

## Entrepreneurial skills and farming performance: Implications for improving banana farming in Sri Lanka

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### Abstract

Banana farming in Sri Lanka has been identified as a potential alternative sub-sector to make dynamism in the rural economy. However, this sector still remains predominantly traditional in most parts of the country. As such, it was identified that the attention of researchers should be granted for collecting evidence-based suggestions to make this sector more dynamic in the economy. This paper examined the relationship between entrepreneurial skills of banana farmers and their farmer performance using entrepreneurial skill variables of farmers and farmer performance variables namely profitability, financial performance, marketing orientation and productivity. Finally, the study found that collective action and cooperation, readiness to change and innovativeness, and visionary and profit oriented nature had a significant association with the farmer performance factors. The strongest relationships remain between collective action and cooperation, readiness to change, innovativeness and the farm productivity. Therefore, it is recommended to use these variables as the policy variables that can activate this alternative subsector of the rural economy.

**Keywords:** Entrepreneurial skills, farming performance, banana cultivation, Sri Lanka

### Introduction

This paper attempts to describe the nature of entrepreneurial skills and examines the association between entrepreneurship skills and farm level performance of small scale banana farmers in Sri Lanka. In developing countries, many traditional and small scale farmers attempt to convert their farms into commercial farming and cash cropping. The entrepreneurship is one of the key factors that determine the success of this transformation process. If the farmers equipped with necessary entrepreneurial skills, this process can be expedited with more and more lands are

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being allocated to the banana sub-sector so that it will contribute to the GNP and employment of the country significantly. Thus, in order to convert the traditional farmers into such commercial entrepreneurs they must be trained with new skills to engage in farming more competitively. In a word, to build up agro-entrepreneurs is the need for the success of this process.

In Sri Lanka, banana production provides an alternative avenue to add to GNP, create employment and uplift the livelihood of people in the rural areas. According to available statistics, 56216 ha of land in the country are under banana cultivation and it produces about 44177 bunches (,000) of annual production (DCS, 2015). However, Kudagamage, Chandrasiri, and Razmy (2002) highlighted a declining trend in the productivity of banana in relation to land.

Sri Lanka government policies and strategies of agricultural development have focused on crop diversification and facilitating the creation of self-supporting, self-reliant and prosperous transformation of the rural sector subsistence agriculture into profitable commercial ventures. Under the programs initiated with that purpose, the farmers are encouraged for banana farming in some areas of the country. 'Udawalawe' irrigation scheme in South Sri Lanka is one of these areas. The Government has taken policy steps in transforming conventional agricultural production into commercial cash crop production. In this irrigation scheme, banana crop was initially cultivated in the lands where the water supply was sufficiently available for the rice cultivation. The process of agricultural modernization in the area has been an important influence to increase the farm productivity, increase income of people and their living standards. Above all, in the banana development process, the entrepreneurship can be hypothesized as the most important factor that use achieves the objective. Some authors also agree with this idea and mention that the farmers should be strengthened with entrepreneurship skills in order to perform better in their ventures (McElwee, 2006). A substantial amount of banana harvest is wasted due to the lack of post harvest management skills. It has been estimated that the postharvest loss of banana is about 28.5% from the farm gate to the retailer (Wasala, et al., 2014 p.087). Information asymmetries or gaps are also hypothesized to be obstacles to this post harvest wastage. Considering all these developments, this study focuses on the analysis of the association between entrepreneurship skills and farm level performance of small scale banana farmers in Sri Lanka.

#### **Literature review: Importance of entrepreneurial skills of farmers**

It is argued that implanting entrepreneurial skills in people increases their productivity and also the income. The theoretical basis for this argument is strongly provided by the human capital theory initiated by Schultz (1961) and many others developed that theory after Schultz. In short, the human capital theory says that since education and training embedded in humans increase their productivity, such people can be considered as valuable capital assets that increases the productivity similarly to physical capital assets (Schultz, 1961). As such, having entrepreneurial and other necessary skills in farmers should necessarily increase their productivity than those who are not having such skills.

However, the human capital theory does not say that what kind of skills the different kind of entrepreneurs including farmers should have. This problem should be addressed only by empirical studies conducted targeting on the particularly sector or sub-sector crop which is in question. Again the empirical studies which have been directly focused on the effect of entrepreneurial skills of farmers on their farmer and farming performance are infrequent. However, the studies focused on the effects of entrepreneurial skills of farmers on their performance are to a certain extent available in both developed and developing countries other than Sri Lanka. As such, the review of empirical literature on this issue covers the studies done

with regard to the entire agricultural entrepreneurial activities or the sub-sectors of the agricultural sector.

Siriwardene and Jayewardene (2014) conducted a research on socio-demographic factors contributing to the productivity in paddy farming in Sri Lanka. They found that innovation and adoption of new practices as the major contributing factor of paddy productivity. This finding shows an association with the entrepreneurship of farmers since generally the innovations and adoption of new practices are remained among the basic attributes of successful entrepreneurs.

Weir (1999) studied the effects of general education on farmer productivity in the rural sector in Ethiopia. According to him, the education system in Ethiopia is characterized with very low rates of participation in rural areas. The empirical analysis employed in studying the effect of education on farmer productivity found that farmer was benefitted by their education in terms of efficiency gains. However, in order to make that effective, they found that a minimum of four years of education was required for a farmer. This is in a traditional society where the majority of people were not educated. However, in the case of Sri Lanka, almost all the farmers at present have completed the primary education and they are in a position to get advantages of additional skills if they are provided with.

Hanf and Muller (1997) as cited by McElwee (2005) suggest that in a dynamic world that the technical progress is fast, only the open-minded farming entrepreneurs are able to recognize more problems. As they mention, an agro entrepreneur should create and maintain the cognitive side sufficiently for problem solving by allocating time to management, decision making tasks, etc.

Anglo et al (2014) conducted a study on the influence of the entrepreneur and enterprise characteristics on the success of cage fish farming in Ghana. They found that technical knowhow, attitudes towards work and managerial skills had significant association with the profitability and the customer satisfaction as well. They recommended encouraging the cage fish farmers to invest more in their technical education.

Mbam and Nwibo (2013) conducting a research on entrepreneurship development as a strategy for poverty alleviation among farming households in Igbo-Eze North local Government area of Enugu state, Nigeria. Having analyzed the data collected from 120 respondents, they revealed that development and acquisition of entrepreneurship skills among the farmers were limited by inadequate power supply, high taxation, poor access to credit, high taxation and the poor government policies on entrepreneurial development. Furthermore, they found that entrepreneurial development had contributed to the poverty reduction in the area.

Titianne (2013) also conducted a study on the entrepreneurship and the effect on small dairy farming in Kenya. He mentions that smallholder activity is the backbone of the agricultural sector in Kenya. Since, donors and different development agencies attempted to develop the agricultural sector mostly through the intervention of adopting the value chain approach. The study aimed at understanding whether entrepreneurial value chain drivers such as access to finance, training, resources, etc. had an influence on the performance of smallholders within the dairy value chain. The data suggested that training and also the access to incentives and resources had improved the performance of smallholders in Kenya. A larger impact had been reflected on the quantity of milk which was followed by increased revenue, herd and also the quality of milk. This means that training provided to farmers in combination with other services and resources significantly affect the farmer performance.

Noor and Dola (2011) studied the impact of far training on farmers' perception and performance regarding Malaysian livestock farmers. A total of 323 farmers and training personnel had been participated as respondents in this study. The findings revealed that there was a positive trend had been emerged due to the training of farmers. The perception of the farmers also was that the training had been contributed to change them and to make them better. The impact could be seen in the increased quality of work, farm products, income and networking while the cost and time were decreased.

Feder, Murgai and Quizon (2004) reveal that better knowledge of farmers reduces the use of pesticides in farming while trained farmers were more successful in that attempt. However, they had also observed that there was no diffusion of the knowledge of the trained farmers to those who were not trained. They may have got such a result because, under competitive circumstances, farmers may be reluctant to pass the knowledge to the other rivals of the same area.

The above review of the literature is sufficient to understand that the provision of different kinds of entrepreneurial skills to farmers in whatever the field that they are engaged in will generate important outcomes for the farmers themselves and also for the economy or the society. However, it shows that skill types and the socio-economic variables involved in raising the productivity are dependent on the type of crop, related farming practices and the socio-economic-demographic attributes of farmers. When considering the banana farming in Sri Lanka, no study has been conducted so far according to the review of literature. Therefore, this review provides the basis for such a study.

### **Statement of the Problem**

Banana farming in Sri Lanka have been identified as one of the alternative sectors which is potential to generate multiple benefits to the society and the economy. However, this sector still remains traditional with very low contribution in almost all aspects. It is assumed that in order to make this sector dynamic, it is necessary to convert this sector from the traditional standing to the commercialized farming. However, the commercialization is much dependent on the possibility of increasing the productivity. As both theoretical and empirical literature suggest, the productivity again largely dependent on the entrepreneurial skills of the farmers. However, again the literature shows that the farmer productivity becomes a function of farmer entrepreneurial skills which are associated with. Therefore, the study intends to solve the problem that how the profitability, financial performance, marketing orientation and productivity are associated with the entrepreneurial skills banana farmers.

### **Objectives**

The main objective of the study is to examine whether there is a relationship between entrepreneurial skills of banana farmers and the farmer performance which can be measured in terms of profitability, financial performance, marketing orientation and productivity. The study examines how the entrepreneurial skills are combined with the farmers each and every performance variables related to the banana cultivation. Finally, it is intended to draw implications for improving the banana farming in Sri Lanka.

### **Methodology**

The study was totally dependent on the quantitative method of analysis which was designed under the positivist approach. The study was conducted using quantitative methods under the

positivist paradigm. The entrepreneurship skills of small scale farmers and their level of performance were investigated through the study. It includes the variables of the study, methods of analysis and the details about the data and collection of data.

### **Study Area and the sample**

The banana cultivation in Sri Lanka has been largely concentrated in the Southern region. As such, the study was carried out in the southeastern dry zone in the Hambantota district of the Southern province in Sri Lanka. Multi stage sampling procedure was used to select sampling units for the study. The first step was the selection of a Divisional Secretariat Division (DSD) from the Hambantota district and it was the Suriyawewa DSD which was selected on judgmental basis. Second step involved in selecting Grama Niladari (GN) divisions from the Suriyawewa DSD and it was completed by selecting four (4) GN divisions on random basis. Step three was the selection of 250 respondents randomly from the four DN divisions. Out of 250 banana farmers 200 farmers had responded successfully for the questionnaire survey. The questionnaire was formulated using both structured and unstructured open-ended questions. The survey questionnaire developed basically based on the entrepreneurship skills section of a previous questionnaire (European Certificate in Entrepreneurship – ECENT, 2006 as cited in Morales, & Marquina, 2012) as well as the logically developed questions. Data collection was carried out in August, 2014.

### **Measurement of variables and methods of analysis**

First, factor analysis was conducted in order to identify the factorable entrepreneurial skills of farmers. Then, a canonical analysis was conducted for determining the association between entrepreneurial factors and farm level performance related variables, profitability, financial performance, marketing orientation and productivity. Farmers' entrepreneurship skills were measured with the help of likert scale that varies from 1 to 5. Using a likert scale was appropriate since it expected to have the advantage of allowing the farmers for degrees of their opinion (McLeod, 2008).

In assessing the farm level performance, many researchers use different kinds of variables. This study uses 'profitability', 'financial performance', 'marketing orientation' and 'productivity' as a set of farm level performance variables to determine the magnitude of the relationships with farmers' entrepreneurship skills.

**Profitability:** Profitability variable is constructed by deducting the variable cost of production of banana farming from the total revenue obtained from the harvest. Many other researchers are agreed in measuring the profitability using this method of calculation (Sulumbe et al., 2010; Olayiwolaa, 2008). As such, the profitability is dependent on sale price per unit, quantity of sales and on the costs of production.

**Financial performance:** A composite indicator was used as a proxy for financial performance of the farmers. This was an aggregated index comprised of several individual performance indicators and scales related to finance. The indicators were self-reported profit of the last consecutive three years, debt-income ratio, household savings of farmers, capital investment in the last three years, and the insurance usage.

**Marketing orientation:** In order to measure the marketing performance, an index was constructed using six marketing methods practiced by banana farmers in Sri Lanka (Wasala et al., 2012). A high score of the index indicates a greater degree of marketing. The farmers used several channels of marketing, such as 1). Selling their products to the collectors, who came to their farms, 2). Selling their product to the whole sellers, 3). Taking their harvest to the closest

economic center for sale. 4).Selling the harvest to retail outlets, while 5) and 6) included, in turn, selling the harvest within their own district and selling the harvest outside the district. A low score on the index shows that a farmer does not make a big effort for selling the production.

**Productivity:** Agricultural productivity is determined by number factors. According to Fried et al. (2008), productivity is the ratio of its output to its inputs. This study defines the productivity as the ratio of value of the total farm output to the value of total farm inputs which were used in production in the two consecutive cropping sessions.

## **Results and Discussion**

### **Study population profile**

The study population consisted of a majority (98%) of male heads of households who were the main decision makers in their families. The age distribution shows that majority of respondent farmers are middle-aged, while about 65 percent for those within the age range of 35-59 years while the average age of the sample was 47 years. Every respondent farmer had completed some level of formal education while almost 45 percent had completed primary education that ranges from grade 5 to grade 10. The remaining 37 percent and 18 percent, respectively obtained the G.C.E. Ordinary Level and G.C.E. Advanced Level qualifications.

To categorize factors affecting entrepreneurship skills of small scale banana farmers and to determine the variance explained by each factor, an exploratory factor analysis was performed. The four commonly used decision rules were applied to identify the factors (Hair et al, 2005): 1) minimum eigenvalue 2) minimum factor loading of 0.5 for each indicator item; 3) simplicity of factor structure, and 4) exclusion of single item factors.

**Table 1: Entrepreneurial skill factors and indicator factor loadings**

Factors and sub-variables	Factor Loadings
<b>1. Confidence and Risk Taking Behavior</b>	
1. I come up with continual good results under pressure.	0.885
2. I bear all the uncertainty in my business	0.821
3. Confronting with risky situation is in the nature of being an entrepreneur	0.819
4. An entrepreneur should be a risk taker not a risk-avers	0.787
5. I am prepared to take risks	0.736
6. I can control stressful situations	0.680
7. I remain composed in stressful conditions.	0.660
8. I can maintain or even increase effort under stressful situations.	0.622
<b>2. Collective Action and Cooperation</b>	
1. Most people who live in this village/neighborhood can be trusted	0.893
2. Farmer association reliable for buying production inputs and distribution	0.850
3. We believe collective bargaining is most effective for selling our production	0.720
4. My knowledge adds value to the work with my neighborhood/ village committee	0.684
5. We are quick to foresee difficult situations and come up with alternative solutions.	0.682
6. Most people in this village/neighborhood contribute time or money toward common development goals	0.590
7. People in this village/neighborhood are willing to help and sharing the market information	0.566
<b>3. Readiness to change and Innovative</b>	
1. I accept and easily adapt to change.	0.880
2. I respond to change with flexibility.	0.860
3. Ability to try new technology needed to become a successful agro- entrepreneur	0.766
4. I like to try new innovations	0.672
5. Exploring new opportunities can be a key success factor	0.636
6. Knowledge and skill may bring some new agro-entrepreneurship ideas	0.593
7. I continually show interest in new developments and in keeping up to date.	
<b>4. Drive and Administrative Skills</b>	
1. I always plan what I want to do according to the schedule	0.852
2. An agro-entrepreneur should have commercial, social and political characteristics to determine their success	0.847
3. I feel proud if my product fulfills the characteristics of a quality product	0.787
4. I strongly believe that my business can contribute to the food industry	0.774
5. I actively seek feedback concerning my strengths and weaknesses	0.666
6. I continually show interest in new developments and in keeping up to date	0.636
7. I inspire enthusiasm in the people that I work with	0.580
8. I am experienced in leading and motivating people.	0.530
<b>5. Visionary and Profit Oriented</b>	
1. I try to find ways to increase my income	0.866
2. I am able to create new ideas in order to increase profit	0.772
3. I am positive that in 5 years I can multiply my income	0.736
4. Open communication to share information is what I always do	0.693
5. I always think of making more opportunities before they happen	0.650
6. I have a goal to increase my productivity, opportunities	0.620
7. I have some experience in the area of negotiation	0.584

According to Table I, there are five factors that explain entrepreneurial skills. The first factor is defined as 'Confidence and risk taking behavior'. The second factor can be named as 'Collective Action and Cooperation'. The third factor is recognized as 'Readiness to change and Innovativeness' while the fourth factor is referred to as 'Drive and Administrative Skills'. Finally, the fifth factor is labeled as 'Visionary and Profit Oriented'.

#### Canonical Correlation Analysis

After the factor analysis a canonical correlation analysis was performed, exploring the relationship between two sets of variables, the entrepreneurial skills and the farmer performance factors. The analysis expected to determine the extent of the relationship between the predictor variable set of entrepreneurship skills variable and the dependent variable set of farm level performance variables of small scale banana farmers.

**Table 2: Multivariate Tests and correlations**

<b>Multivariate Tests of Significance (S = 4, M = 0, N = 94 1/2)</b>					<b>Panel A</b>
Test Name	Value	Approximate F	Hypothesis DF	Error DF	Significance of F
Pillais's	.63906	7.37750	20.00	776.00	.000
Hotellings's	1.05440	9.99047	20.00	758.00	.000
Wilks's	.44621	8.73792	20.00	634.43	.000
Roys's	.45792				

<b>Eigenvalues and Canonical Correlations</b>					<b>Panel B</b>
Root No.	Eigenvalue	%	Cumulative %	Canonical Correlation	Squared Correlation
1	.84474	80.11549	80.11549	.67670	.45792
2	.18204	17.26478	97.38027	.39244	.15401
3	.02153	2.04144	99.42170	.14516	.02107
4	.00610	.57830	100.00000	.07785	.00606

<b>Dimension Reduction Analysis</b>					<b>Panel C</b>
Roots	Wilks λ	F	Hypothesis DF	Error DF	Significance of F
1 TO 4	.44621	8.73792	20.00	634.43	.000
2 TO 4	.82315	3.23313	12.00	508.28	.000
3 TO 4	.97300	.88664	6.00	386.00	.505
4 TO 4	.99394	.59146	2.00	194.00	.555

Source: Author constructed.

This study used an interpretation similar to that of Sherry and Henson (2005). The canonical correlations show how much variance of the dependent variables is explained by the dimensions. Table 2 shows the overall multivariate tests for dimensionality. The testing of latent successive roots, the eigenvalues and canonical correlation coefficients yielded by the analysis are presented in Panel A and Panel B of Table 2. The canonical correlations show how much variance of the dependent variables is explained by the dimensions. This model shows four canonical dimensions of which only the first two are statistically significant. The first test of dimensions that tested whether all dimensions combined were significant, found that it was significant. The second test of dimensions that tested whether dimensions 1 to 4 combined were significant also found that it was significant. The third test of dimensions that tested whether dimensions 2 to 4 combined were significant, found that it was also significant. However, it was found that the third and fourth tests were not significant.

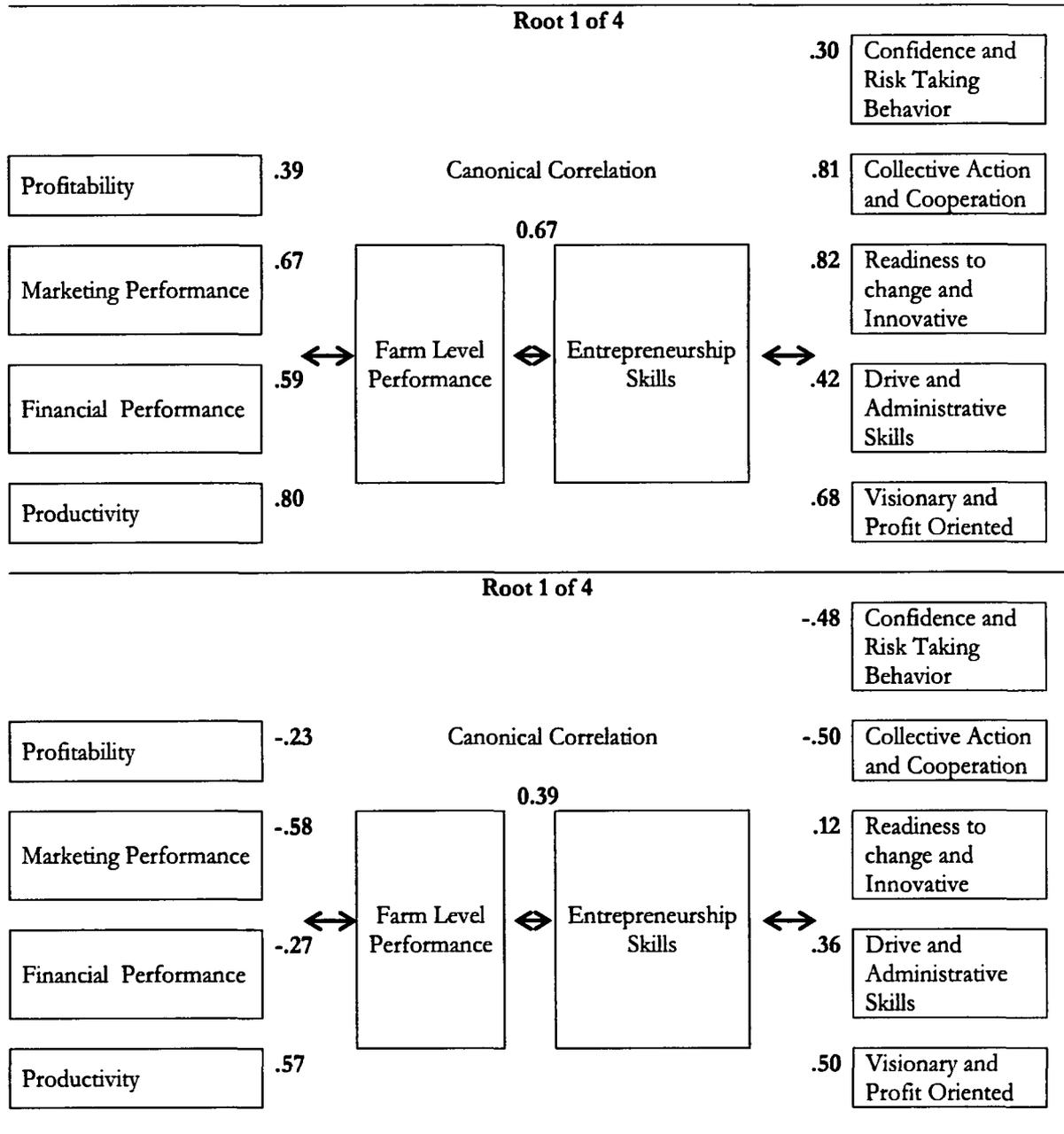
Canonical correlation reflects the percentage of variance in the dependent canonical variate explained by the predictor canonical variate. The result indicates a highly significant function ( $p < .000$ ) and provides the proportion of total variability not explained, i.e. it is the converse of the squared canonical correlation. The key statistic indicating whether or not there is a relationship between the criterion and predictor variables is the significance test for Wilks' lambda. Wilks' lambda, being the proportion of the total variance scores not explained by differences among the groups shows about 43% of the variance which has not been explained by

group differences. Wilks' lambda test statistic is used for testing the null hypothesis that the given canonical correlation and all smaller ones are equal to zero in the population. Each value can be calculated as the product of 'farm level performance' for the set of canonical correlations being tested. In this analysis, the canonical correlations are 0.67670, 0.39244, 0.14516 and 0.07785 and so the value for testing all four of the correlations are zero  $(1 - 0.67670) * (1 - 0.39244) * (1 - 0.14516) * (1 - 0.07785) = 0.44621$ .

Figure 1 depicts the canonical correlations for an uncomplicated interpretation of results. It shows that the correlations between the two sets of variables are 0.67 for root 1 and 0.39 for root 2. These indicate statistically significant correlations between the two constructs, accepting that there is a significant correlation between 'farm level performance' and the 'entrepreneurship skills'. Two sets of variables show a strong relationship when all dimensions (roots) are taken together while it gradually declines from 0.67 to 0.39 when the dimensions are reduced from 4 to 2.

An interpretation of the correlations (factor loadings) between the canonical variables and the dependent variables, which represents latent factors, provides crucial economic insights. The factor loadings of 'Confidence and Risk Taking Behavior', 'Collective Action and Cooperation', 'Readiness to change and Innovativeness', 'Drive and Administrative Skills' and 'Visionary and Profit Oriented' 0.67, 0.30, 0.81, 0.82, 0.42, and 0.68 respectively. On the other hand, factor loadings shown in the right hand side of the figure indicate how much of the variation in the dependent variables is explained by the independent latent factors. It shows that factor loadings of 'Profitability', 'Marketing Performance', 'Financial Performance', and 'Productivity' are respectively 0.39, 0.67, 0.59 and 0.80. The root 2 of 4 also can be understood in the same way as above.

**Figure 1: Canonical correlation of likelihood of risk tolerance behavior and investment in education**



Source: Authors constructed.

The canonical correlation analysis was conducted using four farm level performance variables as predictors of the five entrepreneurship skills variables to evaluate the multivariate, the shared multivariate relationship between the two sets of variables. The analysis obtained two functions with squared canonical correlations ( $Rc^2$ ) of .45792 and .15401 for each successive function. The full model across all functions was statistically significant using the Wilks's  $\lambda = .44621$  criterion,  $F(20, 634.43) = 8.73792, p < .000$ . Wilks's  $\lambda$  represents the variance unexplained by the model and, thus,  $1 - \lambda$  means the full model effect size in an  $r^2$  metric.

The dimension reduction analysis obtained by the analysis was made use for testing the hierarchical arrangement of functions for statistical significance. The full model and also the functions, and 2 to 4 were statistically significant,  $F(20, 634.43) = 8.73792, p < .000$  and  $F(12, 508.28) = 3.23313, p < .000$  respectively. Functions 3 and 4 did not explain a statistically significant amount of shared variance between the variable sets,  $F(6, 386.00) = 0.88664, p < .505$  and  $F(2, 194.00) = 0.59146, p < .555$ . From  $R_c^2$  effects obtained for each function, only the first two functions were considered and respectively represented 46 percent and 15 percent of shared variance. The last two functions only explained 2 percent and less than 1% respectively, of the remaining variance in the variable sets after the extraction of the first two functions.

**Table 3: Canonical association of entrepreneurship skills and farm level performance**

Variables	Function 1			Function 2			
	Coef	$r_s$	$r_s^2(\%)$	Coef	$r_s$	$r_s^2$	$h^2(\%)$
Profitability	.0769	.3930	0.15	-.1299	-.2393	0.057	0.21
Marketing Performance	.4063	<u>.6723</u>	0.45	-.7161	<u>-.5866</u>	0.344	<u>0.80</u>
Financial Performance	.3490	<u>.5949</u>	0.36	-.2359	<u>-.2732</u>	0.079	<u>0.45</u>
Productivity	.6095	<u>.8024</u>	0.64	.8385	<u>.5777</u>	0.334	<u>0.98</u>
<b><math>R_c^2</math></b>			<b>67.67</b>			<b>39.24</b>	
Confidence and Risk Taking Behavior	.0136	.3064	0.09	-.4357	<u>-.4817</u>	0.232	0.33
Collective Action and Cooperation	.4634	<u>.8143</u>	0.66	-.7732	<u>-.5082</u>	0.258	<u>0.92</u>
Readiness to change and Innovative	.4377	<u>.8294</u>	0.69	.3459	.1205	0.015	<u>0.70</u>
Drive and Administrative Skills	.0323	.4237	0.18	.1137	.3606	0.130	0.31
Visionary and Profit Oriented	.3524	<u>.6861</u>	0.47	.6238	<u>.5042</u>	0.254	<u>0.72</u>

Note. Structure coefficients ( $r_s$ ) greater than  $|.45|$  are underlined. Community coefficients ( $h^2$ ) greater than 45% are underlined. Coef = standardized canonical function coefficient;  $r_s$  = structure coefficient;  $r_s^2$  = squared structure coefficient;  $h^2$  = community coefficient.

Table 3 presents the standardized canonical function coefficients and structure coefficients for function 1 and 2. The squared structure coefficients ( $r_s^2$ ) and the communalities ( $h^2$ ) are also given for the two functions and each variable. Function 1 reported a canonical correlation of 0.67 between two sets of variables. In terms of original variables' importance in predicting the identified canonical correlation ( $r_s > 0.45$ ), "Marketing Performance", "Financial Performance" and "Productivity" were found that positively contribute to the canonical correlation. In the first dependent variate, the three variables have loadings equal to or exceeding 0.59, indicating a strong degree of inter correlation among the three variables, suggesting that all three measures are strongly representative of farm level performance of small scale banana farmers. However, the ranking of the average share of canonical loading indicates that productivity, marketing performance and financial performance are the best indicators of farm level performance.

In function 1, set of independent variates display positive loadings, ranging from 0.3064 to 0.8294. The extraction of the variates in canonical correlation is to maximize the predictive objectives, so it is not surprising that the three variables with the highest loading are "Collective action and cooperation" (0.8143), "Readiness to change and innovative" (0.8294) and "Visionary and profit oriented" (0.6861), are the variables that contribute most to farm level performance of the framers. However, "Drive and administrative skills" (0.4237) and Confidence and "Risk

taking behavior" (0.3064) also represents considerable amount of the observed variation in farm level performance of the framers.

Moving to Function 2, the coefficients in Table 3 display quite a different pattern, "Marketing performance" was found to be the one that strongly contributes to the canonical correlation (-.5866) even though it was inversely related and Productivity variable (.5777) also has some predictive power. According to this function, "Collective Action and Cooperation" skills (-.4817) was the dominant predictor alone with a negative coefficient for "Confidence and Risk Taking Behavior"(-.4817). It can also be seen that "Collective action and cooperation" skills were positively related for "Visionary and profit oriented" (.5042) skills of the farmers.

### Conclusion

The aim of the study was to examine how far the entrepreneurial skills of banana farmers are associated with the farmer performance factors. The study recognized that collective action and cooperation, readiness to change and innovativeness, and visionary and profit oriented nature have a significant association with the farmer performance factors. It also identified that the marketing performance, financial performance and productivity were the main contributors of the performance of the banana farmers.

The association between variables shows that collective action and cooperation, readiness to change and innovativeness and visionary and profit oriented are significant policy variables that can raise the marketing performance and financial performance and the productivity in banana farming. Among the relationships which have been revealed from the analysis, it shows that the strongest is the relationship between collective action and cooperation, readiness to change and innovativeness and the farm productivity. As such, it can be suggested to strengthen the farmers with these skills so that nearly all economic performance variables are positively directed.

It is also interesting to see that confidence and risk taking behavior of farmers have a negative relationship with the productivity. The farmers who take the risk of planting banana during severe droughts may face such a low productivity problem.

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