

## An Analysis of Social Ties: Coffee Value Chain in Uganda

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### ABSTRACT

*Uganda is among the worlds' largest coffee producers and exporters. Coffee production in Uganda has been a developing process over the last 60 years, with various players from the garden, home drying, factories, stores and exporters, and lastly at tables. This study investigates the nature and the different types of ties used for coffee development in Uganda. These ties form what is referred to as value chain which herein has been very paramount in the production and trade of coffee in Uganda. The study consisted of both qualitative and quantitative studies to find out the relationships existing between the different types of ties used in the coffee processes. The research used mutually regression and correlation approaches to analyze field data collected from the coffee farmer families, buyers and the regulators in Uganda. The findings illustrate a statistically significant relationship between family ties and coffee development, farm and firm ties, friendship ties and coffee development. The results established that weak ties are more beneficial than strong ties bearing in mind the development of coffee farming and production than the strong ties in Uganda. Further research needs to be directed on these networks in the coffee value chain, and appropriate solutions for its competitiveness and sector growth. Understanding connections which our study referred to as ties is very vital for the success of any business of sorts.*

**Keywords:** Coffee production, competitiveness, ties, trade, value chain.

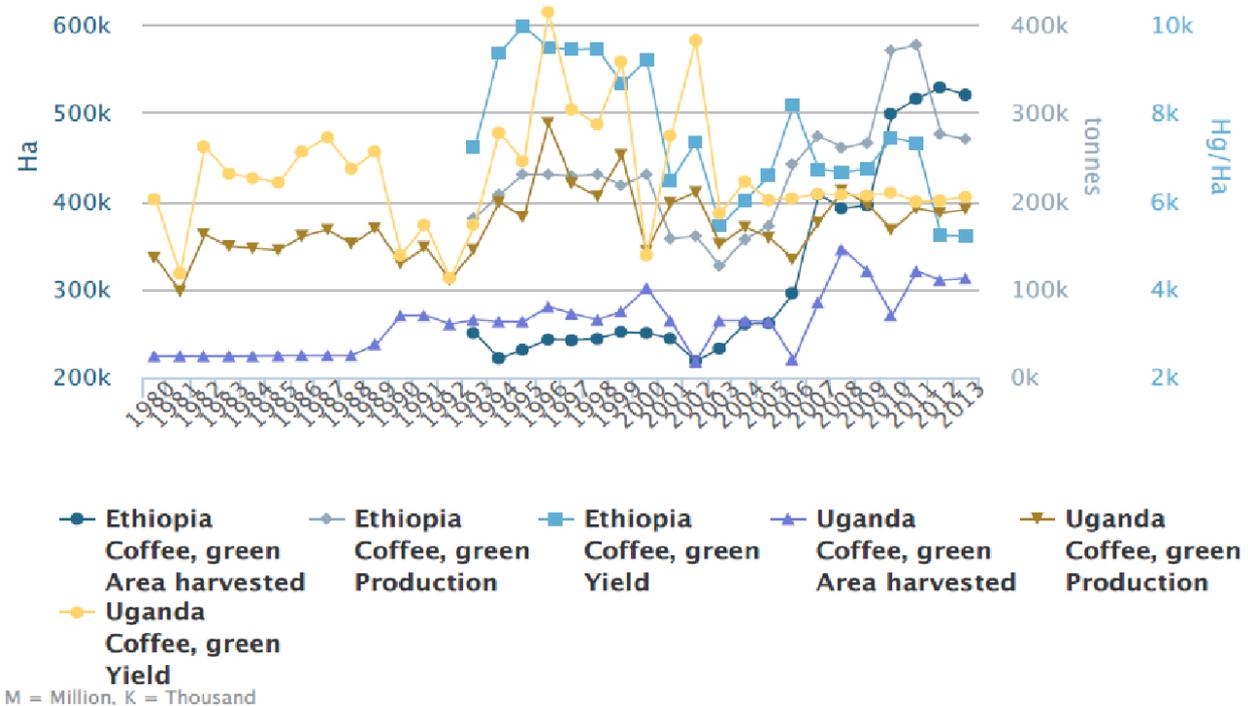
**JEL Code:** A10, A14, P01

### INTRODUCTION:

Coffee production has constantly played a vital contribution in the economy of Uganda (Baffes, 2006), (Asiimwe, 2013), (Bamwesigye & Pomazalová, 2015). Coffee production and trade contributes over 25% of foreign exchange income to the country and above that, 60% of the entire agricultural contribution to the Growth Domestic Product (GDP) as discussed by (Bamwesigye and Pomazalová, 2015).

According to (Verter et al. 2015), (Bamwesigye, Pomazalová, and Tamáš, 2015), trends in both coffee production and export in the country suggest that coffee as an agricultural commodity is paramount to the people and economy of Uganda. Since colonial times dating back to 1940, coffee was introduced in the country. Since the time, many changes have also taken place such as:

- Increase on the size of coffee farms in terms of land (Fig 1)
- Increase in produced quantity (Green beans) (Fig 1 & 2)
- Increase in export quantity (Fig 2 & 3)
- Increase in the number of people employed in the coffee sub-sector.



**Fig 1: Coffee production trend in Uganda and Ethiopia**

Source: Data from (FAOSTAT, 2018) (Authors analysis)

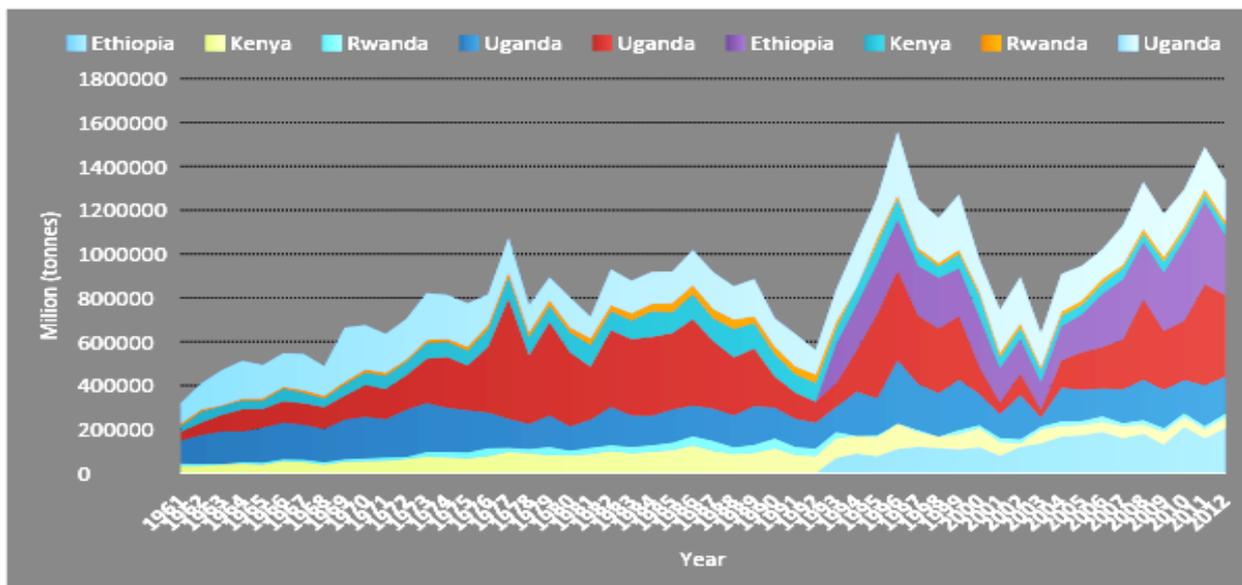
According to the reports published by (The International Coffee Organization, 2018) (ICO), global coffee production in 2016/2017 has continued to be stable. This production accounts for close to 152 million bags with a record increase in Arabica production of 93.5 million bags with plentiful harvest from Brazil, Colombia, Honduras and Uganda among others. However, Robusta production and supply are marked by uncertainty. Correspondingly, the Coffee Trade Statistics ending 2016 suggested an increase in both Arabica and Robusta coffee exports marking significant increase at the world market, i.e. exports of Arabica coffee added up to 71.93 million bags in 2016 compared to 69.21 million bags for 2015 (Appendices I & II).

Similarly, the reports published by (The International Coffee Organization, 2018) show Brazil has been leading in coffee production and export for Arabica and Robusta followed by Indonesia at the global level. On the other hand, Uganda leads Ethiopia and Kenya respectively for African block (Fig 1 below). Although Uganda and Ethiopia have been closely competing with each other for the lead in African production and export.

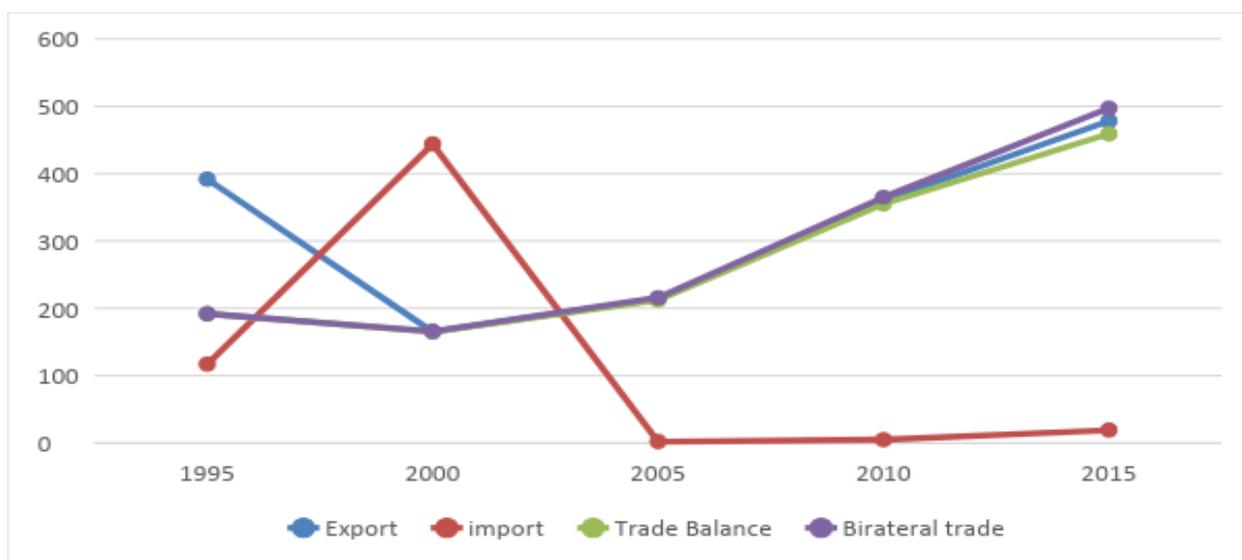
(Baffes, 2006) asserted that coffee is the largest export commodity for Uganda. While assessing the export potential, he noted that amidst other subsector in the agriculture sector such as cotton or sugar, coffee is still un-realized potential for Uganda. None the less, coffee trade balance, exports and bilateral trade have been since 2000's on the increase as well as small margin of coffee, tea and related products imported into the country (Baffes, 2006), (Bamwesigye & Pomazalová, 2015).

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At present, many large scale farmers are coming up and the sector is still growing with over 5 million people engaged in coffee farming, production and trade related activities, which form the main stream chain referred herein as coffee value chain.



**Fig 2: Coffee Production, and Export Quantity and value in Africa’s large producers and exporters**  
Data from (FAOSTAT, 2018) (Authors analysis)



**Fig 3: Uganda's Trade performance in Coffee, tea, and spices (USD Millions)**  
Data from (The International Trade Centre, 2017) (Authors analysis)

Bamwesigye & Pomazalová, (2015) noted that the farmers and buyers are the very ones who form the coffee value chain that is facilitated by both weak and strong ties, which bridge the gaps among the farmers, buyers, coffee producer organizations, exporters, and the regulator. This value chain is composed of over 5 million people. They are in one way or the other connected and hence see seeds become plants, plants bear beans, beans ripe and harvested, dried and off to the markets and processing for export.

Our study focuses on the role which social ties and relationships play in the development of coffee value chain in Uganda. This is because Uganda, like other developing countries, has much of its population employed in the agriculture sector (Baffes, 2006). Therefore, this study will play a significant part in ascertaining whether such ties exist and their importance in the coffee sector.

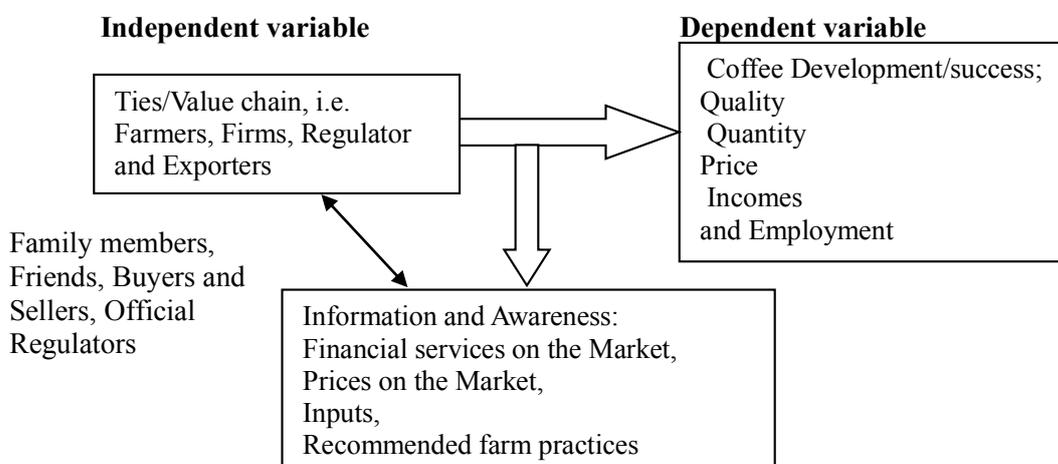
**RELATED LITERATURE:**

**Value chain and its ties:**

This study identifies the social ties as factors that affect production and trade in the sub sector to fill the missing gaps on prices, quality and quantity. This can either hinder or support competitiveness and development. The hypothesis is that the success of coffee value chain in Uganda is strongly linked with the

ties among different individuals and companies involved in coffee production and trade, which are referred as social ties (Fig 3).

(Granovetter 1992) stressed the fact that these ties play an important role in society and its structures. They also play an important role in the coffee value chain, i.e. strongly linking the role played by both family members and also different ties in the coffee value chain from acquisition of land, seeds and seedlings, information, planting and harvesting (Baffes, 2006). This is because the families feel that they owe each other an obligation, i.e. social capital. Bearing in mind knowledge, environment and organizational concepts, the role of humans, social, and cultural capital (Bourdieu, 1986); (Coleman, 1988), they emphasized the role played by social ties in a society.



**Fig 3: Conceptual Framework**

**Source:** Bamwesigye Dastan (2016)

(Montgomery 1994) contended that weak ties have a strong relationship with increased societal collaboration. He noted that weak ties are a source of new information, since it removes individuals from their available and immediate networks.

Fig 3 illustrates the role of ties in the coffee value chain as the means of exchanging information on prices, inputs, practices, quality and quantities both demanded or to be supplied.

This would also have an implication on this study, in that the weak ties play better in societal relationships and development. More so, a study by (Mcdonald & Elder, 2006) on employment search found out, that strong ties are not useful for most job searches, but claim that categories of strong and weak networks are sometimes too simplistic to measure or determine.

**METHODOLOGY AND DATA:**

The study consists of both qualitative and quantitative examination to establish the relationships existing between the different types of ties used in the coffee processes of coffee production and trade development in Uganda and the East African Region. A mixture of the two methods is the procedural basis for empirical research (Maxwell, 2005), (Creswell, 2009).

According to (Creswell, 2013), qualitative study methods include key main elements of: narrative research, grounded theory, ethnography and case study. He further points out theoretical frameworks, standards and ethics that help qualitative research i.e. the investigation comprised of interviews which employed interview guides as data collection tools, focus group discussions which will also employ focus group discussion guides as data collection tools as well as document reviewing which will also employ a document checklist as a data collection tool. Qualitative methods like interviews are advantageous because they offer the researcher ampler space for further questions, which would otherwise need more explanations and this is done through probing.

A descriptive as well as correlation analysis was carried out and assisted to establish and explain the relationships. The essential justification overdue of mixed methods research is that it helps the study to learn more about the research topic (Creswell, 2009). The mutual strengths of qualitative research with the fortes of quantitative research approach while pay off at the same time for the weaknesses of each method. The population of the study included the staff from producer organizations, farmers, Uganda Coffee

Development Authority (UCDA) among others.

A population of 150 respondents was used in the study and only those who had applicable knowledge were interviewed.

Purposive sampling technique was used in this study to get to respondents.

A total of 65 respondents participated in the study to answer question regarding coffee development in Uganda since they represent the large chain of the coffee value chain. The respondents were involved in coffee farming, production and trade.

**Questions included;**

- demographic characteristics such as age, sex, and level of education
- Involvement in coffee farming activities
- Whether there ties/ connections between the different players in coffee production and trade.
- If these ties are important or not in coffee development.

Open ended question; an opinion on the role of ties in the coffee sector was equally asked to all the participants.

The respondents who were acquainted about coffee farming, were obviously involved in this research. The data collected were entered in data analysis software known as Statistical Package for Social Scientists (SPSS) for analysis.

**Results:**

This chapter presents the findings as well as the understandings of frequency tables, graphs, figures and text. The study endeavored to capture contextual information of the respondents in order to determine the demographic characteristics of the people who engage in coffee production ranging from planting, harvesting, processing, selling and trading.

**Table 1: Age**

	<b>Age</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Valid</b>	18-30	10	15.4
	31-40	14	21.5
	41-50	12	18.5
	51 +	29	44.6
	<b>Total</b>	<b>65</b>	<b>100.0</b>

44.6 % of the respondents were aged above 50 years, followed by 21.5 % who were aged between 30-40 years, whereas 18.5 % were aged between 41-50 years and 15.4 % were aged between 18-30 years (Table 1). The outcomes above demonstrate that most coffee farmers and processors/dealers/traders are in their progressive age. 61.5 % were males while 38.5 % were females.

The study recognized that coffee farming ties support coffee development in Uganda, responses of 66.3% agreed to the impression that ties existed, though 26.2% were impartial and 7.7% thought that ties in coffee farming and production were not obtainable in the East African region. The results confirm that ties do exist but their level of importance towards coffee development needed to be ascertained as discussed in the preceding sections.

Respondents were examined which forms of ties they belonged to and 49.2% discovered that they belonged to business or farm ties, followed by 41.5% who held they belonged to friendship ties and only 9.2 % sided with family ties. The outcomes are a confirmation family ties are not prevalent in the East Africa region in as far as coffee farming and production is concerned but farm bonds then referred to business ties are more useful in coffee farming than the other ties.

**Correlation Analysis between ties and coffee development:**

Table 2 shows that there is a slight negative relationship between family ties/strong ties and coffee development given by Pearson’s correlation coefficient of -0.038. The relationship is nevertheless not statistically significant at 95 % confidence level (2-tailed) as the p-value is greater than 0.05 (=0.763). The table further shows that there is a statistically significant negative correlation between firm to farm

ties/farm to firm ties (weak ties) and coffee development given by Pearson’s correlation coefficient of -0.295\*. The relationship is statistically significant at 95% confidence level (2-tailed) as the p-value is less than 0.05 (=0.017).

**Table 2: Analysis between ties and coffee development**

Correlations		
		Coffee development in Uganda
Coffee development in Uganda	Pearson Correlation	1
	Sig. (2-tailed)	
	N	65
Family ties/strong ties	Pearson Correlation	-.038
	Sig. (2-tailed)	.763
	N	65
Friendship tie/ strong ties	Pearson Correlation	-.222
	Sig. (2-tailed)	.076
	N	65
Firm to farm/farm to firm ties	Pearson Correlation	-.295*
	Sig. (2-tailed)	.017
	N	65

\* Correlation is significant at the 0.05 level (2-tailed)

**Regression Analysis between ties and coffee development in Uganda:**

The hypotheses were verified using multiple linear regression analysis. The justifications for using multiple linear regression analysis were that this was a prediction study with many variables and multiple linear regression analysis provides net effects and explanatory power in form of Adjusted R square. Level of significance was set at less than or equal to 0.05. The model summary is presented in table 3 below.

**Table 3: Model Summary**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.380 <sup>a</sup>	.144	.102	1.12901
a. Predictors: (Constant), Firm to farm ties, Friendship tie/ weak ties, Family ties/ Strong ties				

**Table 4: Analysis of Variance (ANOVA)**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.108	3	4.369	3.428	.023 <sup>b</sup>
	Residual	77.754	61	1.275		
	<b>Total</b>	<b>90.862</b>	<b>64</b>			
a. Dependent Variable: Coffee development in Uganda						
b. Predictors: (Constant), Firm to farm/ farm to firm ties, Friendship tie/ Strong ties, Family ties/ Strong ties						

The model summary (table 3) shows that the coefficient of determination (Adjusted R Square) is 0.102. This suggests that this model accounts for 10.6 % of the variance in coffee development in Uganda. This could be credited to the fact that coffee development in Uganda and near regions has far more factors that influence it than what the study took up part.

In defining whether a model is significant, the verdict rule is that the calculated p-value must be less than or equal to 0.05. P-value of 0.023 is less than 0.05, the model was established to be statistically significant (Table 4) (F=3.482, df= 3, p<0.05 (=0.023)). This statistically significant model means that at least one of the predictor variables (Family ties, friendship ties and farm to firm ties) has a significant influence or

effect on the dependent variable i.e. Coffee development.

To determine which of the predictor variables were significant; the investigation examined the standardized beta coefficients, the t values and significance values which provide rough indication of the impact of each predictor of variable as offered in table 5 below.

**Table 5: Regression coefficients**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.782	.808		5.921	.000
	Family ties	-.050	.221	-.027	-.226	.822
	Friendship ties	-.328	.162	-.242	-2.021	.048
	Firm to farm ties	-.257	.101	-.304	-2.535	.014

a. Dependent Variable: Coffee development in Uganda

The verdict rule for multi linear regression is that the t value must not be close to 0 and the p-value must be less than or equal to 0.05. The results illustrate that the p-values for the constant, and p-value greater than 0.05. Friendship ties and Farm to farm ties are each less than 0.05 and the t values not close to zero (0). This shows that the Constant, Friendship ties, and Farm to farm ties have no significant effect on Coffee development in Uganda.

**Hypothesis 1:**

Although family ties/strong ties exist, have a negative influence on Coffee development in Uganda. The research outcomes also show that there is a statistically significant association between family ties and coffee development in Uganda ( $r = -0.038$ ,  $p\text{-value} < 0.025$ ). Hypothesis 2: friendship ties/strong ties have a negative influence on Coffee development in Uganda. The findings show that there is a statistically significant affiliation between friendship ties and coffee development ( $r = -0.222$ ,  $p\text{-value} < 0.05$  ( $=0.048$ )). Results from our regression analysis further indicate that friendship ties have a significant negative effect on coffee development in Uganda ( $\beta = -0.242$ ,  $t = -2.021$ ,  $p < 0.05$  ( $=0.048$ )). This means that there is a negative causation implied negative relationship between friendship ties and coffee development.

The qualitative part which consisted of open ended questions where some family members expressed how the help of the household itself is very vital. Furthermore, the neighbors and relatives also play an important job in terms of information on prices of coffee, security of coffee both before harvest and while drying since there are many cases of theft of drying coffee in peoples' compounds. The neighbors keep an eye on the next households' coffee. The same response was obtained from firms, regulators, and exporters who confessed that these ties are very helpful for both quality coffee, and prices, and especially on information of "who has quality coffee? what is the price?"

**DISCUSSION AND CONCLUSION:**

These findings agree with (Goodman & Redclift, 1991), who noted that there are direct agricultural ties which are based on face-to-face relationships between producers and consumers and that buyers tend to utilize more of weak ties to access production than strong ties. (Gereffi & Korzeniewicz, 1994), (Gereffi, 2005), (Gereffi & Joonkoo, 2012), (Gereffi, 2014) also noted that networks recorded realization of so many businesses and confirmation of how the value chain works especially if characterized by the development of buyer-driven commodity chains and governance as is in coffee.

Inclusively, the results are in track with arguments made by (Granovetter, 1973), (Granovetter, 1992), (Montgomery, 1994), (Granovetter, 2000) who said that many actors in groups benefit from one another in various ways, he noted that there is always struggle at decision making level amongst so many other unwanted manners that may come up. This is not different from some of the experiences of farmers or the coffee buyers. This is because they also encountered problems especially with misinformation on prices or quality of coffee.

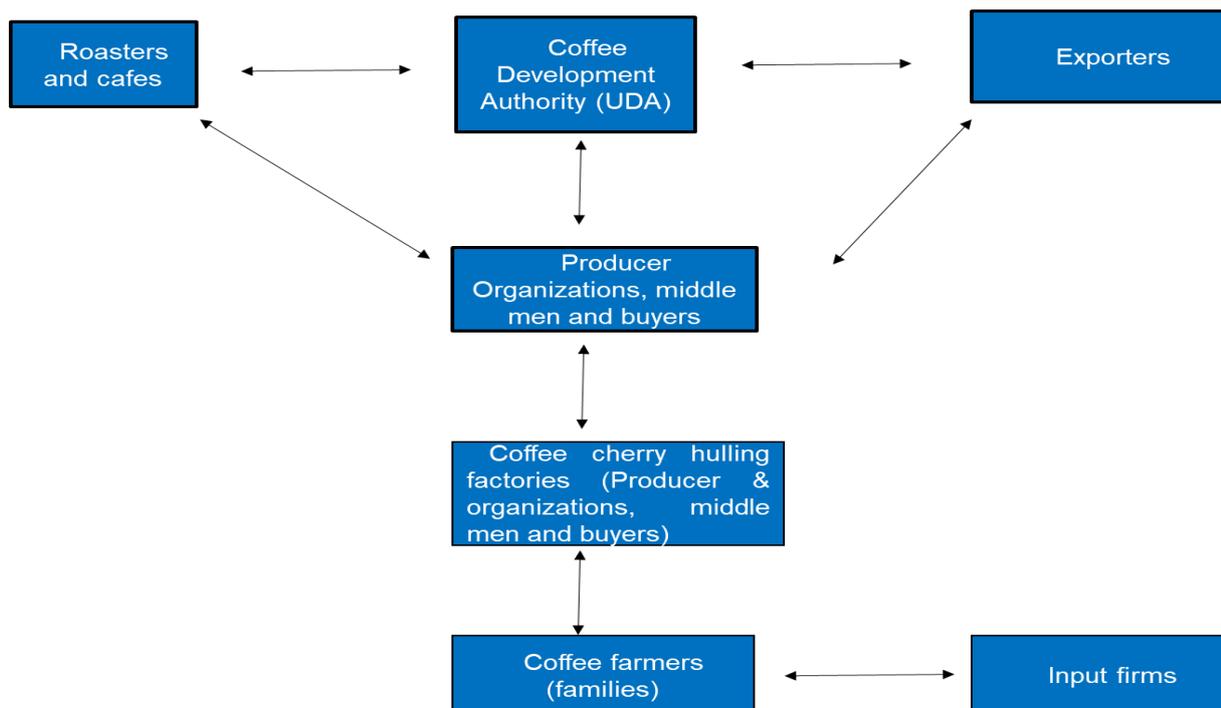


Fig 4: Organization of coffee value chain (Own analysis)

The outcomes confirmed that weak ties are more useful than strong ties considering the development of coffee farming and production than the strong ties in Uganda.

The achievement of the coffee development in Uganda and the region is strongly associated to the connections between different individuals and companies (Fig 4), referred to as social ties, hence the main hypothesis confirmed. We used the term ties to mean the network in the entire production of coffee i.e. from the farm to middle men, coffee bean hulling factories and processing organizations/buyers, to exporters, roasting cafes and ofcourse the regulator (UDA) who certifies exporters and quality right from drying by middle men and hullers.

The study concludes that friendship ties as well as farm to firm negatively affect coffee development in the East African region. Therefore, this implies that the existing types of ties in coffee farming, harvesting and processing even though not doing enough, are paramount to the value chain.

The Ministry of Agriculture needs to come in and support the existing ties with inputs in all forms like information and knowledge sharing, farming tools and technology, and financial support. These ties can create, and drive towards effectiveness in coffee farming, and processing for higher quality coffee production hence competitive on the international market.

Further research needs to be directed on the network in the coffee subsector, and appropriate solutions for its competitiveness and sector growth. Understanding connection which our study referred to as *TIES* is very vital for the success of any business of sorts.

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