

Effect of Liquidity Decisions on Financial Performance of Dairy Farms in Nakuru County, Kenya

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Abstract: The main aim of the study was to determine the effect of liquidity decisions on financial performance of dairy farms in Nakuru County, Kenya. This is a study carried out on management, accounts and finance employees working with dairy farms in Nakuru County, Kenya with daily milk production of at least 1,000 litres. A Sample of 62 respondents was obtained from the population using both purposive and stratified random sampling methods. Data was analyzed with the facilitation of the Statistical Package for Social Sciences software. Descriptive statistics which included frequencies, percentages, means, and standard deviations were used in the analysis. Inferential statistics employed in the analysis included Pearson's Product Moment Correlation Coefficient and simple regression analysis. It was found that, there existed significant correlation between liquidity decisions and financial performance ($r = 0.425$; $p < 0.05$). It was concluded that farms had established liquidity policies, effective management of current assets and systems which detected warning signals of liquidity risk. The study inferred that liquidity decisions were important aspects since they influenced financial performance.

Keywords: dairy farming, financial performance, liquidity decisions,

Date of Submission: 11-10-2019

Date of acceptance: 26-10-2019

I. Introduction

Dairy farming is a very important agricultural sub-sector in Kenya due to its significance contribution to the national Gross Domestic Product. This underscores its critical role with regard to the socio-economic development of the country. Thousands of households across the country benefit either directly or indirectly from the proceeds of the dairy sector. These include dairy farmers, proprietors of dairy farms, employees of these farmers and milk processing plants, and other stakeholders in the dairy value chain. However, the dairy industry in Kenya has hitherto been facing several challenges. These range from inaccessibility of the market, limited access to financial services, lack of adequate working capital, low liquidity, high costs of production, and also low spending on the sub-sector by the government (Ter-Hemen, 2015). Various studies (Wambugu et al., 2011; Mokeira, 2014; Kinyua, 2017) examined productivity trends and performance of dairy farming, investment in dairy farming, profitability, productivity, and capital structure of agricultural farms. However, these studies fell short of establishing the effect of liquidity policies on financial performance of dairy farms in Kenya. Therefore, this study was necessitated with the aim of finding out the effect of liquidity policies on financial performance of dairy farms in Nakuru County, Kenya.

II. Objective of the Study

The objective of this study was to determine the effect of liquidity decisions on financial performance of dairy farms in Nakuru County, Kenya.

III. Review of Literature

Liquidity is the degree to which an asset or security can be quickly bought in the market without affecting the asset price. There are two types of liquidity which are market liquidity and accounting liquidity. Market liquidity refers to the extent to which a market allows assets to be bought and sold at stable prices. On the other hand, accounting liquidity refers to the ease with which an individual or a company can meet their financial obligations with their liquid assets. There are three common ways used to measure liquidity this include calculating the current ratio, the quick ratio and the operating cash flow ratio (Lucas, 2014).

Liquidity decisions are defined as financial decisions which concerned with the management of the current assets, which is a prerequisite to success of a business enterprise in the long run. They are also referred to as working capital decisions. An enterprise which faces working capital inadequacy is likely to become

illiquid. The primary object of liquidity decision is to ensure a trade-off between profitability and liquidity. This is founded on the reasoning that increased capital assets are likely to adversely affect profitability. However, contrary to a lot of literature, Vieira (2010) holds that, there exists a significant positive correlation between liquidity and profitability on the short run. The liquidity decisions ought to strike a balance between working capital management and allocation of funds on individual current assets.

Essentially, liquidity decisions address working capital management. Wieczorek-Kosmala, Dos, Blach and Gorczyńska (2016) state that working capital management influences liquidity of an enterprise. Day-to-day financial operations of a firm that encapsulate current assets and current liabilities warrant making of appropriate liquidity decisions. The key components of liquidity decisions include formulation of inventory policy, and policies on receivable management. Other elements are formulation of cash management strategies, and policies on effective utilization of spontaneous finances.

In Sweden, a study conducted by Hallenberg (2015) analyzed the liquidity of leveraged dairy farms in the country. The objective of the study was to evaluate the effect of price risk on future liquidity of leveraged dairy farmers in the country. The study used two leveraged dairy firms in Sweden. The study was both qualitative and quantitative in nature. The results of the study indicated that a farm that was more dependent on milk production had a higher probability of future liquidity. The study also established that the dairy farms with a larger share of income derived from the dairy production were more sensitive to fluctuations in milk prices and interest rates.

A study conducted by Devarajan (2011) examined the liquidity and solvency position of co-operative milk production union limited in Salem, Massachusetts. The study evaluated the liquidity and solvency position of the company. The source of data for the study was both primary and secondary. The study results revealed that the liquidity and solvency position of the company was stable and that there was an increase in working capital of the firm.

An empirical analysis on liquidity constraints and farm household efficiency was conducted by Lovo (2010) in South Africa. The aim of the study was to examine the liquidity constraints and how it affects the efficiency of farms at the household level. The study was delimited to Kwazulu Natal Province. Farm household technical efficiency was estimated using Data Envelopment Analysis. The results of the study reveal that access to liquidity and income diversification positively influences farm household technical efficiency. The study concluded that there is need for institutional reforms to improve access to credit markets and labor can allow a more efficient use of farm household resources.

A study conducted in Nigeria by Onwumere, Ene and Achilihu (2017) assessed the effects of liquidity status and performance on farming and non-farming enterprises of households in the country. The objective of the study was to identify the liquidity status and performance of farming and non-farming enterprises of households in Abia State. The study sample population comprised of 100 households enterprises. Descriptive statistics, profitability ratios and multiple regression models were used to analyze data. The study found out that there was a positive impact of liquidity status and performance on farming and non-farming enterprises in Abia State. The study concluded that farming enterprises should ensure that they limit taking debts so as to avoid bankruptcy.

In Kenya, an empirical investigation was carried out on the determinants of capital structure of agricultural firms in Kenya by (Kinyua, 2017). One of the objectives of the study was to examine the effects of liquidity on capital structure of agricultural firms in the country. The study adopted panel regression model to estimate the determinants of capital structure of agricultural firms in the country. The findings of the study revealed that there is a negative relationship between liquidity and capital structure of agricultural firms. This negative relationship implies that firms with substantial cash flows can easily finance their short term operations and investments without the need to take up short term debt.

An empirical study carried out by Odalo (2016) investigated the liquidity and financial performance of agricultural firms listed in the Nairobi Securities Stock Exchange in Kenya. The study evaluated the effect of liquidity on the financial performance of listed agricultural companies in Nairobi Securities Exchange. The study utilized secondary data obtained from the financial statements and analyzed using ordinary least squares model. Liquidity was measured using liquidity ratio while financial performance was measured using return on assets, return on equity and earnings per share. The study findings were that the relationship between liquidity and ROA and ROE is positive and significant. The study concluded that liquidity affects the financial performance of agricultural companies.

IV. Material and Methods

This study was carried out on management, accounts and finance employees working with dairy farms in Nakuru County, Kenya with daily milk production of at least 1,000 litres. These dairy farms were 16 in number. The choice of these individuals was based on the fact that they were deemed to be largely conversant with financial management practices and financial performance of their respective farms. The research adopted

a cross-sectional survey design. The sample size was 62 employees which was determined using the Nassiuma’s (2008) formula. Purposive and stratified random sampling methods were used to obtain the sampled respondents from the accessible population. Only the employees working with dairy farms with minimum daily milk production of 1,000 litres were considered in the study. Also, the employees that the study focused on were the management, accounts and finance staff who were believed to be the most conversant with issues regarding financial management practices and financial performance of dairy farms. This implies the respondents were purposively selected from the rest of the employees. Moreover, the respondents were distributed across the 16 dairy farms in Nakuru County. These dairy farms comprised distinct strata. The stratified random sampling was used in order to ensure that all the listed dairy farms included in the study were proportionate to number of their management, accounts, and finance staff. Pilot study was carried out in Nyandarua County, Kenya, where 7 respondents were randomly picked from leading dairy farms in the County. The imperativeness of selecting this County was informed by the fact there was significant dairy farming practiced there. After seeking and obtaining the necessary approval, consent and permit, a structured questionnaire consisting of close-ended questions/data items was used to collect the data from the respondents. Besides the questions/data items being close-ended, they were also on a 5-point Likert scale. In addition, the questionnaire was self-designed. The questionnaires were self-administered since the respondents were expected to have the ability to comprehend the content therein. The data collection took a period of about 5 working days. Pertinent ethical issues were considered during the entire data collection period. The collected data were subjected to screening where inappropriately and/or incompletely filled questionnaires were discarded. The fine data were coded, processed and analyzed with the facilitation of the Statistical Package for Social Sciences (SPSS) Version 24 software. Descriptive statistics were used in the analysis. These included frequencies, percentages, means, and standard deviations. In addition, inferential statistics that were employed in the analysis included Pearson’s Product Moment Correlation Coefficient (PPMCC) and simple regression analysis. The null hypothesis was tested at p -value = 0.05. The results of the respective analyses were presented in form of tables.

V. Results

This section presents the response rate and results emanating from the analyses of the collected data. Both descriptive and inferential statistical results will be presented.

5.1: Distribution of respondents by job designation

The number of questionnaires filled and collected from the field was 60. Therefore, the response rate was 96.77%. It was noted that majority (40%) of the staff were accounting officers. A total of 28.3% were finance officers while 31.7% of the staff were farm managers. These results are shown in Table no 1.

Table no 1: shows distribution of respondents by job designation

	Frequency	Percentage
Accounting Officer	24	40.0
Finance Officer	17	28.3
Farm Manager	19	31.7
Total	60	100.0

5.2: Distribution of respondents by working experience

The study determined the duration the staff had worked with the respective dairy farms. The results to this effect are as shown in Table no 2. The results indicated that most (40.0%) of the staff had worked with the dairy farms for a period of between 3 to 5 years. A total of 25.0% of employees had worked for a period of less than three years while 20.0% had worked for a period ranging between 6 to 10 years. The study further revealed that only 15.0% of the staff had worked with dairy farms for more than 10 years. The results implied that there was substantial labor turnover since majority (65.0%) of the staff did not last for a period of more than 5 years. This could have further been linked to unstable financial performance and financial sustainability of several of these farms.

Table no 2: shows distribution of respondents by working experience

	Frequency	Percentage
Less than 3 years	15	25.0
3-5 years	24	40.0
6-10 years	12	20.0
More than 10 years	9	15.0
Total	60	100.0

5.3: Descriptive statistics in relation to liquidity decisions and financial performance

Table no 3 shows the descriptive statistics in relation to liquidity decisions and financial performance. The data collected were on a 5-point Likert scale where the responses ranged from strongly disagree to strongly agree. The results revealed that 71.5% of respondents agreed that they ensured that there was up-to-date management of inventory in dairy farms while 28.6% were not sure. A total of 62.9% of the surveyed staff admitted that they ensured that there was effective management of receivables in dairy farms. However, 37.1% of the respondents were not sure. Moreover, most (74.3%) of the respondents indicated that dairy farms have established liquidity policies while 25.7% had differing views. In addition, 54.3% of the respondents admitted that there was effective management of current assets in dairy farms. Regarding the assertion that there was effective management of current liabilities in dairy farms, 45.7% of the respondents admitted to the assertion and 45.7% were not sure.

Furthermore, majority (60%) of the surveyed staff were not sure whether there are systems put in place to detect early warning signals of liquidity risk in dairy farms. In the same breadth, 34.3% of the respondents agreed to the view while 5.7% of the respondents disagreed. It was also observed that 31.4% of respondents agreed to the opinion that dairy farms have adequate capital while 48.6% were not sure and 20% did not agree to the foregoing assertion. The results further demonstrated that, generally, respondents were in admission that there was up to date management of inventory in dairy farms (mean=3.80). In general, the surveyed staff agreed that dairy farms ensured effective management of receivables (mean=3.77). The sampled respondents, on average, concurred that dairy farms had established liquidity policies (mean=3.77); and that there was effective management of current assets in the aforesaid farms (mean=3.57). In relation to the foregoing arguments the respondents had largely similar views (std<1.000). Additionally, the surveyed staff were generally not sure whether there was effective management of current liabilities in dairy farms (mean=3.37). It was further noted that there were systems put in place to detect warning signals of liquidity risk in dairy farms (mean=3.29). Furthermore, the surveyed employees, on average, were not sure whether dairy farms had adequate working capital or not (mean=3.11). The respondents held closely related opinions regarding the aforesaid assertions (std<1.000).

Table no 3: Descriptive Statistics for Liquidity Decisions

	n	SA 5	A 4	NS 3	D 2	SD 1	Mean	Std. Dev.
We ensure that there is up-to date management of inventory in our farm.	60	8.6	62.9	28.6	0	0	3.80	.580
We ensure effective management of receivables in our farm.	60	14.3	48.6	37.1	0	0	3.77	.685
Our dairy farms have established liquidity policies.	60	2.9	71.4	25.7	0	0	3.77	.487
There is effective management of current assets in our farm.	60	5.7	48.6	42.9	2.9	0	3.57	.650
There is effective management of current liabilities in our farm.	60	0	45.7	45.7	8.6	0	3.37	.641
There are systems put in place to detect early warning signals of liquidity risk in our farm.	60	0	34.3	60.0	5.7	0	3.29	.568
Our dairy farms have adequate working capital.	60	0	31.4	48.6	20.0	0	3.11	.713

5.4: Correlation between Liquidity Decisions and Financial Performance

Table no 4 shows Correlation between Liquidity Decisions and Financial Performance. It is evident that there existed a positive, moderately strong, and statistically significant relationship between liquidity decisions and financial performance of dairy farms ($r = 0.425$; $p < 0.05$). These results implied that as better liquidity decisions were made, the greater the likelihood of moderately increasing the financial performance of dairy farms in Nakuru County, Kenya. These findings corroborated earlier results in a study by Odalo (2016) which had indicated that liquidity was positively related with financial performance.

Table no 4: Correlation between Liquidity Decisions and Financial Performance

Liquidity Decisions	Financial Performance	
	Pearson Correlation	.425**
Sig. (2-tailed)	.000	
n	60	

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

5.5: Simple linear regression analysis

The results of simple linear regression analysis with regard to liquidity decisions and financial performance of dairy farms are presented in Table no 5, Table no 6, and Table no 7 respectively.

Table 5: Model Summary

Model	r	r Square	Adjusted r Square	Std. Error of the Estimate
1	.425 ^a	.181	.169	.17899

a. Predictors: (Constant), Liquidity Decisions

The results shown in Table 5 indicated that 18.1% of variance in financial performance of dairy farms in Nakuru County could be explained by liquidity decisions ($r^2 = 0.181$).

Table 6: ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.482	1	.482	15.031	.000 ^a
	Residual	2.178	68	.032		
	Total	2.660	69			
a. Predictors: (Constant), Liquidity Decisions						
b. Dependent Variable: Financial Performance						

According to the results shown in Table 6, the value of $F(1, 68) = 15.031$; $p < 0.05$ indicated that the effect of liquidity decisions on financial performance of dairy farms was statistically significant. These results were contrary to the first null hypothesis which had stated that the aforesaid effect was not significant. Therefore, the null hypothesis was rejected.

Table 7: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.831	.328		8.626	.000
	Liquidity Decisions	.360	.093	.425	3.877	.000

a. Dependent Variable: Financial Performance

The results shown in Table no 7 indicated that a unit change in financial performance of dairy farms necessitated 0.360 unit change in liquidity decisions while other factors were held constant as illustrated in the equation below.

$$Y = 2.381 + 0.360X_1$$

The results of t-statistics ($t = 3.877$; $p < 0.05$) corroborated the results of F-statistics by indicating that the effect of liquidity decisions on financial performance is statistically significant at 0.05 level of significance. The first null hypothesis (H_{01}) which stated that, here is no significant effect of liquidity decisions on financial performance of dairy farms in Nakuru County was rejected.

VI. Conclusion

Dairy farms had up-to-date inventory management and ensured effective management of inventory. Also, farms had established liquidity policies, effective management of current assets and systems which detected warning signals of liquidity risk. The study inferred that liquidity decisions were important aspects since they influenced financial performance. The study recommended that in order to make suitable liquidity decisions farms should ensure there is up-to-date inventory management and that the farms receivables are effectively managed. Dairy farms should also establish better liquidity policies, effective current assets and current liabilities management. The farms should put in place systems that warning signals of liquidity risk early.

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Colleta Wangui Migwi, "Effect of Liquidity Decisions on Financial Performance of Dairy Farms in Nakuru County, Kenya." *IOSR Journal of Economics and Finance (IOSR-JEF)*, vol. 10, no. 5, 2019, pp. 39-43.