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CHALLENGES FACING FCV TOBACCO FARMERS IN INDIA AND TANZANIA: AN EMPIRICAL SCRUTINY

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Abstract
Agriculture is regarded as a dominant activity for individual and governments development. Agriculture has played a great role to change the economies and development in substantial magnitude. Despite of being a gear to development, agriculture is prone to many challenges that hold it down. FCV tobacco farming is non exceptional on facing these challenges. Smallholder farmers are more challenged by these difficulties than large-scale farmers. Low and Medium Income Countries (LMICs) are also suffering more than Large Income Countries (LICs) when it comes to FCV tobacco growing. Researchers were eager to know specific challenges facing FCV tobacco farmers of India and Tanzania as discover whether these two countries are experiencing the same challenges. And also to know whether the challenges common to these two countries are also common to other countries growing FCV tobacco.

Keywords: FCV tobacco, Farmers, Challenges.

1. Introduction

There is none of economic activities that are free of challenges and problems. Farming is amongst economic activities that may be faced with many challenges whereas FCV tobacco farmers are not exempt and may therefore be experiencing enormous challenges which prohibit in far reaching performance. These challenges are likely to be much more prohibitive in developing countries than elsewhere given the nature and effectiveness of the regulators and regulations governing FCV tobacco farming (Arcury and Ouandt, 2006).

Prior studies have notably identified a number of challenges that face Tobacco farmers across countries that are possibly worth a lesson to farmers in other parts of the world. Most of reported challenges include; competing needs of land for tobacco and other crops especially food crops (Cole Cole, 2004); WHO -FCTC legal framework on health issues which restrain the production of tobacco (Yang, 2002) and again which can have a substantial impact on employment and respective country's economic prospects; Excessive use of agrochemicals which are disastrous and deadly to farmers (Lecours et al., 2011; Cornwall, 1995) and worse enough it is not even communicated; negative impact of tobacco cultivation such as deforestation (Geist,1998), food insecurity (Akhter et al., 2008), ecosystem disruption (Geist, 1998; Bunnak et al., 2009); Labour intensity (Hu and Lee, (2015)); Unfavourable climate and crop diseases (see in Scholthof, (2008) and Raizs, (2004). The list is unlikely to be exhaustively reported.

On the above background the researcher is motivated to investigate the challenges, which may be facing the FCV tobacco farmers in India and Tanzania. Would the challenges for tobacco farming in these two jurisdictions be in line with the worldly bottlenecks reported above, will they be similar or indistinguishable between India and Tanzania? Currently no any study at least known to author that explores the challenges in the two countries. This study is intended to partly fill this gap and draw on some practical solutions for those challenges. The rest of this paper presents Section 2.0 Related Empirical Literature; 3.0 Data and methodology; 4.0 Results, Conclusion and Implications; 5.0 References

2. Review of Selected Empirical Literature

Tobacco being a focus in this survey is given weight by studying the challenges, which farmers and community face. Tobacco farmers do face immeasurable challenges through out their farming period and beyond. Almost all the tobacco-farming challenges are the same but differ their intensity and magnitude due to organization of farming activities on particular clusters. India and Tanzania are referred as the points of reference for the challenges in this study.

Among many challenges facing tobacco production is that, tobacco is said to be labour intensive. Growing tobacco is painstakingly labour intensive, and children are often used in the manual work of preparing the land, planting the seeds, watering, weeding, applying fertilizers and pesticides, harvesting, stringing and hanging the leaves for curing, carrying the harvested leaves from the farms to the curing barns, and then packing them (e.g. Hu and Lee, (2015), and Schmitz and Moss, (2015). The intensity and need of labours in tobacco farm differ in one hand between small-scale famers and large-scale farmers, and on the other hand between High Income Countries (HICs) and Low and Medium Income Countries (LMICs). The HIC countries have advanced mechanical applications, which are used to work with in their tobacco farms while in LMICs, are lacking the machines and skills.

As tobacco needs plenty of labours to work in the farms, labourers are not always safe while working in farms. One of the potential risks is skin attack. It is among the ill-health harm that affects many farmers in rural areas. In Kenya, 26 per cent of tobacco workers showed pesticide poisoning (Ohayo-Mitoko, 1997 and 2000), and in Malaysia, a third of 102 tobacco workers presented with 2 or more symptoms of pesticide exposure (Cornwall, 1995). Kimura et al, 2005 and Salvi et al, 2003; revealed other pesticides problems as have increased the risks of neurological and psychological conditions due to poor protection practices. Arcury and Ouandt (2006) state that the accumulation evidence of link between organophosphate exposure and psychiatric diagnosis (depression and suicidal tendencies) among agriculture support these allegations of psychiatric pesticide hazards among tobacco farmers, Akhter et al (2005), in Bangladesh report that, chemicals used to control a weed commonly found in tobacco fields were found to be polluting aquatic environments and destroying fish supplies as well as soil organisms. In all cases farming communes are wide-open to health risks caused by chemical pollution to their environments. Lecours et al, (2011) narrates that there are observable and important dermal, respiratory, neurological and psychological problems associated with tobacco farmer's exposure to agrochemicals. The Campaign for Tobacco Free Kids, (2001) comments that, pesticides used in tobacco farming may in fact are an important risk to number of adverse health conditions that can lead to death. Khan, (2010) says children, pregnant women and older people are prone to dangers of exposure. In Brazil, agrochemical in waterway is excessive adjacent to tobacco farming communities, and the further noted that water pollution was exacerbated by reduced land cover (Conclave et al, 2005; Griza et al, 2008; and Bortuluzzi, 2008).
Land cleaning for tobacco agriculture has impacted reserves in LMICs (Lecours et al, 2011). In Tanzania, for example, Sauer and Abdallah (2007) found that tobacco is still dominated by small-scale subsistence farming, highly dependent on family labour, hand tools, natural resources as well as animal drawn farming implements. In Africa, (Giest, 1999) says that, at present, nearly 90% of continental tobacco production originates from producer countries of miombo zone, an ecosystem of the southern highland bearing dry forests and woodlands (Geist, 1998). Bad enough no one is replacing annual losses on vegetation offsetting by forests increase. Geist, (1999) insists that a medium to serious degree of tobacco related deforestation exists in southern and eastern Africa (Malawi, Zambia, Zimbabwe, Tanzania, Uganda, Burundi, Ethiopia) in parts of North Africa (Morocco, Tunisia) and West Africa (Togo and Nigeria). In Kenya, tobacco related Environmental harm were reported in 1990s and are still prevailing whereby; wide spread deforestation and felling of indigenous trees for curing, soil erosion, changing of local water streams from permanent to seasonal and water pollution from agrochemical used in tobacco production (Kibwage et al, 2009).

Akhter et al (2008) reports that tobacco production is responsible for the displacement of food and other economic crops in Bangladesh. The displacement caused food shortage and other cash crops being given less attention. Giest, (1999) says that in Bangladesh, the very fertile region of Kushtia (second largest tobacco producing district of the country) had been a food surplus region, currently, tobacco occupies the best land in the district, having displaced vegetables, pulses, sugarcane and jute crops. It is the same as in the Chittagong Hills Tracts where tobacco is replacing the traditional rice and vegetables growing economics. In Bangladesh, in areas with scarce wood, farmers use fodder, rice straws and fruits trees to cure tobacco (Lecours, 2011). In Kenya, tobacco cropping is done on land previously used for food crops (Kibwage et al, 2009). The shifts have made traditional crops like cassava, millet and sweet potatoes scarce, and have caused reduction in livestock production (Lecours, 2011).

Tobacco smoking health challenge is high in China. China has 350 million active smokers and about 460 million passive smokers (Yang, 2002 and Zhu 1996). Negative health impacts of smoking have led to approximately 1 million premature deaths. If the pattern of smoking continues, by 2020 the premature death will reach 2 million (Peto and Lopez, 2001). One of the challenges is China to follow WHO-FCTC framework. There is conflict of interest between economic interests of tobacco and health concern of its People. The difficult is to decide which one to consider first.

The empirical studies discussed above are non-specific despite number of countries experiencing the similar challenges. As it is evident that agricultural challenges have different magnitude and hence different magnitudes in tackling them. These challenges which face the farmers in particular and the community at large need to be addressed scientifically to come up with sound solutions for proper decision-making. Then, the researcher in this study wanted to Identify Challenges Facing FCV Tobacco Farmers in India and Tanzania.

3. Data and Methodology

3.1 Sample Selection and Data

The cross sectional design and multi-level sampling design were adopted to conduct the study and get the total number of respondents from highly FCV tobacco producing states and regions for India and Tanzania respectively. FCV tobacco farmers were the major participants of the study. From the state and region levels then one district highly producing FCV tobacco was given priority. Then two mandals and wards were considered. Simple random sampling was used to get a unit of study whereby each mandal and ward contributed 50 respondents. The total of 400 respondents from the two nations participated (200 respondents from each country).

3.2 Model Specification

Exploratory Factor Analysis of SPSS version 23 was the major tool to analyse data and come up with conclusive results. This model was selected purposely in order to reduce the variables and to come up with few and well defined factors, which are easier to understand and interpret.

The mathematical model of this study is based as suggested here down. In the 'classical factor analysis' mathematical model, p denotes the number of variables (X_1, X_2,…,X_p) and m denotes the number of underlying factors (F_1, F_2,…,F_m). X_j is the variable represented in latent factors. Hence, this model assumes that there is m underlying factors whereby each observed variables is a linear function of these factors together with a residual variate. This model intends to reproduce the maximum correlations.

$$Xj = a_{j1}F_1 + a_{j2}F_2 + ..., a_{jm}F_m + e_j .....(i)$$

Where by j= 1, 2, 3, 4, 5…p

The factor loadings are a_{j1}, a_{j2},…,a_{jm} which denotes that a_{j1} is the factor loading of j^{th} variable on the 1st factor. The specific or unique factor is denoted by ej. The factor loadings give us an idea about how much the variable has contributed to the factor; the larger the factor loading the more the variable has contributed to that factor (Harman, 1976). Factor loadings are very similar to weights in multiple regression analysis, and they represent the strength of the correlation between the variable and the factor (Kline, 1994).

4. Results

4.1 Adequacies, Validity and Relevance of Data for Factor Analysis

Observance of normality and data, which are void of multi-collinearity, are pre-requisites of workable factor analysis in any empirical study whose analysis is based on this approach. In the same lines the researcher had to conduct some critical test for validity, reliability and relevance of the data for factor analysis. Therefore as preliminary tests, the results on bivariate correlation of variables in both countries were presented as well as the results on the Kaiser-Meyer- Olkin and Bartlett's test of sphericity.

4.2.1 Correlation Matrix of Rotated Items

This objective intended to assess perception of FCV tobacco farmers on challenges they confront on their agricultural endeavour. Several variables which are connected to challenges on production and marketing of FCV tobacco were identified and presented in correlation matrix tables 1and 8 for India and Tanzania respectively. These variables are in an ordinal form and readily in conformance with the appropriate levels of measurement. The correlation matrix is amongst the first and the foremost test that needs to be conducted before factor analysis is carried out. The correlation matrix shows the relationship between variables identified for the study.

Table 1: Correlation Matrix for India

Variables	1	2	3	4	5	6	7	8	9	10	11
1	1.000	.219	.095	-.015	-.024	.079	.050	-.109	-.109	.054	.192
2	.219	1.000	.228	-.081	.000	-.050	-.052	.076	-.010	.175	.262
3	.095	.228	1.000	.237	-.052	.074	-.024	-.026	.217	.243	.090
4	-.051	-.081	.237	1.000	.444	.054	-.144	.060	.167	.141	.002
5	-.024	.000	-.052	.444	1.000	.074	-.279	.049	.007	.009	-.025
6	.079	-.050	.074	.054	.074	1.000	.289	-.092	-.045	-.120	.033
7	.050	-.052	-.024	-.144	-.279	.289	1.000	-.114	-.086	-.199	-.059
8	-.109	.076	-.026	.060	.049	-.092	-.114	1.000	.332	-183	-.035
9	-.109	-.010	.217	.167	.007	-.045	-.086	.332	1.000	.192	-.029
10	.054	.175	.243	.141	.009	-.120	-.199	-.183	.192	1.000	.238
11	.192	.262	.090	.002	.-025	.033	-.059	-.035	-.029	.238	1.000
Determinant	0.27										

1=Do you agree that climatic condition is one of the challenges to FCV tobacco production; 2=Tobacco farming competes with food crops for land and attention; 3=There is difficult in marketing of FCV tobacco; 4=There is lack of knowledge to farm FCV tobacco; 5=There is unsuitable soils for FCV tobacco cultivation; 6=Tobacco farming is labour intensive activity;

7=There is use of child labour in FCV tobacco farms; 8=Commission agents disturb grading of FCV tobacco leafs and hike costs; 9= The tobacco board is not fulfilling its responsibility accurately and on time; 10= There is stringent tobacco regulations enforced by governments to curb production and consumption; 11= There is fatal Side effect of Pesticides to tobacco farmers.

Table 2: Correlation Matrix for Tanzania

Variables	1	2	3	4	5	6	7	8	9	10	11
1	**1.000**	-.020	.095	.221	-.181	.122	.196	.205	.068	.168	208
2	-.020	**1.000**	.437	-.252	.299	-.054	-.287	-.127	-.202	.006	0.78
3	.095	.437	**1.000**	-.105	.216	-.086	-.089	-.172	-.117	.097	.272
4	.221	-.252	-.105	**1.000**	-.161	-.092	.127	.422	.372	.162	.011
5	-.181	.229	.216	-.161	**1.000**	-.077	-.316	-.245	-.086	.093	-.101
6	.122	-.054	-.086	-.092	-.077	**1.000**	.443	-.064	.046	-.260	.183
7	.196	-.287	-.089	.127	-.316	.443	**1.000**	.119	.123	-.150	.215
8	.205	-.127	-.172	.422	-.245	-.064	.119	**1.000**	.530	.010	.090
9	.068	-.202	-.117	.372	-.086	.046	.123	.530	**1.000**	.021	.030
10	.168	.006	.097	.162	.093	-.260	-.150	.010	.021	**1.000**	.128
11	.208	.078	.272	.011	-.101	.183	.215	.090	.030	.128	**1.000**
Determinant	**0.133**										

Source: Researcher, 2017

1=Do you agree that climatic condition is one of the challenges to FCV tobacco production; 2=Tobacco farming competes with food crops for land and attention; 3=There is difficult in marketing of FCV tobacco; 4=There is lack of knowledge to farm FCV tobacco; 5=There is unsuitable soils for FCV tobacco cultivation; 6=Tobacco farming is labour intensive activity; 7=There is use of child labour in FCV tobacco farms; 8=Commission agents disturb grading of FCV tobacco leafs and hike costs; 9= The tobacco board is not fulfilling its responsibility accurately and on time; 10= There is stringent tobacco regulations enforced by governments to curb production and consumption; 11= There is fatal Side effect of Pesticides to tobacco farmers.

The correlation matrix presented in tables above for India and Tanzania in that order are useful for testing or checking the patterns of relationships between variables and whether they are within statistically acceptable ranges. It is connoted that extremely high correlation coefficients between two-variables would imply the presence of multi-collinearity problem which is in this case measured by the value of determinant of the correlation matrix (Field, 2000). It is documented that a research set data which are free from multi-collineraity will have a determinant value of greater than 0.00001(Field, 2000). Accordingly, the determinant value of Indian data is 0.270 >0.00001 whereas that of Tanzania data is 0.133>0.00001 which show that multi-collineraity is unlikely to be a problem for these data. In respects the variables are observed to correlate fairly well and none of correlation coefficient is particularly large to warrant elimination and therefore fit for factor analysis.

4.2.2 Kaiser-Meyer- Olkin (KMO) and Bartlett's Test of Sphericity

KMO measures sampling adequacy and Bartlett's test are a test for null hypothesis that the original correlation matrix is an identity matrix, which allows for factor analysis of data. As for the KMO values they always varies between 0 and 1. A value of 0 indicates that the sum of partial correlation is large relative to the sum of correlation, indicating diffusion in the pattern of correlation henceforth factor analysis is likely to be inappropriate. A value close to 1 indicates that the pattern of correlations is relatively compact and so factor analysis should yield distinct and reliable factors. This follows Kaiser (1974) who recommends acceptance of values greater than 0.5 (value below this should lead you to either collect more data or rethink which variable to include).

Table 3 below presents the results for KMO measure of sampling adequacy and Bartlett's test of sphericity for India and Tanzania. The KMO values are 0.50 and 0.62 for Tanzania and India in that order that show that the sampling is adequate enough for factor analysis. Furthermore the Bartlett's measure tests confirm that the null hypotheses that original correlation matrix is an identity matrix for both India and Tanzania. This is in accordance with the results as presented in the table below which show statistical significant for India where p=0.000<5% alpha, and for Tanzania p=0.000<5% alpha. Both results confirm that the data and sample is adequate and therefore factor analysis can be carried out.

Table 3: KMO and Bartlett's Test for India and Tanzania

		India	Tanzania
Kaiser-Meyer- Olkin Sampling Adequacy		0.501	0.617
Bartlett's Test of Sphericity:	**Chi-Square**	254.672	391.816
	Df	55	55
	Sig	.000	.000
Source: Researcher, 2017			

4.3 Factor Analysis Results

After statistical confirmation of data and sample for factor analysis as presented in the prior section (4.2) this section puts forward the empirical results from the further factors analysis. Accordingly, this part shows factor extraction and total variation explained as well as rotated factors and respective commonalities.

4.3.1 Factor Extraction

Table 4 and 5 presents the lists of eigenvalues associated with each linear component (factor) before extraction and after extraction for India and Tanzania respectively. The eigenvalues associated with each factor represent the variance explained by a particular linear component and SPSS displays/calculates the eigenvalues in terms of percentage of variance explained. All the factors with eigenvalues greater than 1 in our case – table 4 (India) has five factors and table 5 (Tanzania) have four factors. These factors are taken on second process and extraction sums of squared Loadings.

These factors are all the same as before extraction except that only those values less than 1 are ignored. The rotation sums of squared loadings; the eigenvalues of factors after rotation are displayed. The rotation optimizes the factor structure and consequence for these data is that the relative importance of the five factors (for India) and four factors (for Tanzania) are equalized. Before rotation, for India, factor 1 accounted for considerably more variance than the remaining four (17.294 per cent, compared to 15.326 per cent, 12.265 per cent, 11.463 per cent and 9.952 per cent). However after extraction it accounts for only 14.051 per cent of variance (compared to 13.837 per cent, 13.689 per cent, 12.669 per cent and 12.055 per cent). The five factors are equalized. The same for Tanzania; before rotation, factor 1 accounted for 22.734 per cent (compared to 15.336 per cent, 14.725 per cent and 9.751 per cent). However after extraction it accounted for 17.110 per cent, of variance (compared to 16.356 per cent, 14.837 per cent and 14.243 per cent. The four factors are equalized.

Table 4: Total Variance Explained for India

Component	**Initial Eigenvalue**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**Variance (%)**	**Cumm. %**	**Total**	**Variance (%)**	**Cumm. %**	**Total**	**Variance (%)**	**Cumm. %**
1	1.902	17.294	17.294	**1.902**	17.294	17.294	**1.546**	14.051	14.051
2	1.686	15.326	32.619	**1.686**	15.326	32.619	**1.522**	13.837	27.888
3	1.349	12.265	44.885	**1.349**	12.265	44.885	**1.506**	13.689	41.577
4	1.261	11.463	56.348	**1.261**	11.463	56.348	**1.394**	12.669	54.245
5	1.095	9.952	66.301	**1.095**	9.952	66.301	**1.326**	12.055	66.301
6	.834	7.580	73.880						
7	.755	6.868	80.748						
8	.651	5.922	86.670						
9	.619	5.631	92.301						
10	.462	4.196	96.497						
11	.385	3.503	100.000						

Source: Researcher, 2017

1=Do you agree that climatic condition is one of the challenges to FCV tobacco production; 2=Tobacco farming competes with food crops for land and attention; 3=There is difficult in marketing of FCV tobacco; 4=There is lack of knowledge to

farm FCV tobacco; 5=There is unsuitable soils for FCV tobacco cultivation; 6=Tobacco farming is labour intensive activity; 7=There is use of child labour in FCV tobacco farms; 8=Commission agents disturb grading of FCV tobacco leafs and hike costs; 9= The tobacco board is not fulfilling its responsibility accurately and on time; 10= There is stringent tobacco regulations enforced by governments to curb production and consumption; 11= There is fatal Side effect of Pesticides to tobacco farmers.

Table 5: Total Variance Explained for Tanzania

Component	Initial Eigen value			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumm. %	Total	Variance (%)	Cumm. %	Total	Variance (%)	Cumm. %
1	2.501	22.734	22.734	**2.501**	22.734	22.734	**1.882**	17.110	17.110
2	1.687	15.336	38.069	**1.687**	15.336	38.069	**1.799**	16.356	33.466
3	1.620	14.725	52.795	**1.620**	14.725	52.795	**1.632**	14.837	48.303
4	1.073	9.751	62.546	**1.073**	9.751	62.546	**1.567**	14.243	62.546
5	.841	7.644	70.190						
6	.782	7.108	77.298						
7	.656	5.964	83.262						
8	.531	4.831	88.093						
9	.518	4.710	92.802						
10	.454	4.131	96.934						
11	.337	3.066	100.000						

Source: Researcher, 2017

1=Do you agree that climatic condition is one of the challenges to FCV tobacco production; 2=Tobacco farming competes with food crops for land and attention; 3=There is difficult in marketing of FCV tobacco; 4=There is lack of knowledge to farm FCV tobacco; 5=There is unsuitable soils for FCV tobacco cultivation; 6=Tobacco farming is labour intensive activity; 7=There is use of child labour in FCV tobacco farms; 8=Commission agents disturb grading of FCV tobacco leafs and hike costs; 9= The tobacco board is not fulfilling its responsibility accurately and on time; 10= There is stringent tobacco regulations enforced by governments to curb production and consumption; 11= There is fatal Side effect of Pesticides to tobacco farmers.

4.3.2 Rotated Component Matrix and Communalities

Table 6 presents the results on communalities factors and components after extraction. The principal component analysis works on the initial assumption that all variances are common; therefore, before extraction the communalities are all 1. The rotated component matrix also known as rotated factor matrix in factor analysis is a matrix of the factor loadings for each variable on to each factor. The researcher considered factors with commonality value of above 0.5 were considered for discussion. On contrary factors with a commonality value of less than 0.5 were not considered in this case.

Table 6: Rotated Component Matrix and Communalities for India and Tanzania

Variable	Components and Communalities India						Components and Communalities Tanzania				
	Production Constraints	Climate Change and Land shortage	Tobacco Laws and TBI Inefficacy	Labour Intensity and Child Labour	Price Fluctuation	Communalities	Price Fluctuation	Attention and Marketing Problems	Risks of Chemical Use	Regulations and Labour Problems	Communalities
1	.010	**.657**	-.064	.190	-.128	.488	.145	-.119	**.687**	.080	**.514**
2	-.076	**.740**	.128	-.094	.181	**.612**	-.122	**.804**	.043	-.003	**.663**
3	.062	.191	**.737**	.180	.056	**.620**	-.108	**.700**	.390	-.057	**.657**
4	**.763**	-.118	.339	.065	.038	**.716**	**.636**	-.265	.192	-.243	**570**
5	**.876**	.031	-.149	-.079	.021	**.797**	-.102	**.601**	-.279	-.138	.469
6	.197	.065	.024	**.797**	-.068	**.683**	-.072	-.085	.228	**.772**	**.661**

7	-.380	-.077	-.016	**.718**	-.066	**.670**	.069	-.398	.418	**.569**	**.662**
8	.053	.023	-.096	-.086	**.905**	**.839**	**.835**	-.103	.096	.006	**.718**
9	.015	-.183	**.572**	-.059	**.580**	**.701**	**.843**	-.024	-.037	.109	**.725**
10	.034	.174	**.669**	-.369	-.314	**.714**	-.017	-.030	.392	**-.719**	**.672**
11	.005	**.645**	.143	-.090	-.090	.453	.031	.199	**.706**	.172	**.569**

Source: Researcher, 2017

1=Do you agree that climatic condition is one of the challenges to FCV tobacco production; 2=Tobacco farming competes with food crops for land and attention; 3=There is difficult in marketing of FCV tobacco; 4=There is lack of knowledge to farm FCV tobacco; 5=There is unsuitable soils for FCV tobacco cultivation; 6=Tobacco farming is labour intensive activity; 7=There is use of child labour in FCV tobacco farms; 8=Commission agents disturb grading of FCV tobacco leafs and hike costs; 9= The tobacco board is not fulfilling its responsibility accurately and on time; 10= There is stringent tobacco regulations enforced by governments to curb production and consumption; 11= There is fatal Side effect of Pesticides to tobacco farmers.

4.4 Summary, Conclusion and Implications

This objective (RO 5) aimed to explore or identify the challenges facing FCV tobacco farmers in India and Tanzania. The researcher applied component factor analysis in order to achieve this objective. More specifically, a principal component analysis was conducted on the 39 items with orthogonal rotation (varimax) and Kaiser–Meyer–Olkin measure was applied to verify the sampling adequacy for the analysis, KMO = .62; 0.51 for India and Tanzania respectively which was observably well above the acceptable limit of 0.5. Bartlett's test of sphericity ***χ2 = 254.672; d.f = 55; p-value = 0.000*** for India and ***χ2 = 391.816; df = 55; p-value = 0.000*** for Tanzania for which both results indicated that correlations between items were sufficiently large for PCA.

The factor loadings results evidence that there are different challenges facing FCV tobacco farmers in India and Tanzania. At first, the researcher exposed eleven possible challenges to both sample groups of India and Tanzania. After a through data collection and scientific analysis (Exploratory Factor Analysis) the results showed that in India there are five new variables (component loadings) which are needed for further analysis, while in Tanzania there were four new variables (component loadings).

For India in particular, the new variables (which are precedents of the original eleven variables) are; component 1 represents a Production Constraints, component 2 Attention and Climatic Problems, component 3 Tobacco Laws and TBI Inefficacy, component 4 Labour Intensity and Child Labour, and component 5 Price Fluctuation. Having all these new factors, researcher is supposed to make a questionnaires basing on these and come up with analytical tools that could measure hypotheses in order to inference the results. Correspondingly, for Tanzania FCV tobacco farmers, like India, farmers were imposed to eleven challenges that were possibly counteracting there farming activities. After a thorough data collection and factoring them through EFA, the factors loaded on four components. These four components are the ones that are subject to further the analysis. The new factors obtained after analyses are; component 1 represents a Price fluctuation, component 2 Attention and Marketing Problems, component 3 Risks of Chemical Use, and component 4 Regulations and Labour Problems.

When comparing the factors for India and Tanzania, the observation shows that there is diversity of challenges. Factor 1 for India and Tanzania are Production Constraints and Price Fluctuation. They seem to be representing two diverse issues. When back to field again farmers are to be asked about their feelings about these new factors. The second components for both countries carry less equal dimensions, for India it is attention and climatic problems and Tanzania is attention and marketing problems. On attention it was observed to mostly dwell on land and food crops, that land for cultivation is a problem and yet most of the ties farmers are undecided whether to crop FCV tobacco or some food crops for family livelihood. This factors needs to be further analysed. Factor 3 is Tobacco Laws and TBI Inefficacy for India and Risks of Chemical Use. They have different dimensions as Indian are concerned with stringency of tobacco production and consumption, while in Tanzania the issue is on risks associated with FCV tobacco chemical use. WHO-FCTC has its root on saving people's lives that are endangered by tobacco use (whether direct use or being second hand smoker). When further research is due on challenges facing these farmers, then these two are among points of exist. Component 4 for both India and Tanzania are Labour Intensity and Child Labour, and Regulations and Labour Problems respectively; means, the factors are focusing on labour by identifying that tobacco farming is labour intensive and yet they use cheap labour like children. Tobacco production and consumption regulations are also crucial in day-to-day farming. One could check the intensity of work and see how cropping mechanization could help to reduce human dependence on farm activities. This would solve two problems at a time; one, labour intensity in tobacco farms and, second, child use in tobacco farms. In other terms, these two factors of two republics,

as they are the same, solutions to them could be checked if possible to do a joint counter-attack. Lastly, India has the fifth factor, which is Price Fluctuation, the same as the very first factor of Tanzania. The research confirms that, the sample studied from India and Tanzania has experienced unstable prices of FCV tobacco during their 2014-2015 season. Unstable prices bring instability to so many plans as most of tobacco and non-tobacco activities depend on financial plan from FCV tobacco.

Based on the results and discussion there on study concludes that while the main challenges facing the FCV tobacco farmers in India are mainly five namely; Production constraints; Attention and climatic problems; Tobacco Laws and TBI Inefficacy; Labour Intensity and child labour and Price Fluctuation; the challenges for Tanzanian farmers mainly four which include; Price fluctuation; Attention and marketing problems; Risks of Chemical Use and Regulations and Labour Problems. Of all the challenges two challenges namely; Attention and climatic problems; Price fluctuation were observed to be common for both India and Tanzania context.

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