Dimensions of risk factors in micro, small and medium agribusinesses: Evidence from Northwest, Nigeria

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Abstract
Micro, Small and Medium Scale Enterprises (MSMEs) is a key factor in promoting private sector development and partnership in Nigeria thus the main engine of economic growth and economic development.The study intend to answer the research question, what are the major risks of concerns of micro, small and medium scale agribusiness enterprises in North-Western Nigeria? Multistage sampling procedure result to random selection of three States, 515 MSMEs stratified into micro (190), small (256) and medium (69) agribusiness enterprises. Data were collected using primary and secondary sources. Descriptive statistics and Principle Component Analysis (PCA) through STATA packagewere employed to achieve objective of the study. Analysis of indicators of the major risks faced by MSMEs revealed that the mean scores of the most important risks associated with micro agribusiness were financial stress (4.37) and effect of ill-health (4.22); in small agribusiness, social capital (3.68) and menace of kidnapping and banditries (3.62) and medium enterprise encountered difficulties of credit access (3.68) and social capital problem (3.62). The estimation of the exploratory factor analysis in micro enterprise showed that politico-economic and social risks explained about 68% of variation of risks. The scree criterion in small enterprises suggested that between 1 and 3 factors should be retained given that there were apparent inflexion points at the second and third factor. In medium enterprise, using an oblique rotation, a one-factor solution was identified to be optimal and was found to explain about 54% of variation of risks. This indicates that medium agribusinesses were characterized by socio-economic and political risks which were related one to the other.The study revealed that MSM agribusiness enterprises were faced by one-dimensional but varied socio-economic and political risks. Effective polices on political and socio-economic development that will address agribusiness challenges are canvassed from the state and federal agencies and legislators.

Keywords: MSMEs, policies, risks, Nigeria

Introduction
Micro, small and medium scale enterprises (MSMEs) play a significant role in the economic development of Nigeria including agriculture and are known to be the main engine of economic growth thus, a key factor in promoting private sector development and partnership (Tom *et al.,*

2018).Small business owners provide about 70% of job opportunities and wealth creation in Nigeria, making up 97% of the total economy (Shehu *et al.,* 2013; Bouwari, 2015). However, the small and medium enterprise development agency of Nigeria (SMEDAN) reported that 80% of small and medium scale enterprises do not sustain the business beyond five years (Adebisi and Gbegi, 2013; Bouwari, 2015).Agribusiness refers to the aspect of agriculture that comprises production, manufacturing and distribution of farm inputs, equipment and supplies at one hand and the processing, storage and distribution of farm output on the other hand. This implies that the entire agricultural production, processing, distribution and consumption ranges from farm inputs inclusive of wood producers, furniture manufacturers, food processors, food packers, food transporters and food marketing companies to restaurants and shopping malls. According to Tom *et al.* (2018), small businesses are usually largely personalized, associated with little capital outlay, minimal fixed assets, highly localized in the area of operation, often with unsophisticated management structure and largely dependent on internal sources of capital to finance its growth. Hence, MSMEs are faced with many external and internal obstacles and risks (Kwode and Okoh, 2018).

Risk is often associated with adversity and loss by the firm (agribusiness entrepreneur), and its survival as a business. Risk is uncertainty that affects an individual's welfare, and is often associated with misfortune and loss (Ashok and Sergio, 2005). More often, literature reveals that business risks can be attributed to many factors. These factors could be economics, political, social and environmental. Thus, most agribusiness enterprises are faced with at least one of these risks.

Micro, small and medium (MSM) agribusiness enterprises are increasingly being affected by many factors. Baquet *et al*. (1997) identified five distinct risk factors in agriculture/ agribusiness: production risk, marketing risk, credit risk, personal risk, and environmental risk. While Hardaker *et al.* (2004) added political and business risks on the list. Therefore, each of those risks has influence in the agribusiness decision-making process. Girdžiūtė (2012) observed that the main risk factors in agriculture include personal, production, economic, political, and credit risks. Thus, these studies show that agricultural risks have different sources but nevertheless they are also related to each other.

In a study conducted by Oladimeji, Hassan, Egwuma, Sani, Galadima and Ajao (2019a) on risk management in honeybee farms in Nigeria, reported that there are multitudes of risks in honeybee production. These include but not limited to production (crop loss, output loss, input loss); environmental (flooding, drought, climate variability) and economic (credit, financial, price fluctuation).Similarly, Belás, Bartoš, Ključnikov and Doležal (2015) found that the most important business risks which were perceived by micro, small and medium entrepreneurs in the Czech Republic and Slovakia were: market, financial and personnel risks. Financial risk including poor access to financing was identified as a key risk by 57.22% of MSMEs entrepreneurs in the Czech Republic and 58.54 % in Slovakia. According to the study,

higher risk of MSMEs is determined by a low degree of diversification of their business activities, small capital strength, limited access to credit, the method of liability of the owners and lower managerial skills.

A study conducted by Kagwathi, Kamau, Njau and Kamau (2014), using factor analysis of rotated matrix helped to identify the major risk factors in small and medium enterprises. The study had forty-six initial variables, which were reduced to fifteen factors which account for 77% of variance with loadings ranging from 0.452 to 0.846. The study identified factors such as limited way of raising fund, exchange rate fluctuations, high interest loans, frequent price fluctuations, lack of technical expertise by management, and natural disaster among others.

It is germane to note that the conceptual frame work of this study is based on the dimensions of risk factors in agribusiness enterprises. The major components of risk identified are political, economic/financial, social and environmental. Figure 1 summarizes the risks involved in agribusiness, though the economic and financial risks connected to investors are not independent of, and often arise from, political, social, and environmental risks. The components represent the risk category while the factors under each of the risk components show example of direct and indirect risks faced by the investors.

Hence, managing risks to reduce and minimize the loss exposure is essential for every small agribusiness enterprises. However, despite the necessity, many MSMEs rarely identify and carry out detailed risk assessment and management strategies. In addition, empirical information on risk management analysis with specific emphasis on micro, small and medium agribusiness enterprises that covers Nigeria is limited (Nto, Mbanasor and Nwaru (2011). In view of the forgoing, a research question was proposed:What are the major risks of concerns of micro, small and medium scale agribusiness enterprises?

Materials and methods

Study area

The study was conducted in the North-Western zone of Nigeria. The zone comprises of seven States: Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara. The zone has a total population of 35,915,467 people representing 25.58% of the population of the country (NBS, 2017). The projected population of the zone is put at 54,090,075 persons in 2021 at a growth rate of 3.2 percent per annum. Agriculture is considered as the major economic activity of the zone with over 80 percent of the population found in the rural areas and predominantly engaged in farming and animal husbandry. Also, trade and commerce are undertaken on small and medium scale, especially in agricultural and other consumer goods (Bivan, 2018).

Sampling Procedure, Sample Size and Data Collection

Multistage sampling procedure was adopted for the purpose of this study. The first stage involved selection of three out of seven states of North-west Nigeria using random sampling technique. These are Kaduna, Kano, and Katsina States. The second stage involved purposive selection of all registered MSMEs agribusiness firms from the three States which totaled three hundred and thirtyfour (334). The list of registered

MSMEs was obtained from relevant agenciessuch as SMEDAN and ministries of commerce and industries in the three States. Additional MSMEs of one hundred and eighty-one (181) were sought for using snowball sampling technique based on information from registered MSMEs with States. This means that initially selected MSMEs provided contact of additional non-registered MSMEs in line with studies of Salganik and Heckathorn (2014) and Oladimeji*et al.* (2019a).This will enable us to get an additional respondents to enable statistical analysis.The total sample size was therefore five hundred and fifteen (515) stratified into micro (190), small (256) and medium (69) enterprises.

Data were collected using primary and secondary sources.The primary data for this study were generated through cross sectional method using structured questionnaire which was administered to the management team of each of the agribusiness firm using Online Data Kip (ODK) computer. The data sourced includesocio-economic status and indicators of the major risks associated with micro, small and medium businesses, risk of concern, political, economic, social and environmental risks among others.

Analytical Techniques

Descriptive statistics and Principle Component Analysis (PCA) were employed to achieve the objective ofstudy. PCA through STATA package was used in naming the factors that were strongly loaded (important) on estimation and description of political, economic, social and environmental risk scores. This was based on the application of Kaiser Normalization using rotation method.In STATA, a convenient option to factor principal component is Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-test). Kaiser (1974) developed a rule of thumb, that the sample is adequate if the value of KMO is greater than 0.5, that is a minimum loading weight or cut-off value, and a desirable value of 0.8 or higher which a factor can have before it can be isolated as being positive to the attribute in question.

The PCA model was specified as follows:

$$PR = \beta_1Q_1 + \beta_2Q_2 + \beta_3Q_3 \quad (1)$$

$$ER = \beta_4Q_4 + \beta_5Q_5 + \beta_6Q_6 + \beta_7Q_7 + \beta_8Q_8 + \beta_9Q_9 + \beta_{10}Q_{10} \quad (2)$$

$$SR = \beta_{11}Q_{11} + \beta_{12}Q_{12} + \beta_{13}Q_{13} + \beta_{14}Q_{14} + \beta_{15}Q_{15} \quad (3)$$

$$ENR = \beta_{16}Q_{16} + \beta_{17}Q_{17} \quad (4)$$

Where:

PR, ER, SR and ENR are defined as Political Risk (PR), Economic Risk (ER), Social Risk (SR) and Environmental Risk (ENR);

Q1 - Q17 were measured in a 5-point Likert scale as follows: SA = Strongly Agreed, AD = Agreed, U = Undecided, D = Disagreed and SD = Strongly Disagreed and β_1-β_{17} = Parameters weight loading of the $Q_1 - Q_{17}$ factors.

Results and discussion

Descriptive Statistics of Indicators of Major Risks

Table 1 presents the results of the descriptive statistics of the items that were used as indicators (measures) of the major risks faced by micro, small and medium agribusinesses in Northwest, Nigeria. The pooled data revealed that experience of social capital problem (item 11)and effect of ill- health (item 13) in the business had the highest means of 4.08 and 4.06respectively. The implication is that an average agribusiness entrepreneur agreed that the two variables (items 11 and 13)

were major risks associated with their businesses. On the other hand, effect of climate change and problems and effect of flood and drought on the business had the smallest overall means of 1.82 and 2.43, respectively in the pooled data. The implication is that agribusiness entrepreneur generally disagreed that these two variables were major risks associated with their businesses.

However, there was a noticeable variability in the responses provided by the agribusiness entrepreneur in terms of their business status. For the micro agribusiness entrepreneur, financial stress encountered (item 5) and effect of ill- health on the business(item 13) had the highest means of 4.32 and 4.37, respectively. For the small agribusiness entrepreneur, experience of social capital problem (item 11) and menace of kidnapping and activities of bandits on the business (item 15) had the highest means of 4.17 and 4.22, respectively. For the small agribusiness entrepreneur, difficulties of credit access in the business (item 4) and experience of social capital (item 11) had the highest means of 3.68 and 3.62, respectively.

Furthermore, for the medium agribusiness entrepreneur, items 3: political embargoes encountered in the business and effect of climate change and problems on the business had the smallest means of 2.77 and 2.3, respectively. This meant that besides item 16 (effect of climate change and problems on your business), the micro and small agribusiness entrepreneur disagreed that item 17: effect of flood and drought on the business was a major risk associated to their businesses while the medium agribusiness entrepreneur disagreed that item 11 was a major risk associated with their business. The medium agribusiness entrepreneur, on the other hand, were indifferent to item 17 as being a major risk associated with their businesses. This is comparable with the studies of Hardaker, Huirne, Anderson, and Lien (2004); Nto *et al.,* 2011;Girdžiūtė (2012) and Girdžiūtė (2015) that reported political and economic as the major risks influencing agribusiness decision-making process.

Estimation of major risk associated with micro agribusiness enterprise

Table 2 shows the exploratory factor analysis results for the major risks associated with micro agribusinesses. A principal component analysis (PCA) was initially conducted on the 17 items (indicators) of the major risks associated with micro agribusinesses in the study area with oblique rotation - risks factors were related. However, due to issues of poor average correlations and unreliability of certain items such as items 4, 5, 7, 11, 13, 16 and 17, the list was reduced to 10 items (Table 2). The overall Kaiser–Meyer–Olkin (KMO) measure verified the sampling adequacy for the analysis with KMO = 0.92 being superb according to Field (2009) and marvellous according to Hutcheson andSofroniou (1999) and adopted by Oladimeji *et al.* (2019a). Moreover, all KMO values for individual items were greater than 0.90, above the acceptable limit of 0.5 (Kaiser, 1974; Field, 2009 adopted by Oladimeji *et al.,* 2019a and Oladimeji, Galadima, Hassan, Sanni, Abdulrahman, Egwuma, Ojeleye and Yakubu, 2019b).

The implication is that the sample size was adequate for factors analysis and the items were good for PCA (Field, 2009). Bartlett's test of sphericity χ^2 (45) = 1121.32 was significant (P<0.01), which indicated that

the correlations between the items were sufficiently important for PCA. The Kaiser's criterion suggests that factors (components) whose eigenvalues are greater than 1 should be retained (Kaiser, 1974). However, according to Field (2009), with a sample size between 100 and 200 or with less than 30 items, the criterion is valid only when all the items' communalities - common variance that an item shares with others - are greater than 0.7.

In the present case study, not all the communalities were greater than 0.7 (Table 2), meaning that the decision to extract factors based on the Kaiser's criterion was not warranted. Consequently, the scree plot analysis was considered and the result suggested that two factors should be extracted (Fig. 1). According to Stevens (2002), rotated factor loading of 0.4 was considered as a threshold in order to specifically label the extracted factors (Table 2). The results revealed that the first factor extracted was mainly associated to economic and political risks while the second factor was mainly related to economic risks. The implication of these findings is that the theoretically four factors (measurements) of risks assumed to be associated with micro agribusinesses namely political, economic, social and environmental were not validated by the data. Moreover, political and economic risks were inter-correlated, that is, inseparable as far as micro agribusinesses are concerned. The Cronbach's alpha, $\alpha = 0.92$, was greater than the minimum of 0.8. This indicated that the politico-economic and social risks associated with micro agribusinesses were reliable. The politico-economic and social risks associated with micro agribusinesses explained about 68 percent of variation in the data. Thus, the analysis suggested that micro agribusinesses were confronted by both politico-economic and social risks. The study is comparable to the findings of Girdžiūtė (2012) and Girdžiūtė (2015).

Estimation of major risk associated with small agribusiness enterprise

Table 3 presents a summary of the exploratory factor analysis of the major risks associated with small agribusinesses in Northwest, Nigeria. The overall KMO was 0.88 while all the KMO of individual items were over 0.8, meaning that, the sample size of 256 was good for the PCA (Kaiser, 1974; Hutcheson and Sofroniou, 1999). The Bartlett's test of sphericity $\chi^2 (105) = 1440.1$ was statistically significant at 1 per cent level of probability, which indicated that all the correlations within the R-matrix were significantly different from zero and thereby sufficiently large for PCA. The Cronbach's $\alpha = 0.88$, is greater than the bare minimum of 0.8, meaning that, the items were reliable as measurements of risks associated with small agribusinesses. However, items 16 and 17 were excluded for being unreliable since their deletion significantly improved the Cronbach's alpha. Kaiser's criterion suggested that 3 factors should be extracted and was warranted given that the sample size exceeded 250 and the average communality of 0.58 exceeded the bare minimum of 0.5 (Field, 2009). The scree criterion equally suggested that between 1 and 3 factors should be retained given that there were apparent inflexion points at the second and third factor (Figure 2). However, the factors were related based on the component transformation matrix, meaning that, the initial orthogonal method of rotation was not adequate. For instance, items 1, 2, 4 and 7 loaded into the first and second factor. Therefore, using an oblique rotation instead of an orthogonal rotation and the scree plot, it was concluded that a one-factor solution was most appropriate.The Cronbach's

alpha, $\alpha = 0.88$, was greater than the minimum of 0.8. This indicated that the political, economic and social risks associated with small agribusinesses were reliable. The politico-economic and social risks associated with micro agribusinesses explained about 68 percent of variation in the data. Thus, the analysis suggested that small agribusinesses were confronted by mixture of both socio-economic-political risks that are interlinked. The study is also comparable to the findings of Girdžiūtė (2012)and Girdžiūtė (2015).

Estimation of major risk associated with medium agribusiness enterprise

Table 4 presents the summary of the principal component analysis (PCA) analysis of the major risks associated with medium agribusinesses. Items 16 and 17 were excluded to their negative influence on the reliability of other items, meaning that, PCA was conducted on the remaining 15 items. The sample size of 69 appeared to be inadequate given that with a sample size of less 100, all communalities are to be greater than 0.6 (MacCallum *et al*., 1999). However, the Kaiser's criterion, overall KMO = 0.82, indicated that the sample size was great (Hutcheson and Sofroniou, 1999). The Bartlett's test, $\chi^2(105) = 733.88$ was statistically significant ($P<0.01$) and revealed that the correlations between the items were sufficient enough for PCA. The Kaiser's criterion suggested that two factors should be extracted, but the proposition was not warranted given that with less than 30 items all comunalities were not greater than 0.70, which was not the case here (Field, 2009).

In addition, the screeplot was also considered as shown in Figure 4. Two potential inflexion points were observed at the second and third factor, meaning that between 1 and 3 factors could be extracted. However, the analysis revealed an inter-correlation between the factors, meaning that, they were not orthogonal. Using an oblique rotation, a one-factor solution was identified to be optimal and was found to explained about 54 percent of variation in the data. consequently, like in small agribusinesses, medium agribusinesses were characterized by socio-economic and political risks which were related one to the other. In other words, the socio-economic and political risks were not independent subscales as assumed *a priori*. The Cronbach's alpha, $\alpha = 0.93$, was greater than the minimum of 0.8. The socio-economic-polotical risks associated with medium agribusinesses explained about 54.42 percent of variation in the data. This indicated that the socio-economic and political risks associated with micro agribusinesses were reliable but also interwoven. Thus, the analysis suggested that micro agribusinesses were confronted by both politico-economic and social risks.

Conclusively, the overall PCA of the major risks associated with micro, small and medium agribusinesses suggested that environmental risk was not an important component of the risks faced by agribusiness entrepreneur in the sector. Although, there was evidence of social, economic and political risks, the triumvirate variables was dependent at different degrees in all the trio: micro, small and medium enterprises.

Moreover, the items had different levels of contribution to their risk level across micro, small and medium agribusinneses. The major issues about micro and small businesses is that they do not have vast resources that big enterprises have.

However, the businesses still face the same risks as their huge competitors which makes them even more vulnerable. Hence, they need to use prudent risk mitigation strategies such as diversification, savings, insurance among others. Thus, the result is inline with the findings of Hardaker*et al*. (2004), Nto (2011) *et al.*and Girdžiūtė (2015) who found that economic and political risks are the major risks associated with agribusiness investment decision making process. According to Asma *et al*. (2015), enterprises size and failure are inversely related, with smaller enterprises facing higher risks of failure than larger ones.

Conclusion and recommendation

The study revealed that micro, small, and medium agribusiness enterprises in the study area were faced by a unidimensional socio-economic and political risks. However, it was equally found that the indicators of these socio-economic and political risks varied with the status of the agribusiness enterprises. Based on the findings of this study, the following recommendations were made:

I. Effective polices on political and socio-economic development that will address agribusiness challenges are canvassed from the state and federal agencies and legislators,

ii. Investors should employed prudent risk management strategies such as enterprises diversification that would minimize their risk challenges and

iii. Recovering from an adverse economic and political event is likely to be quicker and easier if the business investors prepared for it ahead of time and can coordinate response with their most important stakeholders.

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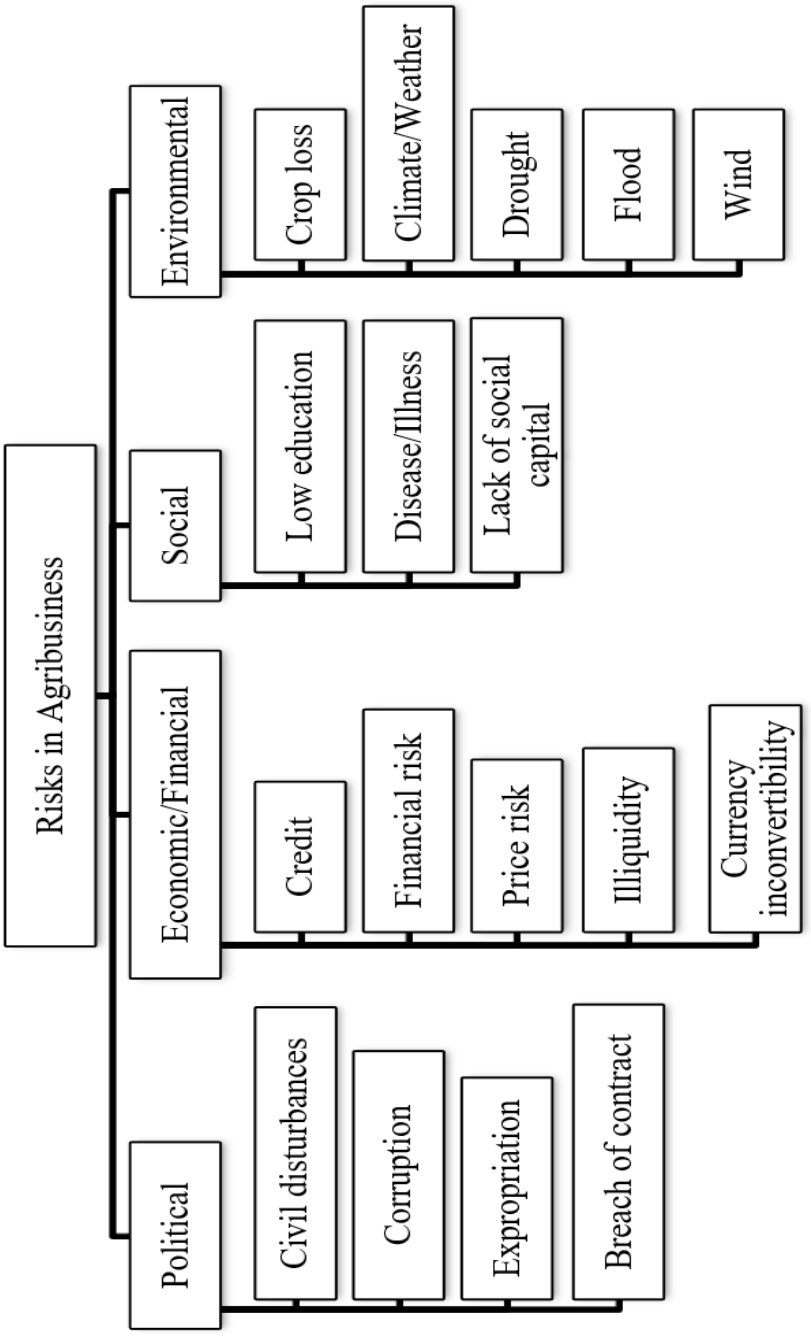

Figure 1: Risk to Agribusiness (Adapted and modified from Theuvsen, 2012 and Oladimeji *et al.,* 2019).

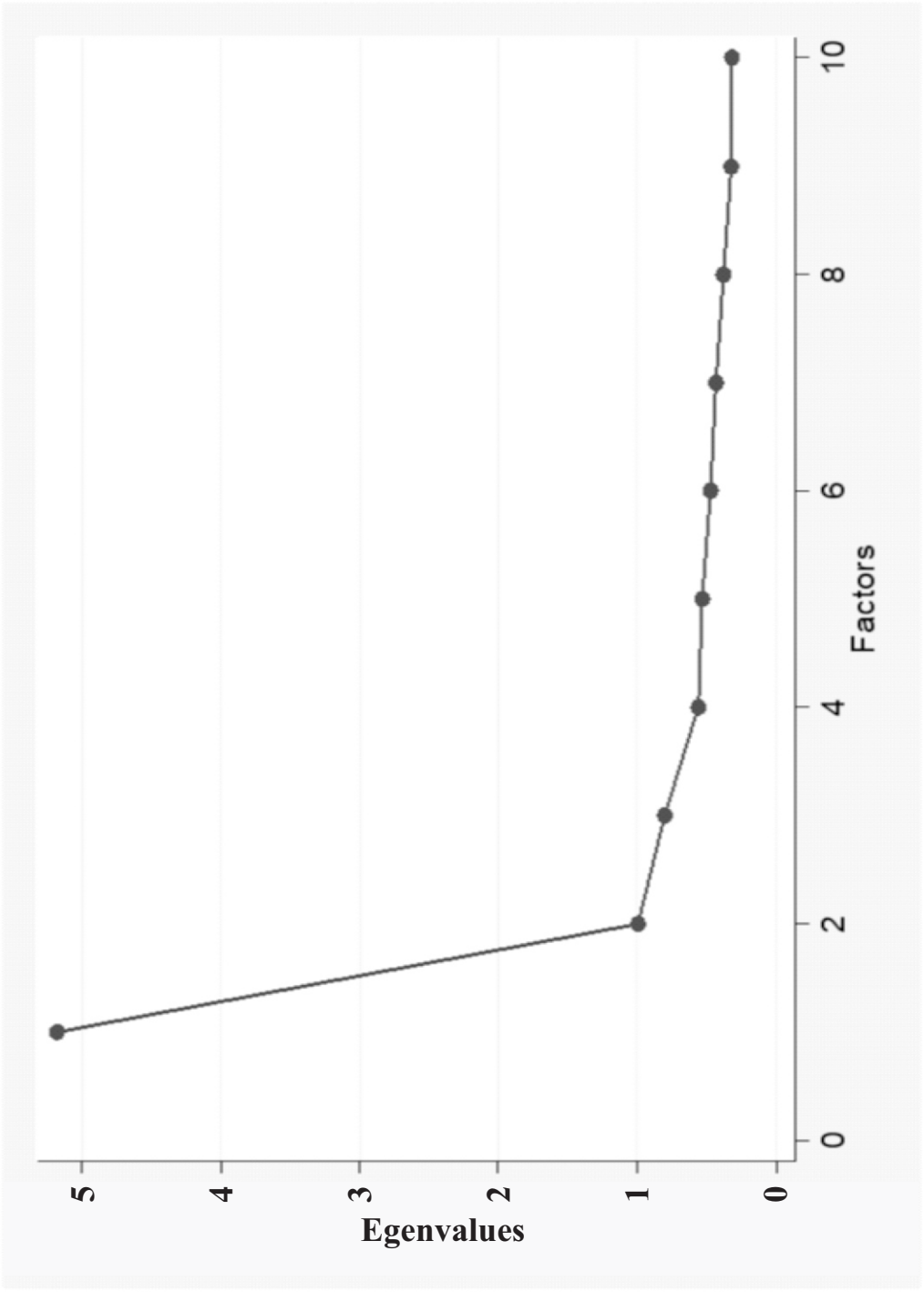

Figure 2: Scree plot of eigenvalues after principal component analysis of the components of the major risks associated with micro agribusinesses

Table 1: Summary of items used as indicators of the major risks associated with micro, small and medium businesses

Item	Description of problem experience in your business	Micro	Small	Medium	Pooled
		X	*X*	*X*	*X*
1	any conflict/civil disturbance	3.81 (1.21)	4.03 (0.98)	3.43 (1.40)	3.87 (1.15)
2	expropriation of property from Govt. / individual	3.63 (1.32)	3.67 (1.25)	2.9 (1.39)	3.56 (1.32)
3	political embargoes encountered	3.29 (1.19)	3.22 (1.08)	2.77 (1.31)	3.19 (1.16)
4	difficulties of credit access	4.23 (0.85)	3.98 (0.90)	3.68 (1.23)	4.03 (0.95)
5	financial stress encountered	4.32 (0.76)	3.81 (1.13)	3.59 (1.29)	3.97 (1.07)
6	currency conversion problem	3.60 (1.36)	3.89 (1.28)	3.22 (1.45)	3.69 (1.35)
7	commodity price change affecting	4.20 (0.81)	3.85 (0.93)	3.45 (1.35)	3.93 (1.98)
8	business illiquidity encountered	4.03 (1.04)	3.85 (1.16)	3.55 (1.29)	3.88 (1.14)
9	trade tariff changes	3.59 (1.03)	3.68 (0.95)	3.12 (1.38)	3.57 (1.06)
10	uncertainties for return on invest.	4.14 (0.98)	3.84 (1.13)	3.51 (1.38)	3.91 (1.13)
11	experience of social capital	4.11 (0.89)	4.17 (1.04)	3.62 (1.33)	4.08 (1.04)
12	effect of education on the biz	3.56 (1.13)	3.69 (1.02)	3.28 (1.36)	3.59 (1.12)
13	effect of ill- health on the biz	4.37 (0.77)	3.99 (0.97)	3.51 (1.43)	4.06 (1.02)
14	Menace of theft and burglary	4.07 (1.11)	3.85 (1.27)	3.23 (1.42)	3.85 (1.25)
15	Menace of kidnapping / bandits	3.94 (1.24)	4.22 (1.16)	3.19 (1.70)	3.98 (1.31)
16	Effect of climate change	1.79 (0.78)	1.72 (0.96)	2.3 (1.46)	1.82 (1.00)
17	Effect of flood and drought	2.24 (0.94)	2.37 (1.01)	3.2 (1.35)	2.43 (1.08)
	Number of observation	**190**	**256**	**69**	**515**

Source: Survey Data (2019); Note: values in bracket denote standard deviation, respectively

Table 2: Summary of exploratory factor analysis results for the major risks associated with micro agribusinesses

Exploratory factors in the business (items)	RFL				Communality
	Politico-economic	Social	KMO	CA if item is deleted	After extraction
Conflict or civil disturbance (1)	0.96	-0.16	0.91	0.91	0.78
Expropriation or depraving of property from govt. (2)	0.93	-0.11	0.92	0.91	0.76
Political embargoes encountered (3)	0.76	0.18	0.95	0.91	0.76
Currency conversion problem (6)	0.73	0.21	0.94	0.91	0.66
Business illiquidity encountered (8)	0.59	0.33	0.94	0.91	0.61
Trade tariff changes (9)	0.51	0.34	0.95	0.92	0.60
Uncertainties for return on invest. (10)	-0.16	0.98	0.84	0.92	0.81
Effect of education on the business (12)	0.25	0.61	0.93	0.92	0.52
Menace of theft and burglary (14)	0.3	0.58	0.92	0.91	0.56
Menace of kidnapping /bandits (15)	0.35	0.46	0.90	0.91	0.76
Model validation statistics					
Eigenvalues	5.86	0.93			
% of variance	58.63	9.34			
Number of observation	190				
Overall KMO	0.92				
Cronbach's alpha	0.92				
Bartlett's test (p) (df)	1121.32*	**			

Source: Survey Data (2019), Note: RFL = Rotated Factor Loading; KMO = Kaiser –Meyer –Olkin measure of sampling adequacy, CA = Cronbach's alpha, CAE = Communality after extraction ***<0.01

Table 3: Summary of exploratory factor analysis results for the major risks associated with small agribusinesses

	RFL		
Exploratory factors in the business (items)	**Socio-economic and political**	**KMO**	**CA if item Deleted**
Social capital problem encountered	0.70	0.88	0.88
Trade tariff changes	0.67	0.89	0.88
Political embargoes encountered	0.67	0.90	0.87
Menace of kidnapping & bandits	0.67	0.88	0.88
Currency conversion problem encountered	0.66	0.86	0.88
Effect of education on the business	0.63	0.91	0.87
Conflict or civil disturbance	0.63	0.82	0.88
Expropriation of property from govt	0.62	0.88	0.88
Effect of ill- health on the business	0.61	0.91	0.87
Business illiquidity encountered	0.61	0.90	0.88
Menace of theft and burglary	0.60	0.93	0.87
Difficulties of credit access	0.58	0.89	0.88
Uncertainties for return on investment	0.56	0.93	0.88
Commodity price change affecting business	0.55	0.92	0.88
Financial stress encountered	0.53	0.86	0.87
Model validation statistics:			
Number of observation	256		
Eigenvalues	5.77		
% of variance	38.45		
Overall KMO	0.89		
Cronbach's alpha	0.88		
Bartlett's test χ^2 (105)	1440.1***		
Average communality	0.58		

Source: Survey Data (2019), CA = Cronbach's alpha

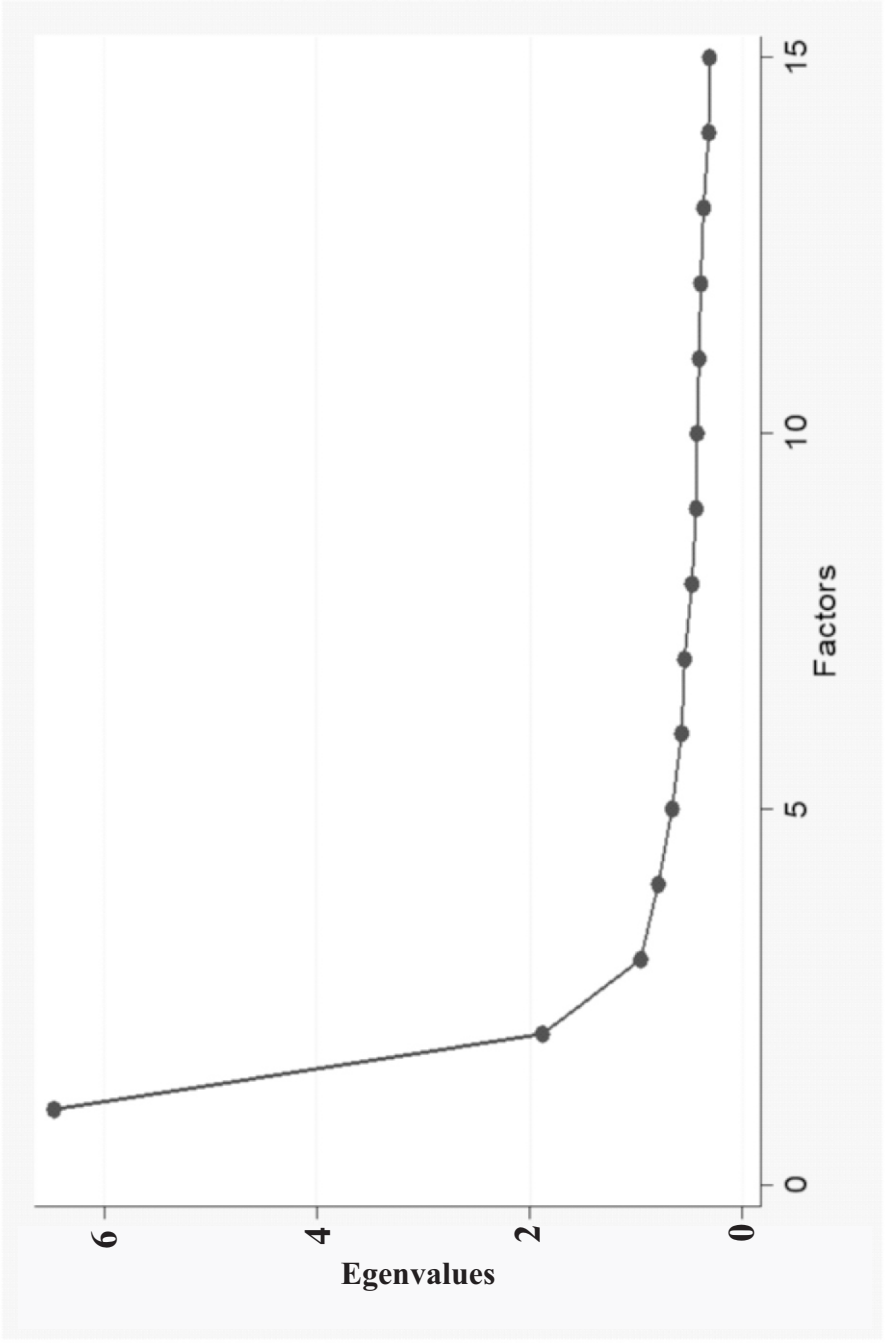

Figure 3: Scree plot of eigenvalues after principal component analysis of the components of the major risks associated with small agribusinesses

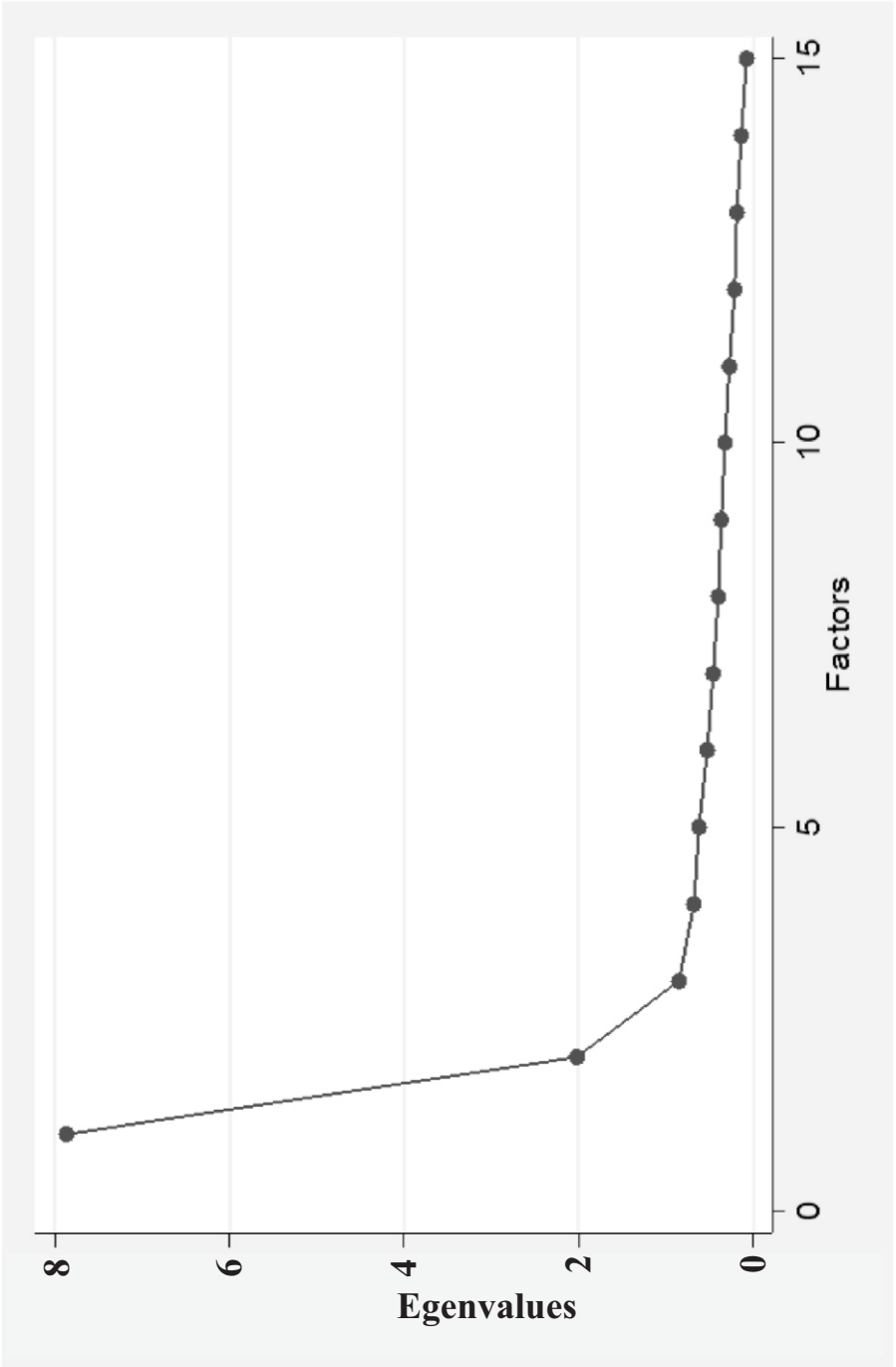

Figure 4: Scree plot of eigenvalues after principal component analysis of the components of the major risks associated with medium agribusinesses.

Table 4: Summary of exploratory factor analysis results for the major risks associated with medium agribusinesses

	RFL		
Exploratory factors in the business	**Socio - economic and political**	**KMO**	**CA if item Deleted**
Social capital problem encountered	0.83	0.74	0.93
Business illiquidity	0.78	0.88	0.93
Difficulties of credit access	0.77	0.89	0.93
Trade tariff changes	0.76	0.90	0.93
Political embargoes encountered	0.76	0.81	0.93
Effect of ill- health on the business	0.75	0.79	0.93
Effect of education on the business	0.75	0.82	0.93
Menace of kidnapping/ bandits	0.75	0.84	0.93
Menace of theft and burglary	0.75	0.88	0.93
Financial stress encountered	0.72	0.71	0.93
Effect of commodity price change	0.69	0.95	0.93
Currency conversion problem	0.67	0.72	0.93
Expropriation of property from Govt.	0.63	0.85	0.93
Effect of conflict or civil disturbance	0.61	0.74	0.93
Uncertainties for return on investment	0.59	0.79	0.93
Model validation statistics			
Number of observation	69		
Eigenvalues	7.86		
% of variance	54.42		
Overall KMO	0.82		
Cronbach's alpha	0.93		
Bartlett's test χ^2 (105)	733.9***		
Average communality	0.52		

Source: Survey Data (2019), CA = Cronbach's alpha