

Impact of market sensitive accounting information on agricultural products in Sri Lanka

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Abstract

The purpose of this study is to find out whether there is an impact of market sensitive accounting information on improvement of paddy cultivation among farmers in Sri Lanka. The population of this study was all farmers who are engaging in paddy cultivation in Anuradhapura district in Sri Lanka out of them 120 farmers were selected as sample based on convenience sampling techniques especially from Kahatagasdigiliya, Thambuththegama and Rajanganaya areas where paddy cultivation is very popular in the district. Primary data was collected through structured questionnaires and personal interviews. Independent variables of the study were paddy stock controlling, paddy cost estimation, pricing methods and demand and supply forecasting while the depending variable was the improvement of paddy cultivation. Collected data were analyzed through SPSS software and employed different analytical techniques to address the research questions. According to the regression analysis, paddy cost estimation and demand supply forecasting have significant impact on improvement of paddy cultivation among farmers in Anuradhapura District.

Keywords: paddy cultivation, cost estimation, pricing methods, demand supply forecasting

Introduction

Sri Lanka is an agricultural based country in which often paddy cultivation has been identified as one of main agricultural products in the country. The historical records of the country also evident that the great king Parakramabahu had exported redundant harvesting of paddy to nearest nations such as Brume and China during his regime. Even today paddy is the staple cultivation of the nation. Eighty five percent (85%) of the people who were living in villages engage paddy cultivation and agriculture base activities in Sri Lanka (Shantha, Ali, & Bandara, 2012) ^[5]. Approximately about 25% of cultivatable land is used for paddy and it had generated about 3 million direct and indirect employment opportunities to the country. On the other hand, rice is considered as main food of the country and the average per capita rice consumption of Sri Lankans' is about 300 grams per day and, it provides around 1050 Kcal, with 45 % of per capita protein requirements (Department of Census and Statistics abstract, 2010) ^[13]. Though above statistics indicates increasing importance of paddy cultivation, underline importance of industry is belittling among farmers since last few years. Prices of paddy and rice are waving in the country without a stable policy. Even government could not control the prices of rice and paddy due to significant influences of middlemen in the industry. Further, lack of awareness of farmers about watering, broadcasting, seed management, storing, fertilizer and pesticide usage have impeded industry attractiveness among new comers and future generation. Further younger generation has a less interest regarding the agriculture due to lack of motivations and knowledge related to agriculture. Moreover, education, environmental hazards like droughts and flood adversely effect on the performance of the industry. However the impact of market sensitive information about paddy cultivation has not been received

much attention from both academics and institutional sides. Hence, the study was wish to examine impact of market sensitive accounting information on improvement of paddy cultivation among farmers in Anuradhapura District.

Literature Review

Accounting is an important measurement system to maintain businesses activities. (Caliskan, 2012) ^[1]. Luca Pacioli in (1994) defined accounting is a language of business measures the results of an organization's economic activities and conveys this information to a variety of users, including investors, creditors, management and regulators. Basically accountancy is the measurement, processing and communication of financial information about economic entities. Agriculture is the cultivation of animals, plants and fungi for food, fiber bio fuel, medicinal plants and other products used to sustain and enhance human life. Agriculture was the key factor in developing countries to increase country development. Rice is the staple food from the ancient times in Sri Lanka. Related to that, paddy has become a major crop in the agricultural section. At present, the paddy cultivation seems a less growth and as a solution for that, the researcher suggests to make the farmers aware of the accounting information in a manner which they can understand properly and increase the performance of paddy cultivation. Factors Affecting Financial Performance of new and beginning farmers is a study done by Mishra (2009) ^[9]. The purpose of this paper is to investigate the factors (farm, operator and household characteristics, along with farm type and regional location of the farm) affecting financial performance of new and beginning farmers and ranchers. Returns on assets (ROA), a measure of financial performance widely used in the farm management literature, is the ratio of net farm income plus interest payment to total assets. The

independent variables hypothesized to affect the farm's financial performance encompass the following three areas: farm operator characteristics, farm characteristics such as production and marketing efficiency measures, and management strategies. Results from this study show that although there is an inverted U-shaped relationship between age of the operator and financial performance, management strategies such as increasing the number of decision makers, engaging in value-added farming, and having a written business plan can lead to higher financial performance. Researchers by Shantha, Ali and Bandara (2012) ^[5] have discussed about the factors affecting for performance of paddy cultivation. According to the findings of their study, availability of resources is the main factor that has significant impact on performance of the paddy cultivation in Sri Lanka. Begam & Sivarajah, (2015) ^[10] forecasted paddy production in Sri Lanka using time series data on ARIMA model. The objectives of this study are to investigate the past, present and future trends of paddy production in Sri Lanka and to develop a time series model to detect the long term trend and prediction for future changes of paddy production for the three leading years. Autoregressive Integrated Moving Average (ARIMA) was used to fit the data set. Poon & Weersink, (2011) ^[11] examined Factors Affecting Variability in farm and off-farm Income. The purpose of this paper is to examine the factors affecting the relative variability in farm and off-farm income for Canadian farm operators.

Variability of farm and off-farm income is analyzed using a dataset of 17,000 farm operators from 2001 to 2006. Relative ranking of the coefficients of variation (CV) for farm and off-farm income are compared across farm types and are regressed against factors conditioning the variations. Greater reliance on farm income results in lower (greater) relative variability in farm (off-farm) income. Larger commercial operations experience larger farm income volatility because they are less risk averse or they can manage more risk. Further the research conducted by Henegedara, (2000) reveals the economics of the paddy cultivation in Sri Lanka and the study revealed that the average production costs had increased substantially over the past few years, due mainly to increased labor charges and a heavy reliance on capital intensive inputs.

Methodology

The study of identifying impact of market sensitive accounting information on performance of paddy cultivation in Anuradhapura district is a quantitative, deductive type study. Study developed a conceptual framework for the study based on the conducted literature survey. Accordingly, paddy stock controlling, paddy cost estimation, awareness about paddy price fluctuation and demand supply forecasting were independent variables of the study. Improvement of paddy cultivation among farmers in Anuradhapura was considered as dependent variable.

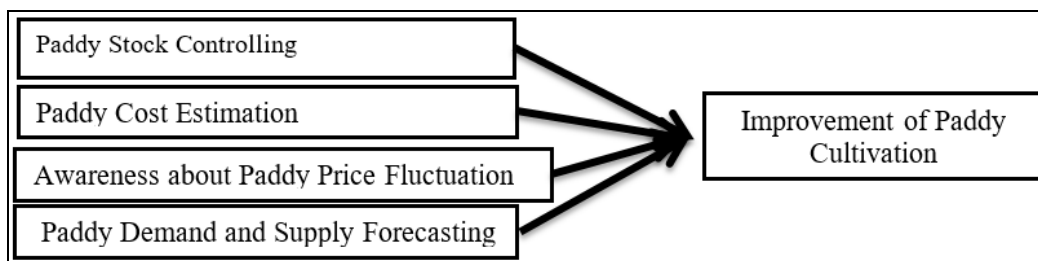


Fig 1

Based on the conceptual framework, study developed four directional hypotheses as follows,

H₁: Paddy stock controlling has an impact on improvement of paddy cultivation among farmers in Anuradhapura District.

H₂: Paddy cost estimation has an impact on improvement of paddy cultivation among farmers in Anuradhapura District.

H₃: Awareness about paddy price fluctuation has an impact on improvement of paddy cultivation among farmers in Anuradhapura District.

H₄: Paddy demand and supply forecasting has an impact of improvement of paddy cultivation among farmers in Anuradhapura District.

The target population was all farmers who are cultivating paddy in Anuradhapura district. Out of which 120 farmers were selected as sample for the study based on simple random sampling method especially from Kahatagasdigiya, Thambuththegama and Rajanganaya area. Data was collected through researcher administrated structured questionnaire and it consisted two sections. The first section of the

questionnaires include demographic questions. Five point Likert questions related to both dependent and independent variables were included into section two. Collected data were analyzed through SPSS and deployed different statistical tests such as correlation and regression to address research question correctly.

Result and Discussion

According to the demographic analysis 71.6% of male farmers and 28.4% female farmers responded to the questionnaire. Most of respondents are married and represent the age group between 31 to 40 and 53% respondents had more than nine years' experience. Before the analysis, internal consistency of each constructs was evaluated through reliability analysis. Results of the reliability test (Cronbach's Alpha = 0.758) was greater than standard level 0.7. It indicated that the items which used to measure each construct was internally consistent.

Descriptive Statistics

Table 1: Descriptive statistics

Variable	Mean	Std. Deviation
Awareness of Paddy Price Fluctuation	4.15	0.392
Paddy Stock Controlling	2.93	0.563
Paddy Cost Estimation	3.89	0.583
Demand and Supply Forecasting	3.78	0.742
Performance of Paddy Cultivation	4.14	0.638

According to the descriptive statistics, the mean value of paddy stock controlling is 2.93. It indicates that available paddy storing facilities and knowledge of stock controlling cost and gaining advantages though holding paddy of farmers are very low. As per the table mean value of paddy cost estimation and paddy demand supply forecasting are 3.89 and 3.78 respectively. It means that awareness of farmers to estimate cost associates with paddy cultivation and cost estimation method are relative high among respondents. Further, it demonstrates that ability of farmers to forecast paddy demand supply at market and ability of using forecasting information decision making are relatively high

among respondents. Resulting more farmers estimate paddy cultivation cost and forecast price, supply and even demand fluctuation of the market before harvesting. As well as the awareness of paddy price fluctuations at market is strongly high among sample as its mean value takes about 4.15. The improvement of paddy cultivation among farmers is also at higher level among the respondents.

Correlation Analysis

Correlation Analysis examines the relationship between independent variables and dependent variable in order to test the association among variables.

Table 2: Correlation Analysis

Variables	Paddy Cultivation	Pricing Method	Stock Controlling	Cost Estimation
Performance of Paddy Cultivation	1			
Awareness of paddy price fluctuations	0.069	1		
Paddy Stock Controlling	0.209*	0.004	1	
Paddy Cost Estimation	0.330*	0.352*	0.326*	1
Demand and Supply Forecasting	0.271*	-0.042*	0.488*	-0.136

** . Correlation is significant at the 0.01 level (2- tailed).

According to the result of correlation analysis, correlation coefficient of paddy stock controlling, paddy cost estimation, demand and supply forecasting are 0.209, 0.330 and 0.271 respectively and respective sig values are less than 0.05 level. It indicates that there statistically significant positive association between paddy stock controlling, paddy cost estimation, demand & supply forecasting with performance of paddy cultivation in Anuradhapura District. However the association between awareness of paddy price fluctuations and improvement of paddy cultivation among farmers in Anuradhapura District is statistically insignificant at 0.05 level.

To check for multicollinearity, the study estimated the

variance inflation factors (VIF) and found that they ranged from 2.568 to 1.500, which is well below the critical value of 10, the value that indicates the possibility of a multicollinearity problem (Hair, 1998) [7]. Durbin Watson statistic as per the test was 1.88, which indicates the absence of a heteroscedasticity problem in the data set. The explanatory power of the model (R²) is 0.43, suggesting that the model explains 43% of variance in the Performance of Paddy cultivation in Anuradhapura District. Accordingly, 43% variation of Performance of Paddy cultivation is explained by Stock Controlling, Cost Estimation and Demand and Supply Forecasting.

Table 3: coefficients Analysis

Variables	Coefficient	Std. Error	T	Sig.
(Constant)	3.907	0.990	3.946	0.000
Paddy Stock Controlling	0.037	0.127	.292	0.771
Paddy Cost Estimation	0.446	0.178	2.511	0.015
Demand and Supply Forecasting	0.587	0.095	6.203	0.000

a. Dependent Variable: Performance of Paddy cultivation

As per the regression result, regression coefficients of stock controlling is 0.037 and respective sig value is 0.771. It is higher than the acceptable level 0.05. Resulting, study reject hypothesis two. Accordingly, any change of paddy stock controlling information does not lead to change performance

of paddy cultivation in Anuradhapura District. According to the regression table, determinant coefficient of paddy cost estimation and demand supply forecasting are 0.446 and 0.587 respectively and its sig values are lower than cut off level 0.05. Accordingly study accept hypotheses three and four.

Resulting changes of paddy cost estimation and demand supply forecasting by one percent will lead to change performance of paddy cultivation in Anuradhapura District by 0.446 and 0.587 respectively.

Conclusion

The research on the impact of market sensitive accounting information on the improvement of paddy cultivation among farmers in Anuradhapura district was done with four independent variables and a dependent variable. The analysis related to the study have been undergone rigorous process to address the question. The correlation analysis indicated that there were statistically significant positive associations between paddy stock controlling, paddy cost estimation and demand & supply forecasting with improvement of paddy cultivation among farmers in Anuradhapura District. However the association between awareness of paddy price fluctuations and improvement of paddy cultivation among farmers in Anuradhapura District was statistically insignificant. According to the regression analysis, paddy cost estimation and demand supply forecasting have significant impact on improvement of paddy cultivation among farmers in Anuradhapura District. Estimated production cost of paddy helps farmers to manage their financial resources effectively without delaying other day to day recurrent expenses and helps them to get a decision about investment in paddy. Further demand supply forecasting information greatly beckons future market volatility and paddy prices. It would be a good sign for farmers to get cultivation decisions. Resulting both factors determine the improvement of paddy cultivation among farmers in Anuradhapura District. Based on the findings study recommend respective government and non-government institution which innate goal to promote paddy cultivation, should disclose all available related information about paddy cultivation such as price fluctuations, controlled prices, government decisions, fertilizer subsidies, restricted pesticides, new improvement of seeds and future expected changes for farmers.

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