdirected government policies left the country's economy vulnerable. Public investment was often focus

on costly prestigious and inappropriate infrastructure projects with questionable rates of return. The government also failed to strengthen public finance and pursued expansionary financial policies which created significant inflationary pressures. Inward looking industrial policies also bred a noncompetitive manufacturing sector. The agricultural sector was completely neglected as the real effective exchange rate increased due to rising oil prices. The competitiveness of virtually all non-oil sectors of the economy was eroded.

With sustained economic decline, individuals as well as governments increasingly set up and encourage entrepreneurship to leverage and possibly eradicate the economic depression. As more Nigerians fail to get employment in the formal and informal sectors, the need to own a business became more attractive and competitive especially for women who do not have as much opportunity

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as their male counterparts. There were also associated problems such as difficulty in getting finance, legal requirements, technology, education and skill acquisition, trade unions activities amongst others. These constraints were exacerbated by survival possibility much of which literature (Dickson, 2003; Kanter, 2003; Sarasvathy and Menon, 2002; Engelbrecht et al., 1996; Loscocco et al., 1991; Mintzberg, 2006; Burnham, 2003; Micheal, 2004) attributed to depend on entrepreneurial motivation, individual ingenuity, and access to finance among others.

The Nigerian industrial sector is dominated by micro and small-scale enterprises, which constitute 65.5% of industrial establishments. Medium scale enterprises constitute 32% while large-scale enterprises make up only about 2.5% of the industrial establishments (UNIDO, 2001). In southwestern Nigeria, both formal and informal economic activities are common. Large numbers of women work in the informal sector but their contribution to value added is not included in national accounts (Soetan,

1995). There are a variety of constraints on women and the ability of women to upgrade their production continuously. These include poor access to market information, technology, finance; poor linkages with support services; and unfavorable policy and regulatory environment (De Groot, 2001). These constraints are aggravated by the need to compete in an aggressive business environment with rapid technological changes, globalization of production, trade and financial flows. Concerted efforts are needed to enable women to make better economic choices and to transform their businesses into competitive enterprises, generating income and employment through improved production.

As women increasingly start their own businesses, it is important to develop an understanding of the women business founders and what motivates them to start their businesses. Political and economic opportunities for women still remain limited. A number of women in career planning are discouraged from following their dreams because their career choice does not fit in with traditional gender roles. Men are discouraged from careers in nursing, social work, and teaching while women are discouraged from careers in technology, science, and security. Men who are interested in "feminine" jobs are teased about their sexuality and women who are interested in "male" jobs are questioned as to whether they have the brains or stamina to perform (Hansen, 2001)

Informal economic activities in Nigeria encompass a wide range of small-scale, largely self-employment activities. Most of them are traditional occupations and methods of production. Of particular interest to this study is the informal productive sub-sector which encompasses all economic activities involving the production of tangible goods. They include agricultural production, mining and quarrying (excluding petroleum), small-scale manufacturing, building and construction, food production, woodwork, furniture making, garment making, welding and iron

works,amongo thers (Ekpo and Umoh, 2000). These categories are classed 'technological entrepreneurs'.

Non-Technological entrepreneurship has among its grouping, the informal retail and service sub-sector. Like other entrepreneurs these category of entrepreneurs appear to have an entrepreneurial social background; their parents more often are also entrepreneurs. But different from other entrepreneurs they start on their own and do not take over their parents companies (Engelbrecht et al., 1996). In Nigeria this sub-sector includes education services, health services, counseling services, retail trade, transport, restaurant, hospitality, financial outfits and household or other personal services (Soetan, 1995). Activities in this sub-sector in Nigeria contribute substantially to the general growth of the economy and personal or household income (Central Bank of Nigeria, 2004).

Problem statement

The characteristics of women who start high-growth companies in technological industries are not established in literature. More women run non-technological than technological businesses. Hence research is needed to examine the factors that contribute to the performance of each group as well as those peculiar characteristics that promote the choice and successful practice of technological entrepreneurship by women in southwestern Nigeria. Some important questions that are pertinent to this research work are as follows: What are the factors responsible for the choice of women to practice technological or non-technological entrepreneurship? What are the sources of information available to technological and non technological entrepreneurs prior to starting their businesses and how adequate are they? Are measures for performance or success the same for women in technological and non-technological businesses? Thus this study attempts to provide answers to the questions by comparing women entrepreneurs in technological and non-technological industries in southwestern Nigeria with a view to identifying factors that would enhance performance and encourage more women into owning technological businesses.

Literature review

Entrepreneurship is a multidimensional phenomenon that cuts across disciplines. There is no universal theory of the phenomenon. The existing theories of entrepreneurship are propounded from a variety of schools of thought, with many authors emphasizing different variables to explain it. Among these variables are culture (Gadgil, 1954; Jenkins, 1984; Shapero, 1984); personality (McClland, 1961; Brockhouse and Horwitz, 1986; Sexton and Upton, 1990), marginality (Geertz, 1963; Shapero and Sokol, 1982; Brenner, 1987), and intentionality (Learned, 1992; Katz and Gartner, 1988).

The explanations provided by these different theoretical approaches gave insight to some entrepreneurial behavior. Entrepreneurship is basically the exploitation of a business idea through owning a private business. REEE (2001) defined entrepreneurship as the discovery, evaluation and exploitation of opportunities.

Dorf and Byers (2005) defined technological entrepreneurship as a style of business leadership that involves identifying high-potential, technology-intensive commercial opportunities, gathering resources such as talent and capital, and managing rapid growth and significant risk using principled decision-making skills. Shane and Venkataraman (2003) defined technological entrepreneurship as the process by which entrepreneurs assemble organizational resources and technical systems, and the strategies by entrepreneurial firms to pursue opportunities. Technological entrepreneurship is needed to make full use of the knowledge of science and technology currently available and to meet market needs, thereby making the country in question more productive and more competitive internationally. It involves a process of industrial innovation and technology transfer in the country. Technological entrepreneurship is initiated and culminated in design, development, production, engineering and commercialization of innovative new products and processes. The challenge is to increase the frequency and pace of innovation in all sectors of the country's economy. Professional engineers due to their education, training, and work experience are well positioned to practice technological entrepreneurship. A review of literature (Witt and Zellner, 2005) reveal that the scientifically trained personnel is in a better position to transfer innovative researches to commercial production.

Women entrepreneurship is developing in the Organization for Economic Co-operation and Development (OECD) member countries and around the world. In some countries, women-owned businesses are increasing at a very rapid pace in terms of both numbers and turnover. Women entrepreneurs constitute a growing share of SME owners, with higher than average start-up rates in several OECD member and non-member countries and economies. In an era of global economic integration, this significant economic and social development is of growing interest to policy makers worldwide (Weeks, 2002)

Researchers addressed issues surrounding female entrepreneurs in specific country contexts. Erwee (1986) cited archived data to assert that entrepreneurship amongst black South African women is on the rise. In a study conducted by Siu et al. (1994), female entrepreneurs in Hong Kong were found to have personal problems associated with starting a venture that outranked financial difficulties. They concluded that the Chinese socio-cultural environment is problematic for aspiring female entrepreneurs. Two other papers highlighted differences in developing economies. Quddus (1993) reported on the phenomenal growth of the ready-made

garment export industry in Bangladesh, the only billion dollar manufacturing and export industry in the country and surveyed 36 entrepreneurs to probe the nature of this success story. Kolvereid and Obloj (1996) compared the attitudes of entrepreneurs from the United Kingdom, Norway, and Poland and discovered that Polish entrepreneurs functioning in a post-communist context do not perceive their environment to be any more hostile than do British entrepreneurs, but receive support services only from the private sector.

Women entrepreneurship in Nigeria is common in the informal sector and activities in this sector seem to be invisible, along with their contributions and needs. Despite government programs aimed at reaching small-scale entrepreneurs, women as a group are not considered for assistance. A major reason for this is that most of the enterprises women engage in, such as petty trading, dressmaking, hairdressing, food processing, and small-scale manufacturing, fall outside the Census of Production Surveys. These surveys normally include enterprises employing 10 or more people (Soetan, 1995).

Women have limited access to critical resources like education, land, technology, and credit. Hence, they are often excluded from employment in the formal sector. Theoretically, the informal sector provides employment for the groups excluded from employment in the formal sector. The notion of the informal sector captures certain peculiarities, such as informality of business organization, use of rudimentary technology, lack of separation of consumption and production, ease of entry and exit, reliance on family labour and apprentices, and small requirements for capital.

Since the last two decades, women have entered the field of entrepreneurship in greatly increasing numbers. The routes women followed to take leadership roles in business vary and most of them have overcome or worked to avoid obstacles and challenges in creating their businesses. The presence of women in the workplace in driving small and entrepreneurial organizations has had a tremendous impact on employment and on business environments worldwide (Gundry and Welsch, 2001). A significant trend in the US economy was the recognition of the growth of women-owned businesses, which was estimated to be 50% of all US businesses by year 2000 (Brush, 1992). Whether they are involved in small or medium-scale production activities or in the informal or formal sectors, their contribution to output and value added in the manufacturing sector is substantial, even though it remains partly invisible in official statistics. Women's entrepreneurial activities are not only a means for economic survival but also have positive social repercussions for the women themselves and their social environment (UNIDO, 2001). The growth of their business have also contributed to the global economy, and the economies of their immediate communities and countries (Gundry and Welsch, 2001).

The factors influencing the choice and performance of

business enterprises have been a well-researched area by scholars for many years. Previous research indicates several factors of influence. These include the entrepreneurs themselves, their professional background, their entrepreneurial capabilities and preferences, cultural and religious beliefs, as well as the technological and macro environment. In this study, these factors and others that are more relevant to the Nigerian context were collated and surveyed both in the informal sector of service and manufacturing enterprises. Basically two questions prompted this study: firstly, what factors are responsible for the choice of either service or manufacturing ventures by women? And secondly, what factors influence the performance of women in service and manufacturing in the micro and small-scale enterprises of the Nigerian economy?

These questions suggest that separate factors influence the choice and performance of women in service and manufacturing businesses. Some of the theories found in the literature that are related to choice and performance in businesses include demographic characteristics such as gender, age and marital status. For instance, Rasheed (2002) found that the above demographic factors have an impact on entrepreneurial intention and endeavour. Stevenson and Jarillo (1990) disclosed that successful entrepreneurs were relatively younger in age while Mazzarol et al. (1999) in their study showed that female were generally less likely to be founders of technological business than male. These factors were examined in the study to determine their effect on the choice and performance of women in technology and service-based businesses.

Similarly, another important factor influencing the choice and performance of women is human capital such as educational background and previous work experience. Human capital plays an important role with respect to entrepreneurial know-how as well as access to external resources (NEPAD, 2003). For instance, in their different research, Kourilsky (1980) and Bates (1986b) showed that educational attainment levels are positively associated with self-employment and new business formation while the probability of self-employment increases with education. Also, individuals with prior work experience in related business have significantly higher entrepreneurial intentions than those without such experience (Kourilsky, 1980). In Nigeria and in some other parts of the world, some entrepreneurs pull out from businesses where they have previously worked as staff to start their own businesses. However, in some of these cases, the entrepreneur lacks the needed educational background, skill and professionalism as well as managerial experience to manage the business. This has resulted into a short life span of many businesses.

Previous research also indicates that individuals who were entrepreneurs at some point in time succeed more often in starting another business due largely to existing networks or their ability to recognize business oppor-

tunities (Alsos and Kolvereid, 1998; Westhead et al., 2005). In the same vein, other research indicates that unemployment (not necessarily a lack of professional experience and self-confidence) plays a major role with respect to business success (NEPAD, 2003).

In terms of access to external resources, most women have limited access to funds to enable them start and expand their businesses (Brush, 1992; NEPAD, 2003; Rosa and Hamilton, 1996). For instance, studies in Germany show that female entrepreneurs start with less capital and their enterprises stay smaller in terms of employment and turnover compared to businesses led by male entrepreneurs (Welter, 2001; Orhan and Scott, 2001). In most cases, they settle for businesses requiring small capital and little managerial experience. Banks are unable to grant them loans because of fear that they may not be able to pay back and usually the entrepreneurs lack collaterals that can be presented to the banks.

The external environment is another factor considered in literature as crucial and necessary for the success of an enterprise. Such environment includes family, friends, customers, business cartels and government support structures such as business development and incubation centers. Motivational factors into entrepreneurship such as family influence, personal decisions, intuition and many more determine extensively how well the entrepreneur performs in his chosen venture (Orhan and Scott, 2001).

In conclusion, venture choice and performance is influenced by a variety of personal, family, social and environmental factors and capabilities. Many of these factors are discussed in the empirical result.

METHODOLOGY

The study encountered a deficiency in statistics on the population of women in micro and small scale businesses in Nigeria. Thus, the recommendation of the sample size calculator software developed by Raosoft (2004) to use 20,000 as population size in such cases was adopted. The Raosoft calculator is based on the normal distribution statistical method given by

$$x = Z_{(c/100)}^2 r(100-r)$$

$$n = \frac{N x}{((N-1)E^2 + x)}$$

$$E = \text{Sqrt}[\frac{(N-n)x}{n(N-1)}]$$

where n is the sample size, E is the margin of error, N is the population size, r is the fraction of responses of interest, and $Z_{(c/100)}$ is the critical value for the confidence level c . The calculator further recommended a sample size of 210 women businesses with 5% margin of error, 90% confidence level, population size of 20,000 enterprises and a response distribution of 74%. A random sampling technique was used to select the firms.

The number of employees, capital invested and turn-over has been used to define the micro and small-scale enterprise sector. Based on the definition by the Central

Bank of Nigeria (2004), a micro enterprise has a total capital outlay of not more than ₦10 million, including working capital but excluding the cost of land and a labour size of up to 10 workers; while a small-scale enterprise has a total capital outlay of not more than ₦50 million, including working capital but excluding the cost of land or a labour size of 11-100 workers (Abereijo et al., 2007).

The sample consisted of technological and non-technological women businesses numbering 60, 30, 50, 40, 15 and 15 from Lagos, Ogun, Oyo, Ondo, Ekiti and Osun States respectively based on the rate and level of commercial activities in the different states. The technological-based industries owned by women covered in the study include food, beverage and tobacco production, water processing and packaging, mining and quarrying (excluding petroleum), building and construction, wood-work and furniture making, garment making, metal fabrication and iron works amongst others. On the other hand, education services, health services, counseling services, retail trade, transport, restaurant, financial outfits and household or other personal services owned by women was covered for non-technological ventures.

The study employed the use of structured questionnaire and interview schedule. The structured questionnaire and interview guide was developed based on critical and detailed consideration of the research questions. The instrument was pre-tested on six (6) food and beverage production firms, four (4) garment making firms, six (6) private-owned schools and four (4) hotels. It was then validated to ensure that it elicited information on sources of information for women entrepreneurs in technological and non-technological businesses, types of venture started and the factors that influenced their choices, motivation for business ownership and the business performance among others. Secondary data were collected from the publications of government and directories of trade associations. Descriptive and inferential statistics were employed for data analysis. Chi-square and spearman correlation were used to test the factors that influenced the choice and performance of the women entrepreneurs while the kruskal-wallis test was used to test the hypothesis that there was no significant difference in the factors responsible for the choice of technological or non-technological businesses by women entrepreneurs.

RESULTS AND DISCUSSIONS

Demographic and socio economic characteristics

Out of the 53 women in the sample (Table 1) who chose technological ventures, ten (18.9%) of them were between 20 - 29 years, twenty-two (41.5%) between 30-39 years, sixteen (30.2%) between 40-49 years while only five (9.4%) women were 50 years and above. On the other hand, out of the ninety-one women in non-technological ventures, twelve (13.2%) of them were between 20-29 years, twenty-six (28.6%) between 30-39 years, thirty-three (36.3%) between 40-49 years and twenty two (22%) 50 years and above. The mean age of the women entrepreneurs was 40 years. This result is not much different from the findings of OSSREA, (2005) which reported that women entrepreneurs established their business around the age of thirty-seven.

Furthermore, the marital status of the women in non-technological and technological businesses was married (78 and 75% respectively). In their various research, Reynolds (1999) and Fielden et al, (2000) cited in Adegbite et al. (2007) established that married men and women worked harder and performed better in managing a business because of the social, financial and psychological support than single, divorced or widowed individuals because of family responsibility and commitment.

In Table 1, forty-nine (54.6%) of the women read sciences, out of which forty-three (43.9%) started non-

technological businesses. Similarly, out of the thirty-one (42.3%) women who studied humanities, fourteen (25%) started technological businesses. This result shows that women, irrespective of their educational background, could establish and manage technological or non-technological businesses.

In the study, nineteen (34%) of the women in technological business were faced with the socio-cultural factor such as the stereotyping on the type of job women and men should engage in while nineteen (19%) of the women in non-technological ventures were faced with the socio-cultural obstacle. The fact that some of the women had socio-cultural challenge compliments the outcome of a previous study by the World Bank (1995), which showed that social conditions in some parts of Nigeria inhibit women not only from starting their own businesses but also on the type of business they can venture into. Traditionally in Nigeria, women are rarely found in occupations such as core engineering, mining and quarrying, oil rigging and so on. For instance in the study, women were not found in businesses such as mining and quarrying, metal fabrications, building and construction and metal fabrications. The result suggests that barrier such as socio-cultural norm as well as the physical nature of some technical jobs prevents women in Nigeria from engaging in some technological ventures.

In addition, majority (91%) of the women did not receive financial support from society or any financial institutions. This was in spite of request by most of the respondents for financial assistance from government agencies to enable them upgrade their businesses, modernize their operations and participate in the global economy. The request for financial support could also be as a result of the pre-venture economic situation of the women because some (21 and 32% respectively) of the women in non-technological and technological ventures had an unsatisfactory pre-venture economic situation. The result support a research published by the National Foundation for Women Business Owners (NFWBO, 1994), which showed that 22% of women entrepreneurs in their study reported that maintaining the growth and competitiveness of their firms without easy access to external finance was a significant challenge.

This suggests that access to finance represent one of the challenges to entrepreneurial success.

Out of the 94 women who claimed to have mentors that helped them in their business, 41(43.6%) of them were engaged in non-technological businesses while 53 (56.4%) of them chose technological ventures. The high percentage (61%) of women that had mentors revealed the importance of role model in the success of entrepreneurial ventures. In the same vein, of the 156 respondents in Table 1, one hundred and forty (89.7%) had prior training about their businesses. Out of these, eighty-six (61%) were from non-technological business organizations. In addition, about 96% of the women in technological business had prior training. This implies that training

Table 1. Demographic and socio-economic characteristics of respondents

(N = 100 and 56 respectively)		Type of Business	
		Non technological business %	Technological business %
Age of respondents	20 - 29years	13.2	18.9
	30 - 39years	28.6	41.5
	40 - 49years	36.3	30.2
	Above 50years	22.0	9.4
	Mean Age = 40	100.0	100.0
Educational background	None	1.0	5.4
	trade skill	34.7	46.4
	Engineering	3.1	12.5
	Sciences	43.9	10.7
	Humanities	17.3	25.0
	Total	100.0	100
Level of Education	no formal education	2.0	7.1
	informal education	3	-
	primary education	-	3.6
	secondary education	27.0	30.4
	tertiary education	68.0	8.9
	Total	100.0	100.0
Pre-venture Economic Situation	not satisfactory	21.0	32.1
	Average	73.0	57.1
	Satisfactory	6.0	10.7
	Total	100.0	100
Marital status	Single	15.0	23.2
	Separated	3.0	-
	Married	78.0	75.0
	Widowed	3.0	1.8
	Divorced	1.0	-
	Total	100.0	100.0
Age of children	None	23.5	26.8
	1-9	31.6	44.6
	10-20	36.7	23.2
	21 and above	8.2	5.4
	Total	100.0	100.0
Children occupation	Schooling	74.4	86.7
	not employed	10.5	6.7
	Employed	15.1	6.7
	Total	100.0	100.0
Prior Training in Venture	Prior training	61.4	38.6
	No Prior training	87.5	12.5
Role Model	No role model	25.4	74.6
	Role model	43.6	56.4

For all the respondents in the study, 38% had children between the ages of 1 and 9 years; about 30% had children whose age ranged between 10 and 20 years, and only 7% had children of 21years and above while 25% had no children. On the average, about 80% of the women had children still schooling. The responsibility of parenting could positively influence the women to work harder to be successful entrepreneurs.

is very important for the choice and success of technological ventures.

Learning mechanism for women entrepreneurs and its impact on their choice of enterprise

The study revealed that the women entrepreneurs had various means by which they learnt about the venture they eventually embarked upon (Table 2). Fifty six (36%) of the women had more than one learning mechanism.

Most (45.8%) of the women claimed self conceptualization as a learning mechanism; followed by intuition (15.6%) and friends (15.1%). Other means of learning used by the women entrepreneurs include newspapers (6.1%), business contacts (3.3%), individuals (2.8%), trade fairs (2.4%), television (1.9%), former employers (1.9%), internet (1.4%), community outreaches by government agencies (1.4%) and radio (0.9%). Out of about 46% of women that chose self conceptualization, 16% were in technological and 30% were in non techno-

Table 2. Learning mechanism for women in technological and non- technological businesses.

S/No.	Learning mechanism	Non-tech. businesses % (N =126)	Technological Businesses% (N =86)
1.	Self conceptualization	30.2	15.6
2.	Internet	0.5	0.9
3.	Radio	-	0.9
4.	Television	-	1.9
5.	Newspaper	2.8	3.3
6.	Intuition	9.9	5.7
7.	Friends	8.5	6.6
8.	Individuals	1.4	1.4
9.	Former employers	1.4	0.5
10.	Business contacts and associations	2.8	0.5
11.	Trade fair	0.5	1.9
12.	Community outreach programmes by government agency	-	1.4
13.	Others	1.4	-
	Total (%)	59.4	40.6

logical businesses. The study revealed that television as a learning mechanism was only significantly related to women that ventured into technological businesses. None of the women in non-technological ventures claimed to have learnt about their present venture via television. Four (about 2%) of the women who started ventures in technological enterprise were informed through trade fairs. On the other hand, only one (0.5%) of the respondents in non technological ventures was informed through it. In general, very few women (2.4%) had trade fair as their source of learning and it had impact only on the women who ventured into techno-logical business.

Furthermore, none of the women who chose non-technological ventures claimed to have learnt of their businesses through community outreach programme by government agencies. However, three (1.4%) of the women in technological ventures claimed that it impacted on their choice. Some of the outreach programmes include industrial extension, seminars and workshops.

A total of 27 (18%) of the respondents rated the learning mechanism available to them as highly adequate; about 72% of the respondents rated it as moderately adequate; while 10% rated it as not adequate. These ratings implies that the learning mechanism for women entrepreneurs in Southwestern Nigeria were moderately adequate.

Motivation for female non-technological or technological entrepreneurship

Figure 1 show that the source of business motivation for the majority (27%) of women in non-technological business was unemployment while business motivation for majority (22%) of women in technological ventures was personal interest. This is similar to the result from cross-

cultural studies that women from Eastern and Central European countries go into business ownership as a means of escaping unemployment (Lisowska, 1998; Gundry and Welsch, 2001).

Factors responsible for the choice of enterprise by women entrepreneurs

Table 3 presents the chi-square value, the non parametric correlations value, the degree of freedom (df) for the variables and the correlations significance. The study showed that of the 19 variable tested; only 8 were significantly influencing the choice of the women. Age significantly ($\chi^2=5.79$; $\rho<0.05$) correlated with the choice of technological or non technological business by the women. Other factors that significantly influence women's choice of technological or non technological ventures include; presence of role model/mentor ($\chi^2=5.17$; $\rho<0.05$); socio-cultural factor ($\chi^2=4.34$; $\rho<0.05$), with significance at 0.037, television ($\chi^2=7.33$; $\rho<0.05$), trade fair ($\chi^2=4.37$; $\rho<0.05$), community outreach programmes by government agencies ($\chi^2=5.46$; $\rho<0.05$), educational background ($\chi^2=22.08$; $\rho<0.05$), and prior training in the venture ($\chi^2=4.24$; $\rho<0.05$)

Factors influencing the performance of the women businesses

Twenty-six (26) different variables in the areas of demographics, specific business information, personal entrepreneurial characteristics (PEC) and business per-

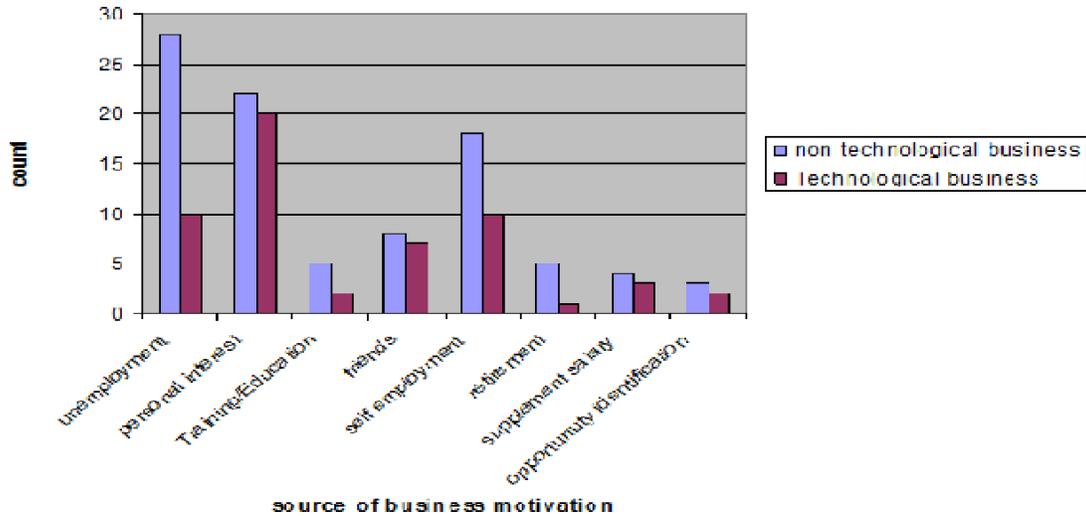


Figure 1. Motivation for the choice of non-technological or technological enterprise by women entrepreneurs.

Table 3. Factors responsible for the choice of enterprise by women entrepreneurs in southwestern Nigeria.

Variable	Chi-Square Value	Pearson, Phi and Cramer's V Value	df	Spearman correlation ()	Status
Business motivation	8.52	0.23	8	>0.05	Not significant
Information source_television	7.33	-0.22	1	<0.05	*significant
Information source_trade fair	4.37	0.17	1	<0.05	*significant
Information source_community	5.46	-0.19	1	<0.05	*significant
Outreach programme					
Educational background	22.08	0.38	4	<0.05	*significant
Level of Education	8.32	0.23	4	>0.05	Not significant
Role Model/Mentor	5.17	-0.18	1	<0.05	*significant
Social-cultural factor	4.34	-0.17	1	<0.05	*significant
Financial Support	1.33	-0.09	1	>0.05	Not significant
Pre-venture Economic Situation	4.16	0.16	2	>0.05	Not significant
Marital status	3.84	0.16	4	>0.05	Not significant
Age of children	4.26	0.17	3	>0.05	Not significant
Children occupation	2.76	0.15	2	>0.05	Not significant
Nature of Business	5.72	0.19	4	>0.05	Not significant
Parent's occupation	0.07	-0.02	1	>0.05	Not significant
Age of respondents	5.79	0.62	3	<0.05	*significant
Prior training in venture	4.24	0.17	1	<0.05	*significant
Starting capital	1.15	-0.09	1	>0.05	Not significant
Getting the business registered	0.68	-0.07	1	>0.05	Not significant
Securing a business premise	3.42	-0.15	1	>0.05	Not significant

*Significant on the 95% level.

formance were separately correlated, as shown in Table 4 with the amount of sales turnover per day. Knowing the sales turnover helped in evaluating the performance of the enterprise as well as the competence of the entrepreneur in managing the organizational resources (Adegbite et al., 2007). The study showed that of the 26 variables tested; only 6 significantly influenced the perfor-

mance of the business and respondents. The variables are business premise status ($\chi^2 = 17.25$; $\rho < 0.05$); business growth and expansion ($\chi^2 = 10.56$; $\rho < 0.05$); systematic planning and monitoring ($\chi^2 = 4.49$; $\rho < 0.05$); persistence ($\chi^2 = 1.92$; $\rho < 0.05$); family attention and responsibility

Table 4. Correlation analysis showing factors influencing the performance of women entrepreneurs

Factors	Chi square value	df	Spearman correlation ()	Status
Business Location	8.846	10	> 0.05	Not significant
Business premise status	17.25	8	< 0.05	*significant
Previous employment	1.800	2	> 0.05	Not significant
Venture information adequacy	.506	4	> 0.05	Not significant
Nature of Business	5.509	8	> 0.05	Not significant
Commencement of business	34.709	36	> 0.05	Not significant
Business growth and expansion	10.555	4	< 0.05	*significant
Persuasion and networking	3.298	4	> 0.05	Not significant
Information seeking	2.947	4	> 0.05	Not significant
Goal setting	2.508	4	> 0.05	Not significant
Systematic planning and monitoring	4.490	2	< 0.05	*significant
Commitment to work contract	1.652	2	> 0.05	Not significant
Risk taking	3.294	4	> 0.05	Not significant
Demand for efficiency and quality	1.142	4	> 0.05	Not significant
Persistence	1.915	4	< 0.05	*significant
Opportunity and initiative	1.211	2	> 0.05	Not significant
Independence and self confidence	0.663	2	> 0.05	Not significant
Family participation in business	2.276	4	> 0.05	Not significant
Family attention and responsibility	10.724	4	< 0.05	*significant
Job satisfaction	4.743	4	> 0.05	Not significant
Type of production system	2.939	4	> 0.05	Not significant
Technological change and responsiveness	2.671	4	> 0.05	Not significant
Re-training opportunities	2.541	4	< 0.05	*significant
Relationship with external customers	5.181	4	> 0.05	Not significant
Level of advertising/promotional activities	5.477	4	> 0.05	Not significant
Introduction of new quality products, process or service	3.912	2	> 0.05	Not significant

* Significant on the 95% level.

($\chi^2 = 10.72$; $\rho < 0.05$); and retraining opportunities ($\chi^2 = 2.54$; $\rho < 0.05$). This finding supports previous research OSSREA, (2005) from the United States and Europe on women entrepreneurs, which established that performance was related to previous experience, business skills and achievement motivation.

Testing of hypothesis

The study hypothesized that there was no significant difference between the factors influencing the performance of the women entrepreneurs in technological and non technological ventures. The Kruskal Wallis (Alternative to one-way analysis of variance –ANOVA) test of variance for non-parametric data was used for the hypothesis testing. The factors were tested separately on technological and then non technological businesses. The factors that significantly influenced the performance

of the women in technological venture were found to be the same for non-technological ventures. Thus the null hypothesis was accepted.

Summary and Conclusions

The research assessed the choice and performance of women in technological and non-technological Micro and Small Scale Enterprises (MSSEs) in Southwestern Nigeria. Firstly, the research sheds light on the learning mechanism that influences the choice of non-technological or technological ventures by the women. The learning mechanism of the entrepreneurs was found to include self conceptualization, friends, business contacts and associations, internet, radio among others. However access to relevant programmes on television, attendance at trade fairs and community outreach programme organized by government agencies such as extension services, seminar and workshops significantly impacted on the choice of technological ventures by the women.

Secondly, the study showed unemployment as a major motivation for starting non-technological business ownership and personal interest for technological business startups. This result was found to be similar to that obtained from the cross cultural studies of women in Eastern and Central European Countries showing that women go into business as a means of escaping unemployment (Lisowska, 1998; Gundry and Welsch, 2001). However, this study has shown that while unemployment could be a major motivation for non-technological businesses, the same cannot be said for technological businesses. Women entrepreneurs are inspired into starting technological businesses more on the basis of personal interest than unemployment.

Thirdly, many of the entrepreneurs requested for financial assistance from government to enable their business develop into significant economic contributors and participate in the global economy.

Fourthly, the study investigated some theoretical factors that were responsible for the choice of technological and non technological ventures by the women entrepreneurs. A total of 19 variables were examined with only 8 significantly determining the choice of the women which include; age, role model/mentor, educational background, socio-cultural factor, source of information such as television, trade fairs, and community outreach programmes and last but not the least; previous experience. While age, role model, educational background, socio-cultural factors and previous experience were determinants of the choice of either technological or non-technological ventures, the three learning mechanism (television, trade fairs and community outreach programmes) were more relevant to choosing a technological venture. This results therefore contributes to our understanding that women are prone to start their own businesses at an average age of 40; usually with a role model in the picture or background; having a good educational background (whether in the sciences, engineering or humanities has proved irrelevant); with some form of previous experience; and often restricted from venturing into some 'masculine' businesses due to socio-cultural norms, stereotyping and physical nature of some technological ventures. It therefore means that policies and resources can be directed to women who fall into this category to enhance the performance of their businesses.

Fifthly, the performance of the women was investigated. The result identified 6 out of the 27 variables as significantly influencing the performance of the women. These include; business premise status, business growth and expansion, systematic planning and monitoring, persistence, family love and responsibility and training opportunities. This finding supports previous research from the United States and Europe (OSSREA, 2005) on women entrepreneurs which established that performance was related to previous experience, business skills and achievement motivation. Furthermore, the Kruskal Wallis (alternative to one-way analysis of va-

riance –ANOVA) test of variance was used to test the hypothesis that there was no significant difference between the factors influencing the performance of the women entrepreneurs in technological and non technological ventures. The factors that significantly influenced the performance of the women in technological venture were found to be the same for non-technological ventures. The null hypothesis was accepted. This shows that the performance of women entrepreneurs (whether in technological or non-technological ventures) are greatly enhanced if they: have a rented, home-based or purchased business premise; are committed to business growth and expansion; are always systematically planning and monitoring the business; are always persisting in the business; are moderate in attending to family love and responsibility (that is, not being sentimental in business); and if they are often given to training opportunities.

Recommendations

Women and men may face different obstacles in the type of business they establish and manage. They need to be supported in different ways when setting up and developing their business. The outcome of the study shows that women were very few in technological based businesses and were not found in businesses such as mining and quarrying, building and construction, and metal fabrications. In addition, the women in retail and service businesses were about twice the women in manufacturing-based businesses. Therefore, there should be special effort and initiatives by the government to remove the socio-cultural bias about the type of business that women or men should engage through the promotion of self-employment and community-based enterprises of women in technological ventures.

In view that personal interest was a motivational factor in starting technological ventures, effective implementation of technological- based entrepreneurial education in schools would greatly enhance the startup and success of technological enterprises.

Government agencies supporting MSSEs should also undergo guidance and capacity building on how to create a level playing field for women engaged in small enterprises. In addition, government and NGOs should provide and facilitate access to credit for women entrepreneurs, as lack of credit is a major barrier to their innovative capability, performance and growth. Such credit assistance should be channeled through women's associations. However, no collateral should be required as the women association would guarantee the loans and monitor both repayments and use of credit. In administering the credit, a distinction should be made between the different categories of enterprises, such as technological and non-technological businesses, as well as the needs of particular categories of women entrepreneurs.

This finding suggests the need for Nigerian women to develop innovative skills and culture, network with go-

vernment agencies or vice versa and develop strategic alliance among them. This would in turn enhance competence in their respective specializations and build the global competitiveness of their firms.

Training opportunities was also identified as an important factor that influenced the performance of the women businesses and especially technological businesses. Government agencies such as Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) and the National Centre for Technology Management (NACETEM) should network with the National Association of Small and Medium Enterprises (NASME) to strategically meet the needs and demands of women in Micro and Small Scale Enterprises. Also, concrete assistance is needed from Non Governmental Organizations (NGOs) in the form of on-the-job training to familiarize the women entrepreneurs with new methods, machines, equipments, processes and management training. Policies and programmes should be directed at developing the Personal Entrepreneurial Characteristics (PEC) in women entrepreneurs; since PEC has been established as having the capability to enhance their performance in the study.

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