

Factor Analysis of the Constraints that Female Entrepreneurs Face in South East of Nigeria

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Abstract: The purpose of this study is twofold namely to investigate the constraints that female entrepreneurs in Akwa Ibom State of Nigeria face, and ascertain the institutional framework that enhance or hinder female entrepreneurship development. A positivist philosophy and a quantitative research design were instituted to determine the degree of the constraints to the development of female-owned SMEs. The instrument for data collection was a semi-structured questionnaire tested for reliability and administered to the participants. The primary data were analyzed using IBM SPSS version 25, which produced a set of descriptive and inferential statistics. Factor analyses show good reliabilities and internal consistencies (ranging from 0.60 to 0.80) for the instrument in relation to the sample. The findings indicate that female entrepreneurs are subjected to economic, administrative, legal, social, and structural constraints (varying in proportions) typical of women in other developing economies. These impact negatively on daily business operations. The study presents new insights into the constraints experienced by female-owned SMEs and therefore enhances the knowledge base for academics, financial institutions, governments and other stakeholders interested in the advancement of female entrepreneurship in this part of Nigeria.

Keywords: Entrepreneurship; small and medium-scale enterprises (SMEs); female entrepreneurs; Nigeria

JEL Classification: L26; L32; L53; C38

1. Introduction

In sub-Saharan Africa (SSA), literature (for instance Nxopo & Iwu, 2014; GEM 2012; Ekpenyong, 2015; Vossenberg, 2013; Mandipaka, 2015; Campos & Gassier, 2017) is awash with constraints faced by female entrepreneurs as they initiate and develop businesses. Most of these constraints are institutional, legal, administrative and uniquely common to developing economies. There are equally writers (such as

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Murrithi, 2017; Iwu et al, 2016; Kehinde et al., 2016; Mwarari & Ngugi, 2013) who have suggested ways of dealing with these constraints. The argument generally expounded, is that finding solutions to the constraints would lead to the enhancement of the entrepreneurial activities of female entrepreneurs.

Generally, sub-Saharan Africa women account for about 70 percent of the informal economy and 33 percent of small and medium scale enterprises (SMEs) in the formal sector. (The Guardian, 2017). Female entrepreneurship is responsible for about 50 percent of the GDP in most economies and thereby impacts the socio-economic development of nations through employment generation, poverty alleviation, wealth and human capital development (Ojo, 2006).

Unfortunately, female entrepreneurship is saddled with high risks, challenges and obstacles relative to their male counterpart, which significantly contributes to their underperformance (Campos & Gassier, 2017; Nxopo & Iwu, 2014; Etim & Iwu, 2018). The MIWE Report (2018) posits that female entrepreneurs “are driven by grit and determination” in developing economies solely on the basis of providing for their families, and hence act as “powerful engines of growth and development as well as financial inclusion” in Africa.

With the prospects of participation in formal wage employment lower for women than men (Hallward-Driemeier, 2011; Vossenberg, 2013) because of lower educational status and job experiences (relative to men), self-employment becomes a compelling option. Female-owned businesses (SMMEs) in Africa are growing more than other regions of the world according to the MasterCard Index of Women Entrepreneurship (MIWE, 2018, Campos & Gassier, 2017). Interesting though, cultural and traditional perceptions of female entrepreneurs in Africa are increasing positively according to MIWE (2018), with the notion that female entrepreneurship is an important driver of prosperity for a country (Gender-GEDI Report, 2013). However, global limitations on women’s access to education, non-financial inclusion, limited political and entrepreneurial participation, impede the drive towards enterprise ownership by women in developing countries. At the same-time, culture, gender bias, and stereotyping impact negatively on the ability of female entrepreneurs to grow and expand their businesses (Nxopo & Iwu, 2014).

1.1. Importance of Small and Medium-Scale Enterprises (SMEs)

Small and medium-scale enterprises can be viewed as independent ventures which have a certain number of employees; and are known to play a substantive role in the modernization of the economies of both developed and developing countries. The EU acknowledges that the number of personnel in employment for any SME should be 250 persons with annual turnover of EUR 50 million, or a balance sheet total of EUR 43 million (EU Commission, 2003).

SMEs account for 99 percent of all businesses in developing countries (Fjose, Grunfeld & Green, 2010); 52 percent of private labour force and 51 percent to the gross domestic product (GDP) of the United States (Longenecker et al., 2012). In the United Kingdom (UK), small and medium-scale enterprises provide 62 percent of total workforce and 25 percent of GDP (Burns, 2001; Day, 2004); while in China, SMEs provide 80 percent employment contributing 60 percent of GDP (Sham, 2014). In Italy, France and Germany, SMEs provide 70, 63, and 60 percent respectively of the total labour force (Burns, 2001).

A number of authors such as Billion *et al.*, (2009); Iwu, *et al.*, (2016); Berry *et al.*, (2002), have contextualized the relevance of SMEs to the economic growth and development of several countries. According to Oni and Daniyan (2012), Onwukwe and Ifeanacho (2011), Terungwa (2012), SMEs are the “engines of growth” for developing economies. In the views of Obiwuru, Oluwalaiye and Okwu (2011), SMEs acting as avenues for innovation and employment increase the rate of availability of goods and services bringing about better options for the citizens. This then leads to accelerated growth and increased economic wellbeing.

Industrial activities within SMEs include all forms of industrial development (Muriithi, 2017), ranging from mining, construction, manufacturing, service and hospitality industry to agriculture, fishing and handicrafts. Kamunge *et al.*, (2014) contend that most SMEs are in the service industry, where the level of employment is two-thirds of the total labour force. SMEs due to their importance generate inputs for larger conglomerates, as they integrate into the supply chain for complex and larger developed industries (Muriithi, 2017), as well as providing the platform for Africa’s development. Fjose *et al.*, (2010) opine that SMEs provide goods and services to customers by acting as the ‘engine for sustainable growth and economic development’ to African states.

Table 1. SMEs contribution to employment and GDP in some African Countries.

Countries	GDP contribution (%)	Employment contribution (%)	Source
Ethiopia	3.4 percent	90 percent	Central Statistics Agency (CSA) 2003; Gebrehiwol, 2006
Ghana	70 percent	49 percent	Ghana Bank Doing Business Report, 2013; World Bank; 2006; Abor & Quartery, 2010.
Kenya	40-50 percent	80 percent	Mwarari & Ngugi, 2013
Nigeria	50 percent	70 percent	Ariyo, 2011; Kolasinski, 2012.
Rwanda	20.5 percent	60 percent	Mukamuganga, 2011
South Africa	50-60 percent	60 percent	DTI, 2012; Willemse, 2010.
Tanzania	60 percent	20 percent	Echengreenh & Tong, 2005; Ngasongwa, 2002

Uganda	18 percent	90 percent	Uganda Ministry of Trade, Industries and Cooperatives (MTIC), 2015.
Zambia	8 percent	30 percent	Mbuta, 2007
Zimbabwe	40 percent	15 percent	Katua, 2014; Zwinoira, 2015.

Furthermore, across different regions of the world, there is enough evidence [see Table 2] to show that SMEs are equally relevant in terms of employment shares. According to Ayyagari, Beck and Demirgu-kunt (2011), the importance of SMEs correlates with the Gross National Product (GDP).

Table 2. SMEs in the global economy.

Median Across Regions	SMEs 100	SMEs 150	SMEs 200	SMEs 250	SMEs 300	SMEs 500
Africa	54.77	63.79	68.15	76.85	80.58	85.11
East Asia and Pacific	56.79	61.59	67.42	65.70	71.34	71.34
Europe and Central Asia	44.71	53.08	59.46	66.32	67.48	75.47
Latin America	53.72	56.71	64.36	67.77	70.99	78.26
Middle East and North Africa	31.20	48.10	36.63	57.31	58.56	62.30
North America	41.73	39.34	41.99	-	59.27	56.58
South Asia	56.68	65.29	73.61	78.00	80.26	88.56

Source: Ayyagari et al., 2007

SMEs contribution to Employment shares by Region—Median

In Nigeria, SMEs are acknowledged as the foundation for economic development and technological innovation (SMEDAN/NBS, 2013), and provide about 70 percent of the manufacturing base for the economy. With innovative technology, internalization into foreign markets becomes possible and supporting SMEs to make them viable and competitive, improves the wellbeing of the citizens together with improving the economies of sub-Saharan countries (Folabi. 2015).

1.2. Definition of SMEs

SMEs connote small and medium-scale enterprises (Ward, 2018; SMEDAN, 2013). These enterprises are the backbone of most businesses in developed and developing economies. Globally, there is no acceptable and generalized definition for SMEs,

rather it is country and industry specific (Harjula, 2008; Ward, 2018), determined by the status of socio-economic development of any country (Ayyagari, Beck & Demirguc-Kunt, 2007; Mutula & Brakel, 2006). Despite being country and industry specific (Ward, 2018; Harjula, 2008), classification is based on a number of criteria which includes the number of personnel employed, yearly turnover, annual balance sheet; production volume, and assets, either individually or a combination of these criteria (Ward, 2018).

1.2.1. Classification of Micro-, Small- and Medium-Scale Enterprises in Nigeria

The Small and Medium Enterprises Development Agency of Nigeria (SMEDAN/NBS 2013), classifies enterprises into micro, small and medium-scale based on the criteria of employment and assets according to Table 3 below.

Table 3. Classification of micro-, small, and medium-scale enterprises

S/N	Size Category	Employment	Assets (N million) excluding land and buildings
1	Micro enterprise	Less than 10	Less than 5 million
2	Small enterprise	10 to 49	5 to less than 50
3	Medium enterprise	50 to 199	50 to less than 500

Source: SMEDA/NBS, 2013

Uniquely to Nigeria, other institutions such as Bank of Industries (BoI), have a different classification for SMEs as shown in Table 3.1 below.

Table 3.1. Classifications of SMEs (Source: Bank of Industries, 2018)

Enterprise Category	No of employees	Total Assets (N' Million)	Annual Turnover (N' Million)	Loan Amount (N' Million)
Micro	≤ 10	≤ 5	≤ 20	≤ 10
Small	≥ 11 ≤ 50	≥ 5 ≤ 100	≤ 100	≥ 10 ≤ 100
Medium	≥ 51 ≤ 200	≥ 100 ≤ 500	≤ 500	≥ 100 ≤ 500

1.3. Female Entrepreneurship

Entrepreneurship, succinctly, is the mental urge to take risks as well as the potential to be amenable to risk exposure in situations of market uncertainties, and the skill and capacity for predicting things which might prove true, breaking with established norms and conditions, and innovatively responding to the needs and dictates of the market or environment (Etim, 2019).

Women who are induced into productive activities through self-employment are empowered socio-economically. Self-employment then enhances significantly their overall development (Wube, 2010). Self-employment can be through several media running from microenterprises, to small or medium-size productive businesses. These enterprises (both within the formal or informal sectors), provide a means for

economic survival and social benefits for the women, communities and social environments (UNIDO, 2001).

Female entrepreneurs according to Manerkar (2015) represent a group of women or individuals intent on business initiation and creation. They are involved with initiation, planning and control of business operations. Okafor and Mordi (2010:44) are of the consensus that “women entrepreneurs are simply women who participate in total entrepreneurial activities, taking the risks involved by combining resources together in a unique way so as to take advantage of the opportunity identified in their immediate environment through the production of goods and services”

The upward growth in women self-employment has a positive impact on socio-economic development of most economies (Nieman & Nieuwenhuizen, 2009; Pofeldt, 2015; MIWE, 2018) However, several studies point to the fact that experiences of female entrepreneurs are in contrast to those of men, gender constructs being a significant contributor to the disparity in consideration of enterprise ownership and operation (Carter & Shaw, 2006; Nxopo, 2014; Etim & Iwu, 2018; MIWE, 2018).

Female entrepreneurship in the views of Carter and Shaw (2006) represents the ability of women to engage in opportunity recognition, resource access and acquisition, business initiation and creation, together with having the appropriate skills for the management of the enterprise. In the same vein, female entrepreneurs are a group of women or women who have the propensity to identify gaps in the market place, gathering the necessary resources or input of production, ultimately incorporating an enterprise (Adebayo, 2015, p. 3). Businesses with more than 51 percent financial capital or investment, managed solely by women and with over 51 percent employable positions allocated to women are characterized as women entrepreneurship (Vijayakumar & Jayachiyra, 2013).

Gender constructs become important when considering the participation of women in enterprises formation and operation. Vossenbergh (2013) opines that women can be found in certain business type; while the Global Entrepreneurship Monitor (GEM 2012) posits that on a global perspective, women are absent in construction and manufacturing sectors, but over-populate hospitality and retailing outfits. Additionally, starting from a very low base without enough capitalization, they resort to using their homes for business initiation and creation. This has a negative impact on how customers view these businesses (Marlow, 2002).

1.3.1. Gender Gaps in Enterprise Formation

There is equal representation for both male and female entrepreneurs in sub-Saharan African (Hallward-Driemeier, 2013) representing about 50 percent of non-farm labour force participation helping to increase livelihood and wellbeing for women (Campos & Gassier, 2017). This is in contrast to other regions globally, especially

in Middle East and North Africa (MENA) where the gender gap to participation is large (Hallward-Driemeier, 2013; Kelley et al., 2015)

The average sales for female-owned businesses in Africa are 13 percent lower than those that are male-owned after factoring in country and sector of operations (Bardasi et al., 2011). In considering Swaziland, Brixiova and Kangoye (2015) emphasized monthly sales and number of employees lower than men-owned enterprises. In Ethiopia, there are large differences in size between female and male-owned businesses (Costa & Rijkers, 2012), while about 28 percent lower for value-added in Madagascar (Norman & Vaillant, 2014) between male and female-owned businesses after factors of firm and entrepreneur characteristics have been taken in account. McKenzie and Woodruff (2015) posit that there is a positive correlation between male entrepreneurs and the sales and profits of businesses even after the control of variables acting against gender, while according to Hallward-Driemeier (2013) average value-added for each worker for female-owned enterprises in Africa were 6 percent lower than firms owned and operated by men after control of firm's characteristics is taken into account.

Hence, it can be argued that gender constructs inherently affect choices that women make in their inclinations to be entrepreneurs and due to these constraints, they end up running smaller, non-profitable enterprises (Carter & Shaw 2006; Vossenber 2013). That is why most female entrepreneurs gravitate towards retail outfits and the informal sector where entry requirements are miniscule, eventually ending up with "survival-mode" enterprises in sub-Saharan Africa and other developing economies (Vossenber, 2013; Mushtaq, 2012).

1.4. Statement of the Research Problem

The intent of women to be part of economic activity is reported by several authors (ADB, 2014; Kehinde et al., 2016; Anga, 2014, Nxopo, 2014; UNCTAD, 2014; Mandipaka, 2015). These reports indicate that female entrepreneurship is beneficial to the development of the sub-Saharan economy, despite the notion that their participation is confined to micro-enterprises, small and medium-scale ventures interlaced with low-end technologies, low productivity, management deficiencies, with lower capitalization and turnover. Nonetheless, male-owned enterprises outperform those that are female owned (Bardasi et al., 2011; Costa & Rijkers, 2012).

Pertinent problems which beset the Nigerian female entrepreneur as outlined by Amuchie *et al.* (2015, p. 91) include "poor access to finance or capital, low level of educational achievement, family perceptions about self-employment for women, cultural beliefs and tradition, high competitive environments, male-dominated society, handicaps in mobility, low risk-bearing ability and low achievement expectation". Equally, Ekpenyong (2014) holds the view that more than 50 percent of female-owned businesses in Akwa Ibom State, Nigeria, are subjected to gender-

related constraints when starting or expanding existing businesses. Typically, women “face a range of challenges that arise from the socio-cultural, economic, legal, political, and technological environments in which they live or operate” (USAID KSC, 2010). They experience impeding conditions in locally regulatory, normative, and cognitive systems which discourage them from taking up entrepreneurship as a career or even expanding their existing businesses (USAID Knowledge Services Center (KSC), 2010, p. 1). Unfortunately, female entrepreneurs face additional social, cultural, educational and technological challenges than men when it comes to establishing and developing their own enterprises, together with problems of accessing economic resources (Mayoux, 2001). Additionally, child birth and care giving, extra burdens in raising the family, have a detrimental or negative impact upon their ability to generate income outside the home (ILO, 2004).

Although literature has information in respect of constraints experienced by female entrepreneurs on a global scale including sub-Saharan Africa (USAID KSC 2010; Amuchei et al., 2015; Ekpenyong, 2014; Adebayo, 2015; Vossenber, 2013; Nxopo, 2014; Kyalo et al., 2014; Mandipaka, 2014; ADB, 2014, UNCTAD, 2014); it is relatively sparse (Ekpenyong, 2015; Akpan, 2015) for Akwa Ibom State (AKS). Thus, there is paucity of information in respect of constraints that female entrepreneurs’ in AKS North East Senatorial District (NESD), Nigeria, experience in the creation, growing and expanding of small and medium scale enterprises. On record are schemes and incentives instituted by the government at national, state and local levels (SMEDAN, 2013; Etim, 2019) for the enhancement of female-owned businesses, but generally female entrepreneurs are subjected to several constraints in the daily operations of their venture in other regions of Nigeria. Therefore, this study was initiated to try to ascertain the constraints female entrepreneurs face in this part of Nigeria - Akwa Ibom North East Senatorial District.

1.5. Research Objectives

This research set out to determine:

- 1 The main constraints for female-owned small and medium scale businesses in AKS North East Senatorial District, Nigeria, and
2. The prospects for female-owned business in AKS.

1.6. Research Question

The research question that this study addressed was: What are the constraints confronting female entrepreneurs in AKS NESD, of Nigeria?

1.6.1. Sub Research Question

The attainment of the above-named objectives, necessitate exploring sub-research questions:

- What factors constraint female entrepreneurship in AKS NESD?
- What is the future outlook for female –owned businesses in AKS NESD?

1.7. Significance of the Research

In sub-Saharan Africa, women form part of the work force powering the economy to new heights, selling all types of products and providing services (World Bank Blog, 2017). However, embedded in the statistics, are limitations that the average female entrepreneur faces daily in business operation. (Amine & Staub, 2009; Singh et al., 2010)

Across Africa, key constraints impede female entrepreneurs (Mandipaka, 2014; Vossenbergh, 2013) and despite the fact that gender gap is closing, women still possess lower educational qualifications and fewer skills than men. Generally, women are without capital or assets, and are less likely to access credit without the consent of their spouses. In Malawi, 23 percent of female entrepreneurs use savings of spouses for enterprise formation as opposed to 2 percent for men (Campos, Goldstein & McKenzie, 2015). Regulatory laws against women are eroding fast, but cultural and traditional norms are stacked against women who do not have access to land or property, key collateral components for bank loans. (Brixiova & Kangoye, 2015; Esty, 2014; World Bank, 2017)

Ekpenyong (2014), Akpan (2015), and Amuchei *et al.* (2015), exploring the role of female-owned SMEs in AKS in relationship to economic growth and poverty alleviation noted: “improvements to family income; improved standard of living, more employment opportunities, improved family nutrition, availability of more goods, decrease in unemployment statistics and improved family health (Ekpenyong, 2014, pp. 8-12) as key contributing economic development factors to AKS” However, key militating factors to daily business operation include “poor access to finance, cultural, religious or traditional barriers, high levels of competition, poor motivation, legal problems, lack of supporting infrastructure (Ekpenyong, 2014; Amuchei et al., 2015); inability in balancing life-work interface, minimal turnover from subsistent farming, lack of adequate power supply to sustain perishable goods, poor transportation, and low risk bearing propensity” (Akpan, 2015).

Given the fact that women in Africa resort to self-employment because of the absence of formal employment opportunities, or limited access to wage employment (Hallward-Driemeier, 2013), and considering the underperformance of female-owned businesses in comparison to their male counterparts, tackling these constraints will bring about better performance by female-operated enterprises. More so it is vital to assist female entrepreneurs build enterprises that support employment and poverty reduction in their respective communities for this action encourages employment of other women (Cirera & Qasim, 2014). The thrust of this study is a

quantitative one aimed at determining the constraints facing female entrepreneurs in AKS NESD.

1.8. Delineation of the Study

Delineation in research becomes important to limit the scope of the study area. Akwa Ibom State [latitudes 4° 32' N and 5° 33' N] and longitudes [7°25' E and 8°25' E] (AKS Government Website, 2016) is one of the southeastern states in Nigeria, bounded by Bight of Biafra (Atlantic Ocean) in the south, Rivers State in the west and Cross River on the east. Farming consist of maize, yams, rice, cowpeas, and cassava for subsistence, while cash crops include palm oil, rubber, and cocoa are the main stay for the inhabitants of the state. Shrimping and deep-sea fishing is important for the coastal communities, while mineral deposits are lignite, offshore oil and gas deposits (AKS Gov. Website, 2016). The study area consisted of nine (9) local government areas (LGAs), including Uyo, the state and financial capital.

2. Methodology

The research adopted a positivist research philosophy and a quantitative design for data generation and collation.

2.1. Questionnaire Development

To elucidate the pertinent question raised in section (1.6), a descriptive survey was instituted, for it forms the core fundamental steps in business research process (Zikmund, 2003). Additionally, the semi-structured questionnaire delivered to female entrepreneurs was such that, owners/operators/managers of businesses indicated their agreement or disagreement with the content (Nxopo, 2014). The items in the semi-structured questionnaire included demographic properties, ascertaining the business type, number of years in business operation, and other items on a 5-point Likert scale (scoring 1 to 5).

2.2. Sampling

In research, any sample is a representation of a subset of a population. Essentially, the challenges of time, finance, and manageability imposed on the population (Taylor, 2017; Andale, 2015), necessitated sampling. A probabilistic sampling procedure became necessary to increase equal chances of inclusion in the sampling process. The study employed the Raosoft Sample Size Calculator (2004; Krause in DataBlog, 2012), with an acceptable 5 percent error margin, as well as 95 percent confidence level on a population size of 1000 female entrepreneurs in AKS. Based on the response distribution of 50 percent, 278 became the acceptable sample size and this number (278) is therefore the allowed respondents necessary for any accommodative amount of uncertainty in the study. The sample was purposively obtained due to absence of a database containing names and addresses of female

entrepreneurs in AKS, NESD. Additionally, the respondents came from the service, agriculture and hospitality sectors. Female entrepreneurs are typically absent from mining, construction and manufacturing sectors. This is the domain of male operated businesses and multi-nationals.

2.3. Ethical Considerations

The study took into account ethical considerations for the respondents and ethics here refers to philosophical considerations revolving around decision making dynamics as to what is right or wrong (Fouka & Mantzarou, 2011). In cognizance that research work, involves individuals, communities, and social values, it is necessary to protect the dignity of the subjects (Fouka & Mantzarou, 2011). Research ethics represents the “codification of ethics of science in practice” (NCRAN 2006), thus informed consent, beneficence, respect for anonymity and confidentiality, and publication of pertinent information to research were taken into consideration. Furthermore, to limit coercion and duress the Drop-Off/Pick-Up [DOPU] (Trentelman, Irwin, Peterson, Ruiz & Szalay, 2016) method was introduced for data collation.

3. Data Analysis

A total number of 210 respondents took part in the study and the primary data was generated using IBM SPSS version 25.

3.1. Measurement of Variables

The profile for the dependent variable [female entrepreneurs], was obtained through age, educational and marital status, number of children and years in business operation, number of employees and legal status of their enterprises (Etim & Iwu, 2018). The independent variables are the constraints experienced by female entrepreneurs in this part of Nigeria. These variables were measured with a semi-structured questionnaire as the research instrument.

A 5-point Likert-type scale [1=strongly agree; 2=agree; 3=neutral; 4=disagree, 5=strongly disagree] was introduced into the set of questions to ascertain the social, economic, administrative and legal constraints that impede female entrepreneurship development in AKS NESD, Nigeria.

3.2. Research Findings and Interpretation

A review of literature indicates that there are demographic, environmental, organizational, and legal constraints (Startiene & Remeikiene, 2009; Mathew, 2010) impeding the growth of SMEs in developing countries. Additionally, there are interrelated social problems that confront female entrepreneurs in their quest to

provide for their families by way of self-employment. The findings by way of descriptive statistics have been documented (Etim, 2019; Etim & Iwu, 2018).

3.2.1. Factor Analysis

Generally, factor analysis (FA) can be employed for data analysis to enhance the emergence of causal relationships and patterns, for rationale understanding and better interpretations (Yong & Pearce, 2013). It therefore becomes necessary for constructs and concept development for complicating concepts including socioeconomic status (Rahm, n. d.). Furthermore, it may be seen as a statistical reduction methodology for correlational mapping of a number of variables (Cattel, 1973; Jolliffe, 2002) with the sole purpose of establishing underlying constructs or patterns between existing variables.

In the view of Child (2006), FA employs mathematical models to simplify interrelated measure enabling existing patterns in a set of variables to emerge or according to Harman (1976), factor analysis is an attempt in trying to ascertain simplified methods for interpreting data and parsimony is its primary aim.

Output

The established range for Cronbach's alpha reliability coefficient is from 0 to 1.0 (Gliem & Gliem, 2003). Fortunately, it is acceptable not to impose a lower limit on alpha reliability coefficient. The norm is that the closer the value of alpha (α) is to 1.0, the greater the value for internal consistency of the items in the scale.

Using the formula:

$$\alpha = r \frac{k}{[1+(k-1)r]}$$

Where: k = number of items under consideration

r = mean of the inter-item correlation (Gliem & Gliem, 2003).

According to Gliem and Gliem (2003) the size of alpha is a result of the mean and number of items in the scale.

The rule of thumb is given by George and Mallery (2003) as:

_.9 = Excellent; >.8 = Good; >.7 = Acceptable; >.6 = Questionable; >.5 = Poor; and <.5 = Unacceptable.

The general consensus is that >.8 is a reasonable goal to aim at.

Some questions used in the study, are shown in Table 4 below:

Table 4. Cronbach's alpha and emergent clusters

S/N	Items in the questionnaire	Cronbach's alpha (α)/reliability	CLUSTERS
1	Business taxes NOT reasonable and no effect on business	.795	α=.705; ADF
2	NO more support from government	.754	
3	Female entrepreneurs in AKS supported by government	.499	
4	Business registration is not complicated	.394	
5	Government policy not important in informal economy	.336	α=.705; SF
6	Collateral hurdle to obtaining finance		
7	Employees' attitude positive	.770	
8	Socially responsible and accepted by community	.743	
9	Better contact with business partners	.650	
10	Have enough legal support from government	.634	α=.654; EF
11	Do not suffer discrimination	.574	
12	Access to business training	.662	
13	Technological access is adequate	.639	
14	Financial inheritance sufficient for business	.618	α=.800; PVF
15	Continuous access to information	.547	
16	Good access to loans/finance	.527	
17	Can obtain managerial skills	.523	
18	Infrastructural problems	-.380	
19	Use of home supports business	.302	
20	Sexual harassment in market	.848	
21	My business more than survival-mode	.849	
22	Discrimination in market place	.783	
23	Pregnancy, childcare affect business	.695	
24	Emotional satisfied with work-life	.481	

ADF= Administrative factors; SF= Social factors; EF = Economic factors; PVF = Personal factors.

In summation, Gliem and Gliem (2003) propose that:

“When utilizing Likert-type scales, it is important to make calculations and then report Cronbach's alpha coefficient for internal consistency reliability for the scales or subscales one may be using. The analysis of the data then must use these summated scales or subscales and not individual items. If one does otherwise, the reliability of the items is at best probably low and at worst unknown. Cronbach's alpha does not provide reliability estimates for single items” (p. 88).

3.3. Administrative Factors

Table 5.1. FA for Administrative factors

Component Matrix ^(a)	Component 1
Administration 8: business taxes NOT reasonable and no effect on business	.795
Administration 7: more support from government to improve businesses NEEDED	.754
Administration 6: female entrepreneurs in AKS supported by government	.499
Administration 3: business registration in AKS NOT complicated	.394
Administration 2: government policy NOT important in the informal economy	.338
Administration 4: collateral hurdle to obtaining financing	
Administration 1: have support from government	
Administration 5: interest rate charges are high	

Extraction method: Component Factor Analysis (CFA) ^a; 1 component extracted

Factor loading analysis for the administrative constraints consisted of 8 items, and of these only administrative factors 7 and 8 with ($\alpha=.754$ and $\alpha=.795$ respectively), representing Cronbach’s alpha reliability coefficients for internal consistency (Gliem & Gliem, 2003) were accepted.

Given that $\alpha > 0.7$ is acceptable (George & Mallery, 2003) leading to the number of items in the reliability statistics being reduced to two (2).

Scale: Administration

Reliability Statistics

Cronbach’s alpha (α)	Number of items
0.705	2

Table 5.2. Item-total statistics (Administration)

	Scale Mean if item Deleted	Scale Variance if item Deleted	Corrected item-total Correlation	Cronbach’s alpha if item Deleted
Administration 7: no more support from government to improve business NEEDED	4.86	.349	.600	
Administration 8: business taxes NOT reasonable and no effect on business	4.65	.861	.600	

It follows that from Tables (5.1 and 5.2), Cronbach’s alpha valuation of 0.705 represents the reliability statistics. More so, the alpha (α) values (2 subset) were .794 and .754 respectively. The results indicate an acceptable level of construct validity, as well as the acceptable consistency of the modified questionnaires, resulting from a study for 210 respondents in the determination of institutional support for female

entrepreneurship. Additionally, results from the reliability statistics indicate that the items which form the 8-point scale, had satisfactory discriminating power (Lin et al., 2015, pp. 454-455).

3.4. Social Factors

Table 5.3. FA for Social factors

Component Matrix ^(a)	Component
Social factor 6: employees attitude positive and helpful to growth	.770
Social factor 5: socially responsible and accepted by community	.743
Social factor 4: better contact/network with business partners	.650
Social factor 12: have enough legal support from government	.634
Social factor 9: do not suffer from discrimination	.574
Social factor 11: my products/services are accepted by customers	.454
Social factor 7: business plays a supporting role in my community	.452
Social factor 3: positive relationship with male entrepreneurs	.428

Extraction Method Principal Component Analysis (PCA) ^(a) 1 Component Extracted.

Scale: Social factors

Reliability Statistics

Cronbach's alpha (α)	No of Items
.705	7

Table 5.4. Item-total statistics

	Scale Mean if item Deleted	Scale variance if item Deleted	Corrected item-total Correlation	Cronbach's alpha if item Deleted.
Social factor 3: positive relationship with male entrepreneurs	14.62	8.542	.317	.695
Social factor 4: better contact/network with business partners	13.59	5.506	.487	.670
Social factor 5: socially responsible and accepted by community	14.62	7.261	.552	.640
Social factor 6: employees attitude positive and helpful to growth	14.85	7.823	.602	.648
Social factor 7: business plays a supporting role in my community	14.93	8.656	.250	.706
Social factor 9: do not suffer from discrimination	14.87	7.685	.392	.678
Social factor 12: have enough legal support from government	12.30	6.797	.491	.651

The above calculations indicate that Cronbach’s alpha (α) for the 7 items resulted in an internal consistency of 0.70 (acceptable) from questionnaires administered on 210 respondents in the determination of social constraints, which contributed to the performance of female entrepreneurs in AKS NESD [see Tables 5.3; and 5.4 above] (Lin et al., 2015)

A Cronbach’s alpha (α) value of 0.70 is acceptable (George & Mallery, 2003 cited in Gliem & Gliem, 2003).

3.5. Economic Factors

Table 5.5. FA for Economic factors

Component Matrix ^a	Component 1
Economic factor 3 increase access to business training	.662
Economic factor 8 technological access is adequate	.639
Economic factor 7 financial inheritance sufficient for business	.618
Economic factor 4 continuous access to information	.547
Economic factor 1 good access to loans/finance	.527
Economic factor 5 can obtain managerial skills to run business	.523
Economic factor 10 infrastructural problems undermine business	-.380
Economic factor 6 use of home supports business activities	.302
Economic Factor 11 outlook for business in AKS is good	
Economic factor 2 access to market/limited competition	
Economic factor 9 raw materials for business are expensive.	

Extraction Method: Principal Component Analysis (PCA) ^a 1 Component Extracted

Scales: Economic factors

Reliability Statistics

Cronbach’s alpha (α)	No of items
.654	6

Table 5.6. Item-total Statistics

	Scale Mean if item Deleted	Scale variance if item Deleted	Corrected item-total Correlation	Cronbach’s alpha if item is Deleted
Economic factor 1, good access to loan/finance	20.26	4.843	.311	.643
Economic factor 3, access to business training	21.08	4.195	.408	.610
Economic factor 4, continuous access to information	21.07	4.474	.373	.628
Economic factor 5, can obtain managerial skills to run business	21.14	4.257	.362	.627

Economic factor 7, financial inheritance sufficient for business	21.07	4.325	.427	.606
Economic factor 8, technological access is adequate	20.79	3.324	.486	.583

The internal consistency for economic factors consisting of 6 items in the subset is 0.65 [The reliability statistics table 5.5 above] (Gardner, 1995, p. 285), consequently “the value of α is maximized when every item in a scale shares common variance with at least some other items on the scale”

In the views of George and Mallery (2003), an alpha value of $\alpha = 0.6$ is questionable.

Gardner (1995, p. 285) opines that: a scale may be composed of several clusters of items each measuring a distinct factor, as long as every item correlates well with some other item, the scale will demonstrate internal consistency,’ and researchers should guard against conflating internal consistency with uni-dimensionality (Taber, 2016), for a high value for Cronbach’s alpha (α) for any particular instrument is measuring the same thing (Taber, 2016).

Hence, a low internal consistency is observed with the economic factors

3.6. Personal Views

Table 5.7. FA for Personal views

Component Matrix	1 Component
Personal view 6: sexual harassment in market affects business activities	.848
Personal view 4: my business more than a ‘survival mode’ and am happy	.840
Personal view 7: discrimination in market affects my business	.783
Personal view 5: my business is more than “survival mode”	.753
Personal view 3; pregnancy, childcare affect business venturing	.695
Personal view 2: emotionally satisfied with work-life relationship	.481
Personal view 1: business climate in AKS good for start-up	.395

Extraction Method Principal Component Analysis ^(a) 1 Component Extracted.

Scale: Personal view

Reliability Statistics

Cronbach’s alpha	No of items
.796	7

Table 5.7. Item-total Statistics

	Scale Mean if item Deleted	Scale Variance if item Deleted	Correct item-total Correlation	Cronbach's alpha if item Deleted
Personal view 1, business climate in AKS good for start-up	14.20	20.493	.270	.807
Personal view 2, emotionally satisfied with work-life relationship	14.38	20.093	.358	.800
Personal view 3, pregnancy, childcare affects business venturing	13.09	12.473	.565	.793
Personal view 4, my business is 'survival-mode' and am happy	13.37	13.099	.745	.720
Personal view 5, my business is more than 'survival-mode'	13.78	15.490	.611	.753
Personal view 6, sexual harassment in market affects business	14.16	16.518	.727	.744
Personal view 7, discrimination in market place affects business	14.34	16.600	.675	.750

The reliability statistics for the total of 7 items gives a value of 0.796 or $[\infty 0.8]$, relatively good (George & Mallery cited in Gliem & Gliem, 2002) for the personal views. This value shows that the internal consistencies for personal views among the sample respondents are acceptable.

Table 6. FA frequency

	Economic factors	Administrative and legal	Social factor	Personal factors
N Valid	210	210	210	210
Missing	0	0	0	0
Mean	4.180	4.755	2.376	2.319
Median	4.167	5.000	2.571	2.429
Mode	4.2 ^(a)	5.0	2.7	2.9
Standard Deviation	0.3983	0.6834	0.4446	0.6621
Minimum	3.3	1.0	1.3	1.0
Maximum	4.8	5.0	3.1	3.6

(a) Multiple modes do exist. The smallest value is shown

A review of Table 6 (FA Frequency) indicates that the mean represents the central location of a random variable, and for the sample (210 respondents) purposively selected, the sample mean will remain a random variable (Salkind, 2010). It should also be noted that sample mean would vary with each sample taken from the population (Salkind, 2010). The mean values vary from 4.18 (economic factors), to 4.76 (administrative and legal factors), to 2.38 (social factors) and 2.31 for personal views.

From the FA frequency, it can be interpreted that a mean value varying from 3.50 to 5.00 denotes a major challenge confronting female entrepreneurs in AKS NESD; a range of 2.00 to 3.45 would denote a minor challenge; and less than or equal to (≤ 2.00) indicates minimal challenge that the sample is subjected to. Therefore, utilizing this premise, FA results show that economic factors (mean=4.180), together with administrative and legal factors (mean = 4.755) are major challenges to female entrepreneurship in AKS. At the other end of the spectrum, social factors (mean = 2.376) and personal factors (mean = 2.319) are minor challenges to female entrepreneurship.

4. Discussion

The demographics of respondents indicate the age for active participation and productivity in entrepreneurship to be 25-44 (59%) and 45-55 (41%). This is in line with the findings of Reynolds *et al.*, (2000), and studies from Kauffman Foundation, Duke, MIT (Deeb, 2014), reporting average age for entrepreneurial activities as 40 years. Adeyemi (2007) contends that a typical Nigerian female entrepreneur is 41 years old, married with children, have been groomed from an entrepreneurial home, has 8 years of experience and runs a business where she is the major owner with family members as employees. Marital status equally plays a role in self-employment considering that married women (64%) constitute a greater share of women in enterprise formation. It could be argued that marriage provided the emotional stability and financial resources needed to be a successful businesswoman. The proportion of single women (16.2%), widowed (14.8%) and divorced (4.3%) also contributed to female-owned SMEs in AKS.

Access to loan for start-up and expansion was a major constraint given that female entrepreneurs' (96%) were in disagreement with the item— "Do you have access to loans/finance for business operation?" A mean (4.82), mode (5.0) showed access to loan acting as a major constraint (UNCTAD, 2014; ADB, 2014; Akpan, 2015; Mandipaka, 2016; KSC, 2010; Adebayo, 2015; Ekenyong, 2014). Competition in the market place also became a major constraint (95%; mean = 4.33; mode = 4) and inability to be actively involved in skill training and development. (79%, mean=4.00; mode=4). Technology support and use in daily business operation was a major constraint (89.5%, mean=4.29; mode=4.0). Business processes have been reported to be catalyzed by ICT adoption and use (UNCTAD, 2014; ADB, 2014; Genpact, 2014).

In summation, the results show that four (4) factors derived through factor analyses, are responsible for the slow pace of development of female entrepreneurs in AKS. These factors are - Economic, Administrative, Social and Personal. The core economic factors include technological access; access to loans, access to training;

and financial inheritance for business operation. The administrative factors include business taxes, and support from government. Social factors are employees' attitude necessary for the growth of businesses; social networks and contacts with business partners, discrimination in the market place, and female-owned businesses playing a supporting role in community.

5. Study Limitations

Unfortunately, during the pilot study, the instrument was pre-tested with 20 respondents (2 per local government area). Perhaps a larger number of respondents during the pilot run could have increased reliability. However due to cost constraints this was not possible. More-so, the study concentrated in one senatorial district in AKS. It is necessary to carry out subsequent studies in other parts of the State before generalization could be made.

6. Conclusion, Implications and Recommendations

The constraints experienced by female entrepreneurs do mirror those reported in other developing economies. Female entrepreneurs in AKS NESD are beset with funding difficulties from lack of collateral. Funding or access to credit is a determinant factor for business venturing, and without credit, female entrepreneurs experience some form of limitations in their entrepreneurial activities. Secondly, high cost of inputs, infrastructural challenges leading to more overheads, unstable power supply, unpredictability of customer demands, high interest rate, absence of information relevant to their line of trade, improper training in business management, lack of policy regarding information and communication technology and not being aware or inability to access incentives from government, were the major constraints facing female entrepreneurship in AKS NESD.

This study has some serious implications for government, financial institutions (banks, lenders) and other stakeholders (NGOs) interested in the development and enhancement of female-owned SMEs. We contend that these stakeholders should painstakingly design policies, programmes, and projects that address the core issues that continue to impede the growth of female entrepreneurship in Nigeria. It must not be superficial but sustained action taken for considerable number of years targeted to gender-related constraints.

Recommendations include government subsidizing or providing guaranteed loans (about 40-50%) to female entrepreneurs in the state. Reports (Esty, 2014; Admin, 2015) from other developing economies show female entrepreneurs are more creditworthy than their male counter-parts.

High cost of utilities can be circumvented by guaranteed steps from government for improved infrastructure in the state. Improvement in infrastructure leads to reduction in costs of input for manufacture and operating costs for these businesses. Social capital is relevant for business venturing, therefore women are encouraged to maintain quality social networks (Aldrich, 1989).

Leveraging of information and communications technology have been reported to catalyze female-owned businesses (UNCTAD, 2014; ADB, 2014), and it is therefore recommended that women receive proper training on adoption and use of technology to drive business processes.

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