

The Effect of Cash Conversion Cycle on Financial Performance of Selected Agricultural Rice Cooperatives in Rwanda

A Case Study: Corimak and Coproriz Ntende

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Abstract: This study assesses the effect of cash conversion cycle on the performance of selected agricultural rice cooperatives in Rwanda. The problem pertaining cooperatives in Rwanda was less development of the cooperatives in Rwanda. Objectives of the study were: To evaluate the level of cash conversion cycle in Rwanda agricultural rice cooperatives, to analyze the level of financial performance of Rwandan agricultural rice cooperatives as influenced by the cash conversion cycle, to assess if the cash conversion cycle has a significant relationship on performance of Rwandan agricultural rice cooperatives when average age of inventory, average payment period and average collection period are considered separately and to establish the relationship between cash conversion cycle and financial performance of Corimak and Coproriz Ntende in Gatsibo district. The population of the study was managers and heads of departments of the two selected cooperatives. The study adopted purposive sampling technique. Documents and interview were used to collect data. Financial ratios and Multi-linear regression were used to analyze and compare the performance of the two cooperatives. Findings show that cash conversion cycle has a significant relationship on financial performance of agriculture rice cooperatives. Though there is a significant relationship, researchers have identified some weakness and recommendations of strengthening performance of agricultural cooperatives through cash conversion cycle were given.

Keywords: Cash Conversion Cycle, Financial Performance

Citation: Uwimana Jeannine and Butera Edison. 2018. The Effect of Cash Conversion Cycle on Financial Performance of Selected Agricultural Rice Cooperatives in Rwanda A Case Study: Corimak and Coproriz Ntende. International Journal of Recent Innovations in Academic Research, 2(6): 144-177.

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Introduction

The working capital management theory is based on the traditional models of the cash conversion cycle that is initiated by (Richards and Laughlin, 1980). Richards and Laughlin (1980) presented the idea of cash conversion cycle as a tool for measuring the liquidity management and performance of a company. Gentry (1990) suggested that cash conversion cycle affects the market value of a firm. Performance of the agricultural commodities is objectively influenced by a range of non-financial factors which are not possible to be managed from the side of a business entity (Beranová, 2011). Typical example of such

influence is the weather but financial performance of an agricultural enterprise is influenced with natural conditions in general. For this reason the two statistical sets of agricultural enterprises have been created and consists of agricultural enterprises farming under different natural conditions in different regions (Beranová, 2011).

The wish to transform the agricultural sector in Africa dates back to the colonial era when European settlers saw the potential of turning agricultural products into the backbone of their new economies (Flygare, 2007). One of the main components in these modernization efforts was the promotion of agricultural cooperatives as a way to market African produce overseas and increase the Africans' participation in the sector (Wanyama *et al.*, 2009). During the time of independence, cooperatives were chosen by new governments as a tool to enhance rural development on the continent. However, cooperative's efforts yielded poor results during the following decades due to the top-down state led manner in which the movement was driven (Flygare, 2007).

This state control eventually led to many African cooperatives' collapse in the beginning of 1990s followed by a reformation of the movement. In line with the liberalization of African economies during the same period, the state control withdrew and cooperatives were promoted as "private commercially autonomous and member based organizations that would be democratically and professionally managed, self-controlled and self-reliant (Wanyama *et al.*, 2009). Consequently, despite weak performance of cooperatives in the past, the movement is today on the rise under a market oriented framework and a growing support is targeting smallholder cooperatives in Sub-Saharan Africa (Chirwa *et al.*, 2005). Flygare (2007) cooperatives are seen as a key feature in rural development and poverty alleviation through being channels for community participation where members can coordinate their efforts and gain economic benefits beyond their reach as individuals (Wanyama *et al.*, 2009).

Many traditional forms of cooperation have survived the impact of colonialism and the adverse consequences of the structural adjustment policies. In some instances, these organizations have paved the way for the emergence of modern unions and federations, resulting into the structural reorganizations of the cooperative movement (Borzaga and Galera, 2014). Today, we observe a renewed interest in cooperatives by international agencies, civil society organizations, and farmers' movements in most African countries. Traditional systems of cooperation, mutuality, reciprocity and solidarity exist in all African societies, and they have remained vibrant till today, in particular in rural areas and in the urban informal economy (International Labour Organization, 2014).

In South Africa, a total of 488 cooperatives have benefited from the Cooperative Incentive Scheme (CIS), (R92 523 million) and 230 Agricultural cooperatives benefited, constituting 47% of the budget; R25 million was spent in Limpopo province (Department of Trade and Industry, 2012). Thus the South African government has invested substantial amounts of money in smallholder farmer cooperatives. In Malawi, The performance of the selected smallholder agriculture cooperatives was also influenced by organizational and management problems (Food and Agriculture Organization, 2012). Organizational problems gave rise to low levels of equity and debt capital, reliance on government funding, low levels of investment, and subsequent loss of members. Management problems were strongly linked to low levels of education, lack of production and management skills training and weak marketing arrangements FAO (2012). Khan and Jain (2011) emphasized that the cash conversion cycle is the heart of the need for working capital. They defined operating cycle as

the continuing flow of cash to suppliers, to inventory, to accounts receivable and back into cash.

In East Africa research has been done on performance of the agricultural cooperatives. Agricultural development plays a pivotal role in reducing poverty, providing employment opportunities and ensuring food security. According to the Kenya Economic Report (2013), like in many other developing and less developed countries, the role and contribution of the agriculture sector in Kenya is greatly significant. The performance of rice cooperatives in Kenya increased from 40.3 percent in 2012 and 43.6 percent in 2013 (Kenya Institute for Public Policy Research and Analysis, 2013). The traditional link between the cash conversion cycle and the firm's profitability is that shortening the cash conversion cycle increases firm's profitability (Abdusalam, 2013).

On the other hand shortening the cash conversion cycle could harm the firm's operations and reduce profitability. This could happen when taking actions to reduce the inventory conversion period, a firm could face inventory shortages; when reducing the receivable collection period, a firm could lose its good credit customers; and when lengthening the payable deferral period a firm could harm its own credit reputation (Abdusalam, 2013). However, identifying optimal levels of inventory, receivables, and payables where total holding and opportunities cost are minimized and recalculating the cash conversion cycle according to these optimal points provides more complete and accurate insights into the efficiency of working capital management. In this regard, we suggest an optimal cash conversion cycle as more accurate and comprehensive measure of working capital management (Abdusalam, 2013).

Rice in Tanzania is the second most important food crop after maize, being grown by 18% of the farming households and is more marketed than maize. The quantity of marketed rice is approximately 42% of the total production while that of maize is 28%, thus being more commercialized than maize (Monitoring and Analyzing Food and Agricultural Policies, 2013). The rice sub sector contributes 2.67% on the country's Gross Domestic Product (European Cooperative for Rural Development, 2012). Rice production is predominantly dominated by smallholder farmers both under rain-fed (up-land and lowland) and irrigated (low-land) production contributing more than 90 percent in domestic production (EUCORD, 2012).

The beginning of the cooperative movement in Uganda can be traced back to 1913, when the first Farmers' Association was founded by African farmers FAO (2014). They became known as "The Kinuakulya Growers". This was in response to the exploitative colonial marketing systems that were against the native farmers, who produced the cash crops, but benefited European and Indian middlemen, who would concentrate on processing and marketing (FAO, 2014). In recent years, the Ugandan government has shown commitment to reviving the cooperative sector. Kwapong and Korugyendo (2010) provides guidelines for a cooperative development in Uganda. The general objective of the Government is to develop and strengthen the cooperative movement to enable it to play a leading role in poverty alleviation, employment creation and social-economic transformation of the country.

Agricultural cooperatives in Rwanda experience poor performance despite the fact that these cooperatives are promoted by two parallel tracks, an NGO track and a government track (Rwanda cooperative Agency, 2011). Rice was only introduced in Rwanda in the 1950s, later turning out to be among Rwanda's staple foods like it is in more than half the world's

population (Kathiresan, 2010). Rice is almost exclusively grown in marshlands at an altitude of 800 to 1200 m above mean sea levels over two seasons; wet (A; March-August) and dry seasons (B; September-January) and it is mainly cultivated by resource-poor smallholder's farmer who grow the crop through farmer-cooperative schemes set up the Government (Kathiresan, 2013).

National Institute of Statistics of Rwanda (2011) states 84.9 % of Gatsibo population both men and women basically depend on agriculture whom, at least 80% use traditional agriculture practices and constrained by inaccessibility of credit to small scale farmers, weak agricultural value chains and thus limit the production and value addition potentialities of crops and livestock products yet the majority of farmers are grouped in various agricultural cooperatives. Therefore, the study aims at finding the effect of cash conversion cycle and performance of agricultural rice cooperatives in Rwanda.

Statement of the Problem

François Kanimba, the former Minister of Trade and Industry and East African Community Affairs confirms the mismanagement of cooperative resources that needs to be eradicated (Umucunguzi, 2017). Musabwa (2016) confirms also the low development of cooperatives. There is also complains of farmers on the price of rice saying it is not commensurate with the effort put into the farming activities. For a kilogram of rice, a farmer gets RWF 250, from which RWF15 is deducted for the rice cooperatives operation costs. According to Gain Nicola Francesco, a senior technical advisor at cooperative Agribusiness Development, the common challenge faced by cooperatives is that farmers sell off the produce to middlemen at low prices whenever they need money in cases of emergency (Tumwebaze, 2018). Therefore, there is a need of this researches taking evidence from cash conversion cycle on financial performance of agricultural rice cooperatives in Rwanda.

Objectives of the Study

This study has the following questions:

1. To evaluate the level of cash conversion cycle of rice cooperatives of CORIMAK and Coproriz-Ntende in Gatsibo district.
2. To evaluate the level of financial performance of selected rice cooperatives Corimak and Coproriz-Ntende in Gatsibo district.
3. To evaluate the level of significance between cash conversion cycle when sub variables (average age of inventory, average payment period and average collection period) are considered separately (individually) and financial performance of Corimak and Coproriz-Ntende in Gatsibo district.
4. To evaluate the level of significance between cash conversion cycle and financial performance of Corimak and Coproriz Ntende in Gatsibo district.

Researchers assume that there is no significant relationship between cash conversion cycle, when sub variables (average age of inventory, average payment period and average collection period) are considered separately (individually) and financial performance of cooperative Corimak and Coproriz-Ntende in Gatsibo district. And there is no significant relationship between cash conversion cycle and financial performance of cooperative Corimak and Coproriz-Ntende in Gatsibo district.

Significance of the Study

The research highlights the driving forces for joining agricultural rice cooperatives in rural areas. It is beneficial in one way or another to Minagri, Coproriz Ntende, Corimak, and to

find solutions to improve their financial performance. This study will add to existing knowledge of research and to put into practices what a researcher learned theoretically. And also increases researcher's research ability, skills and knowledge. This study will also help the members of cooperatives to know their problems as identified by the researcher and how overcome to those problems.

Cash Conversion Cycle Theory

Cash conversion theory was propounded by (Blinde and Maccini, 2001). Cash conversion cycle theory is the time it takes a company to convert its resource inputs into cash. It evaluates how effectively a firm is managing its working capital. In most cases, a company acquires inventory on credit, which results in accounts payable. A firm can also sell products on credits, which results in accounts receivable. Cash, therefore, is not involved until the firm pays the accounts payable and collects accounts receivable. So the cash conversion cycle measures the time between outlay of cash and cash recovery (Siddique *et al.*, 2009). This cycle is essential for retailers and similar businesses, It is essential for retailers and similar businesses. This measure describes how quickly a company can convert its products into cash through sales. The shorter the cycle, the less time capital is tied up in the business processes and thus the better for the company's bottom line (Wang, 2002).

The proponents of this theory argue that a short cycle allows a business to quickly acquire cash that can be used for additional purchases or debt repayment. The lower the cash conversion cycle, the more healthy a company generally is. Businesses attempt to shorten the cash conversion cycle by speeding up repayments from customers and showing down payments to suppliers. Cash conversion cycle can even be negative; for instance, if the company has strong market position and can dictate purchasing terms to suppliers that is it can postpone its payments (Brennan, 2003).

Working Capital Management Theory

The working capital management theory is based on the traditional models of the CCC that is initiated by (Richards and Laughlin 1980). It is a great measure to know that how fine a corporation is organizing its working capital (Nobanee *et al.*, 2011). Gitman (2009) Concluded that CCC is the most important aspect in WCM. In fact, it tells about the investment and credit decisions in the customer, inventory and suppliers, which show average number of days started from the date when the firm starts payments to its suppliers and the date when it begins to receive payments from its regulars.

Value Chain Theory

Porter (1985) value chain theory considers a firm as composed of discrete but related internal and external activities including aspects like receivables management, cash management, payables management and inventory management. This theory provides a method of breaking down this value creating chain of activities in strategically relevant activities in order to understand the behavior of costs and the sources of differentiation for the firm to remain competitive. A firm's success depends on how efficiently it manages its internal and external activities, which Porter (1985) divide into primary and support activities. According to Porter, primary activities are the activities involved in the products physical creation, sale, and transfer and after sales service. Porter divides a firm's primary activities into inbound logistic, operations, outbound logistics marketing, sales and after sale services. Support activities according to porter activities that help activities and each other.

Cash Theory

Cash include money at hand, petty cash, bank account balance, customer, customer cheque; it includes also a portion of unutilized portion of an overdraft facility or line of credit. Davidson (1992) defined cash management as a term which refers to the collection concentration and disbursement of cash. It encompasses a company's level of liquidity, management of cash balance and short term strategies. Pindalo (2004) also defines cash management is as part of working capital that makes up the optimal level needed by a company. Bort (2004) Noted that, cash management is of importance for both new and growing a business. Companies may suffer from cash flow problems because of lack of margin of safety in case of anticipated expenses such that they experience problems in finding the funds for innovation or expansion. Weak cash flow makes it difficult to hire and retain good employees (Beranek, 2000).

Ross (2000) says that, it is only natural that major business expenses are incurred in the production of goods or the provision of services. In most cases, a business expenses before corresponding payment is received from customers. In addition, employee salaries and other expenses drain considerable funds from business. These make effective cash management an essential part of the business financial planning. Bort (2004) Argues cash is the lifeblood of the business. The key to successful cash management lies in tabulating realistic projections, monitoring collections and disbursements, establishing effective billing and collection measures, and adhering to budgetary parameters because cash flow can be a problem to the business organization.

Account Receivables Management Theories

Several theories studies attempt to explain why firms extend trade credit to customers. The theories that explain this are the transaction cost theory. Ferris (1981) argues that the existence of trade credit allows flexibility in payment and makes it possible to cumulate payment of several successive supplies to be paid at once, thus leading to saving of transaction costs. Furthermore, trade credits allow buyers to hold smaller cash balances and save money accordingly. Other versions relate to the seasonality in the consumption pattern of the selling firm. The other is the financial model based on capital market imperfection relating to information asymmetries. Schwartz (1974) Suggests that firm with better access to institutionalized capital and lower cost of financing will offer trade credits to customers with high costs when borrowing from financial intermediaries. It may also argued that trade credit can help to mitigate credit rationing while providing a signal on buyer's good quality to financial intermediaries in information acquisition and controlling of the buyer.

Operating Cycle Theory

Operating cycle (OC) is time from beginning of the production process to collection of cash from the sale of the finished product in a typical business (Gitman, 2009). The OC consists of two major short-term asset categories such "inventory" (AAI) and the average collection period (ACP). The operating cycle can be algebraically denoted as:

$$OC=AAI+ACP$$

The Pecking Order Theory

In corporate finance, pecking order theory or pecking order model postulates that the cost of financing increases with asymmetric information. Financing comes from three sources, internal funds, debt and new equity. Companies prioritize their sources of financing, first preferring internal financing, and then debt, lastly raising equity as a "last resort". Hence:

internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued.

This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity. If external financing is required equity would mean issuing shares which meant 'bringing external ownership' into the company. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this overvaluation. As a result, investors will place a lower value to the new equity issuance.

Conceptual Framework

A conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas (Patricia and Nandhini, 2013).

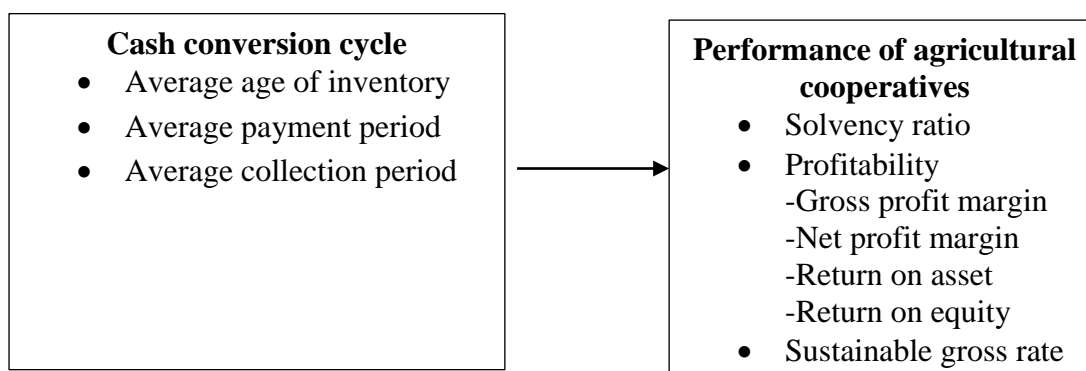


Figure 1. Conceptual framework
(Sources: Researcher’s compulsion 2018)

Scope of the Study

This study focused on effect of cash conversion cycle on financial performance of selected agricultural rice cooperatives in Rwanda. Case study of rice cooperatives of Coproriz- Ntende and Corimak located in Gatsibo district, Eastern Province. The study used financial statement of the two cooperatives from 2013 to 2017.

Limitation of the study

The study was limited to secondary data which were financial statements, in some instances those financial statements are prepared in vague. These issues could lead to poor preparation and misinterpretation of the ratios. The study was also limited to busy people whom in fact, are not free and seen as the researcher would have wished to have more time with them. Some information was not given to the researcher due to the confidentiality of the business and privacy. In one way or other, the respondents hesitated thinking the researcher was a government official trying to investigate the business.

Materials and Methods

This is was a quantitative and a qualitative research. It used explanatory, regression and correlation research design to assess the cash conversion cycle of agricultural rice

cooperatives and the performance of the two cooperatives to assess also the relationships between cash conversion cycle of agricultural rice cooperatives and their performance.

The research used all financial documents that are found in the two Cooperatives: Corimak and Coproriz-Ntende. Researchers also conducted interview in 9 head of departments and managers selected in those two cooperatives purposively as table 1 indicates it. Purposive sampling technique was applied in this research, since it helps to ensure the accurate and correctness of the data which are collected.

Table 1. Sample Size

	Corimak	Coproriz Ntende	Sample size
Head of departments	1	1	2
Managers	2	5	7
Total	3	6	9

Source: Corimak and Coproriz Ntende (2018)

Research Instruments

Primary and secondary instruments were used for data collections. As primary source of data, researchers used interview. Therefore, structured interview were conducted to some the head of departments of cooperatives and finance managers. As secondary source of data researchers used documents such as financial statements of the year from 2013 to 2017 of the two cooperatives.

Statistical Treatment of Data

Under this research, the data was analyzed by using SPSS version 22.0 (Statistical Package for Social Science). ANOVA was used to provide statistical analysis of data. In the presentation of findings, analysis and interpretation, the data was analyzed using ratios and regression analysis. Financial statements were analyzed using ratios and multi-linear regression was used. Objective one and two were analyzed using ratios and objective three was analyzed using multi-linear regression analysis and four was analyzed using Pearson correlation.

Results

Primary and Secondary Data Analysis

Data was analyzed using ratios retrieved from financial statements of the two cooperatives. Findings of Interview were also used to support findings from financial analysis.

Level of cash conversion cycle for the year 2017 in Coproriz-Ntende

As stipulated, the level of cash conversion cycle were measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{15,346,317}{15,380,740} \times 365 = 364 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 364 days; this means that Coproriz-Ntende takes approximately one year to sell a piece of inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{1,403,757}{15,380,740} \times 365 = 33 \text{ days}$$

Average payment period means the average period taken by Coproriz-Ntende to pay its creditors. The shorter the payment period the better, in Coproriz-Ntende, it takes approximately one month to pay its creditors.

Interview revealed that:

“We pay our suppliers in two weeks or approximately in one month, our suppliers are those who give us paddy”

“Having inventory which takes long time means that “The price of rice in Rwanda is determined based on the price of rice from outside of the country. When price of rice from outside of Rwanda is low; the rice industries in Rwanda lose the market. In this case, the inventory can take some time even it can take 12 months when we are waiting the market to be settle. In this regard, cooperatives survive using credit line, bank loans, donations to be paid back and donations not to be paid back. Donations are given by RSSP, USADF and revolving funds of USAID”.

In line with Owolabi and Obida (2012) where the period is shorter than the debtors ‘collection period it exerts pressure on the liquidity of the company. The average payment period ratio represents the number of days by the firm to pay its creditors. A high creditor’s turnover ratio or a lower credit period ratio signifies that the creditors are being paid promptly (Opoku, 2015).

$$\text{Avg Collection Period} = \frac{\text{Account receivables}}{\text{Net Sales}} \times 365 \text{ days} = \frac{70,362,158}{195,158,571} \times 365 = 132 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Coproriz-Ntende, it takes 132 days which is approximately four months and two weeks to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Interview revealed that:

“They supply rice to the industries and we do voucher and pay us within two weeks up to one month. Customers from industries pay us within one week or one month and sometimes pay us in advance. Customers in the hotel give us an order and after accepting the order, after we accept the order we receive them and work upon it. Government and non-government organization pay us within one month, and passengers buy and pay directly and some of them don’t pay”

“The policy of the cooperative states that suppliers should be paid within two weeks and one month. The policy also states that customers should pay within one week to one month”

According to the ratios and the results, the interview contradicts the ratios calculated. The study proceeded to ask why the results calculated using ratios contradicted the interview and they revealed that:

“The price of rice in Rwanda is determined based on the price of rice from outside of the country. When the price of rice from outside of Rwanda is low; the rice industries in Rwanda lose the market. When they lose the markets, therefore, the rice industries in Rwanda delay to

pay the cooperatives and this can take approximately five months. In this case, cooperatives find ways of paying the suppliers by using credit line, bank loans, donations to be pay back and donations not to be paid back. Donations are given by RSSP, USADF and revolving funds of USAID”

As supported by Opoku (2015) the average collection period is the number of days on average that it takes a company to collect its credit accounts or its accounts receivables. In other words, the average collection period of accounts receivable is the average number of days required to convert receivables into cash. The average collection period is the average number of days required to collect invoiced amounts from customers. The measure is used to determine the effectiveness of a company’s credit granting policies and collection efforts (Bragg, 2018).

Level of cash conversion cycle for the year 2017 in Corimak

As stipulated, the level of cash conversion cycle were measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{867,000}{63,091,600} \times 365 = 5 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 5 days; this means that Corimak took only five days to sell its inventory.

Average payment period was no need to be calculated because Corimak during 2017 had no account payable.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{2,633,706}{41,119,617} \times 365 = 23 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Corimak, it took 23 days which is approximately three weeks to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Having average collection period of 23 days confirm the statement of the problem which says that Corimak cooperative has poor performance because Corimak during 2017 had no account payable.

Interview revealed that:

“In fact, we have our ways of receiving cash for cars, they rent and pay cash immediately, for fish they rent per year and pay in advance before starting the business, for house rent they pay also in advance, for bananas they pay in advance also therefore we pay immediately our suppliers using cash we receive in advance from fish, bananas and other services paid to us in advance”

As supported by Owolabi and Obida (2012), the shorter the period, the better for the organization. Account receivables with longer recoverable period possess the risk of bad debts for the company and also affect liquidity in the short run.

Level of financial performance for the year 2017 in Coproriz-Ntende

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{6,109,623 + 38,197,952}{361,619,436} \times 100 = 12\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Coproriz-Ntende; it means the cooperative is not health thus; the company is not able to pay its long-term liabilities.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} = \frac{44,307,575}{195,158,571} = 23\%$$

Generally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Coproriz-Ntende, for every Rwandan franc generated in sales, the company has 23 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{6,109,623}{195,158,571} = 3.13\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Coproriz-Ntende, 3.13% means that a company has 0.0313Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net Profit After tax}}{\text{Total assets}} = \frac{6,109,623}{687,288,174} = 0.8\%$$

As you can see, Coproriz-Ntende return on asset ratio is $0.0088 \times 100 = 0.88$ percent, in other words; every Rwandan franc that Coproriz-Ntende invested in asset during the year produced 0.88% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{6,109,623}{326,912,266} = 0.019 \times 100 = 1.9\%$$

After preferred dividends are removed from net income, Coproriz-Ntende ratio is 0.019. This means that every Rwandan franc of common shareholders equity earned about 0.0388. In order words, shareholders saw 1.9% return on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 1.9 \times (1 - 0) = 1.9\%$$

The SGR calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Coproriz-Ntende grew at 1.9% and this growth is very low.

Level of financial performance for the year 2017 in Corimak

Solvency ratio was not calculated because Corimak had no short-term liabilities and long-term liabilities.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} = \frac{3,013,564}{41,119,617} = 7.32\%$$

Generally the higher gross profit margin the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In CORIMAK, for every franc generated in sales, the company has 7.32 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{1,326,945}{41,119,617} = 3.22\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Corimak, 3.22% means that a company has 0.0322 Rwf of net income for every Rwf of sales.

Interview revealed that:

"I may not know if our cooperative benefited or not because we are doing the evaluation"

"When you see the price is good it's because before selling we agree on the price. As per now the price is fair and 1kg is 290rwf, they can add even 2,5,10 and 20 as long as we agree. You see on 1kg of rice, 15 Rwf goes in the cooperative and 250 Rwf goes to 1 acre of land for splashing the rice"

As supported by Reddy (2013) net profit margin is calculated as the ratio between net profit and net sale. In another word, this ratio shows how much each Rwandan franc earned by a company can be converted into profit which excludes all expenses. It is also the measure how profitable a company is after deducting all expenses, taxes, and interest and preferred stock dividends.

$$\text{Return on asset} = \frac{\text{Net Profit After tax}}{\text{Total assets}} = \frac{1,326,945}{77,467,355} \times 100 = 1.71\%$$

As indicated, Corimak return on asset ratio is $0.017 \times 100 = 1.71$ percent, in order words; every Rwandan franc that Corimak invested in asset during the year produced 1.71% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{1,326,945}{77,467,355} = 0.017 \times 100 = 1.71\%$$

When preferred dividends are removed from net income, Corimak's ratio is 0.017. This means that every Rwandan franc of common shareholders equity earned about 0.017. In order words, shareholders saw 1.71% return on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 1.71 \times (1 - 0) = 1.71\%$$

The sustainable growth rate calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate

sales as quickly as the organization allows. This means that Corimak grew at 1.71% and this growth is very low.

Table 2. Comparison of the findings for the year 2017

S/N	Ratio	CoprORIZ-Ntende	Corimak
1	Average age of inventory	364 days	5 days
2	Average payment period	33 days	0 days
3	Average collection period	132 days	23 days
4	Solvency ratio	12%	0%
5	Gross profit margin	23%	7.32%
6	Net profit margin	3.13%	3.22%
7	Return on asset	0.8%	1.71%
8	Return on equity	1.9%	1.71%
9	Sustainable gross rate	1.9%	1.71%

Source: Financial statements of Coproziz-Ntende and Corimak, 2017

Level of cash conversion cycle for the year 2016 in Coproriz-Ntende

As stipulated, the level of cash conversion cycle was measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{97,600}{165,136,149} \times 365 = 0.215 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 0.215 which is approximately five hours; this means that Coproriz-Ntende takes approximately five hours to sell a piece of inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{37,845,801}{165,136,149} \times 365 = 84 \text{ days}$$

Average payment period means the average period taken by Coproriz-Ntende to pay its creditors. The shorter the payment period the better, in Coproriz-Ntende, it took approximately three months to pay its creditors.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{59,417,334}{549,892,105} \times 365 = 39 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Coproriz-Ntende, it took 39 days which is approximately 1 month and nine days to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Level of cash conversion cycle in Corimak for the year 2016

As stipulated, the level of cash conversion cycle were measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{2,292,160}{72,635,000} \times 365 = 12 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 12 days; this means that CORIMAK took only twelve days to sell its inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{12,375,000}{72,635,000} \times 365 = 62 \text{ days}$$

Average payment period means the average period taken by Corimak to pay its creditors. The shorter the payment period the better, in Corimak, the cooperative in the year 2016 paid the creditors within two months.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{2,323,136}{33,044,321} \times 365 = 26 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Corimak, it took 26 days which is approximately one month to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Level of financial performance for the year 2016 in Coproriz-Ntende

$$\text{Solvency ratio} = \frac{\text{Net after tax incime} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{37,174,800 + 26,328,434}{38,833,765} \times 100 = 163\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Coproriz-Ntende; it means the cooperative is health thus; the company is able to pay its long-term liabilities.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100 = \frac{63,503,234}{549,892,105} = 12\%$$

Generally, the higher the gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Coproriz-Ntende, for every franc generated in sales, the company has 12 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{37,174,800}{549,892,105} = 7\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Coproriz-Ntende, 7% means that a company has 0.07Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net income after tax}}{\text{Total assets}} = \frac{37,174,800}{371,449,452} \times 100 = 10\%$$

The results above in Coproriz-Ntende return on asset ratio are $0.1 * 100 = 10$ percent, in order words; every Rwandan franc that COPRORIZ-NTENDE invested in asset during the year produced 10% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{37,174,800}{332,615,777} \times 100 = 11\%$$

The ratio calculated showed that after preferred dividends are removed from net income, Coproriz-Ntende ratio is 0.11. This means that every Rwandan franc of common shareholders equity earned about 0.11. In order words, shareholders saw 11% return on their investment. Sustainable growth rate= Sustainable growth rate= Return on Equity \times (1–Dividend Pay-out Ratio) = 11% \times (1-0.22) = 8.58%

The SGR calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Coproriz-Ntende grew at 8.58% and this growth is very good.

Level of financial performance for the year 2016 in Corimak

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{2,358,690 + 2,043,002}{12,375,000} \times 100 = 36\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Corimak; it means the cooperative is more health thus; the company is able to pay its long-term liabilities. In CORIMAK in the year 2016 it has liabilities. However, the company was doing well because its solvency ratio was 36%.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} = \frac{4,401,692}{33,044,321} = 13.32\%$$

Generally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Corimak, for every franc generated in sales, the company has 13.32 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{2,358,690}{33,044,321} = 7.13\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Corimak, 7.13% means that a company has 0.0713 Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net Profit After tax}}{\text{Total assets}} = \frac{2,358,690}{93,208,783} \times 100 = 2.53\%$$

The same as in Corimak return on asset ratio is 0.0253*100=2.53 percent, in order words; every Rwandan franc that Corimak invested in asset during the year produced 2.53% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{2,358,690}{80,833,783} = 3\%$$

From the bottom line and after preferred dividends are removed from net income, Corimak's ratio is 0.03. This means that every Rwandan franc of common shareholders equity earned about 0.03. In other words, shareholders saw approximately 3% return on their investment.

Sustainable growth rate = Sustainable growth rate = Return on Equity \times (1 - Dividend Pay-out Ratio) = 3% \times (1 - 0) = 3%

The sustainable growth rate calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that CORIMAK grew at 3% and this growth is very good.

Table 3. Comparison of the findings for the year 2016

S/N	Ratio	Coprroziz-Ntende	Corimak
1	Average age of inventory	0.215 days	12 days
2	Average payment period	84 days	62 days
3	Average collection period	39 days	26 days
4	Solvency ratio	163%	36%
5	Gross profit margin	12%	13.32%
6	Net profit margin	7%	7.13%
7	Return on asset	10%	2.53%
8	Return on equity	11%	3%
9	Sustainable gross rate	8.58	3%

Source: Financial statements of Coproziz-Ntende and Corimak, 2016

Level of cash conversion cycle for the year 2015 in Coproziz-Ntende

As stipulated, the level of cash conversion cycle were measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{127,634,380}{166,333,926} \times 365 = 280 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 280 days; this means that COPRORIZ-NTENDE takes approximately 9 months to sell a piece of inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{3,500,000}{166,333,926} \times 365 = 8 \text{ days}$$

Average payment period means the average period taken by Coproziz-Ntende to pay its creditors. The shorter the payment period the better, in Coproziz-Ntende, it takes approximately one week to pay its creditors.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{13,375,614}{364,619,314} \times 365 = 13 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Coproziz-Ntende, it took 13 days which is approximately two weeks to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection

period. A low average collection period indicates that the organization is collecting payments faster.

Level of cash conversion cycle in Corimak for the year 2015

As stipulated, the level of cash conversion cycle were measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{11,577,285}{79,995,000} \times 365 = 53 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 53 days; this means that Corimak took approximately two months to sell its inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{13,179,145}{79,995,000} \times 365 = 60 \text{ days}$$

Average payment period means the average period taken by CORIMAK to pay its creditors. The shorter the payment period the better, in CORIMAK, it takes two months only to pay its creditors.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{32,647,572}{36,370,752} \times 365 = 328 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Corimak, it takes 328 days which is approximately one year to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Having the inventory of 53 days, average payment period of 60 days and average collection period of 328 days confirms the poor performance of the cooperatives and in this case, cooperatives survive using donations.

Level of financial performance for the year 2015 in Coproziz-Ntende

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{57,355,184 + 31,888,498}{113,676,243} \times 100 = 57\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Coproriz-Ntende, it means the cooperative is not healthy thus; the company is able to pay its long-term liabilities because the solvency ratio of 57% is above the minimum accepted benchmark.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100 = \frac{98,940,666}{364,619,314} \times 100 = 27\%$$

Normally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Coproriz-Ntende, for every franc generated in sales, the company has 27 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{57,355,184}{364,619,314} = 16\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Coproriz-Ntende, 16% means that a company has 0.16Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net income after tax}}{\text{Total assets}} = \frac{57,355,184}{441,006,560} \times 100 = 13\%$$

As you can see, Coproriz-Ntende return on asset ratio is $0.13 \times 100 = 13$ percent, in order words; every Rwandan franc that Coproriz-Ntende invested in asset during the year produced 13% of the net income.

$$\text{Return on equity} = \frac{\text{Net income after tax}}{\text{Stockholders's equity}} \times 100 = \frac{57,355,184}{337,804,959} = 17\%$$

As known, after preferred dividends are removed from net income, Coproriz-Ntende ratio is 0.17. This means that every Rwandan franc of common shareholders equity earned about 0.17. In order words, shareholders saw 17% return on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 17\% \times (1 - 0) = 17\%$$

The SGR calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Coproriz-Ntende grew at 17% and this growth is very good.

Level of financial performance for the year 2015 in Corimak

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{4,576,325 + 2,494,043}{13,179,145} \times 100 = 5.38\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Corimak; it means the cooperative is not health thus; the company is not able to pay its long-term liabilities. In Corimak in the year 2015 was unable to meet its long term liabilities since its solvency ratio was 4.57% which is below the minimum accepted level of 20%.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} = \frac{7,070,368}{364,619,314} = 1.9\%$$

Sincerely, the higher the gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Corimak, for every franc generated in sales, the company has 1.9 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{4,576,325}{364,619,314} = 1.25\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Corimak, 1.25% means that a company has 0.0125 Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net Profit After tax}}{\text{Total assets}} = \frac{4,576,325}{249,310,470} \times 100 = 1.83\%$$

Corimak return on asset ratio is 0.0183*100=1.83 percent, in order words; every Rwandan franc that Corimak invested in asset during the year produced 1.83% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{4,576,325}{236,131,325} = 1.9\%$$

After preferred dividends are removed from net income, Corimak's ratio is 0.019. This means that every Rwandan franc of common shareholders equity earned about 0.019. In order words, shareholders saw approximately 1.9% return on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 1.9\% \times (1 - 0) = 1.9\%$$

The sustainable growth rate calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Corimak grew quickly at 1.9% and this growth is very low.

Table 4. Comparison of the findings for the year 2015

S/N	Ratio	Coproriz-Ntende	Corimak
1	Average age of inventory	280 days	53 days
2	Average payment period	8 days	60 days
3	Average collection period	13 days	328 days
4	Solvency ratio	57%	5.38%
5	Gross profit margin	27%	1.9%
6	Net profit margin	16	1.25%
7	Return on asset	13%	1.83%
8	Return on equity	17%	1.9%
9	Sustainable gross rate	17%	1.9

Source: Financial statements of Coproziz-Ntende and Corimak, 2015

Level of cash conversion cycle for the year 2014 in Coproriz-Ntende

As stipulated, the level of cash conversion cycle was measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{24,672,245}{879,419,248} \times 365 = 10 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 10 days; this means that Coproriz-Ntende takes approximately one week and three days to sell a piece of inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{20,753,143}{879,419,248} \times 365 = 9 \text{ days}$$

Average payment period means the average period taken by Coproriz-Ntende to pay its creditors. The shorter the payment period the better, in Coproriz-Ntende, it took approximately one week and two days to pay its creditors.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{5,784,859}{979,821,797} \times 365 = 2 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Coproriz-Ntende, it took hours to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Level of cash conversion cycle in Corimak for the year 2014

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{3,911,300}{2,234,000} \times 365 = 640 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 10 days; this means that CORIMAK takes approximately two years to sell its inventory. This is due to the fact that the cooperative has fertilizers which were stocked and took long time.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{17,045,841}{2,234,000} \times 365 = 2785.02 \text{ days}$$

Average payment period means the average period taken by Corimak to pay its creditors. The shorter the payment period the better, in Corimak, it took approximately 7 years to pay its creditors.

This means that some of the creditors were not paid by then; hence this confirms the statement of the problem of poor financial performance.

There was no need to calculate the average collection period since there was no account receivables.

Level of financial performance for the year 2014 in Coproziz-Ntende

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term liabilities} + \text{Long-term liabilities}} = \frac{22,264,538 + 11,232,394}{21,722,863} \times 100 = 154\%$$

A solvency ratio measures company's ability to meet its long-term obligations and short-term liabilities. A solvency ratio greater than 20% is considered financially healthy, in COPRORIZ-NTENDE, it means the cooperative is health thus; the company is able to pay its long-term liabilities. The solvency ratio in 2014 was 154% and it was greater than the minimum accepted level of 20%.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100 = \frac{33,496,932}{979,821,797} = 3.42\%$$

Sincerely, the higher gross profit margin the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Coproriz-Ntende, for every franc generated in sales, the company has 3.42 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{22,264,538}{979,821,797} = 2.27\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Coproriz-Ntende 2.27% means that a company has 0.0227 Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net profit after tax}}{\text{Total assets}} = \frac{22,264,538}{209,318,574} = 11\%$$

Coproriz-Ntende return on asset ratio is 11 percent, in order words; every Rwandan franc that Coproriz-Ntende invested in asset during the year produced 11% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{stockholders' equity}} = \frac{22,264,538}{187,585,711} = 12\%$$

After preferred dividends are removed from net income, Coproriz-Ntende ratio is 0.12. This means that every Rwandan franc of common shareholders equity earned about 0.12. In order words, shareholders saw 12% return on their investment.

$$\text{Sustainable growth rate} = \text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 12\% \times (1 - 0) = 12\%$$

The sustainable growth rate calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that COPRORIZ-NTENDE grew quickly at 12% and this growth is very good.

Level of financial performance for the year 2014 in Corimak

$$\text{Solvency ratio} = \frac{\text{Net after tax incime} + \text{Non-Cash payment}}{\text{Short-term} + \text{Long-term liabilities}} = \frac{-274,939 + 5,698,389}{20,045,370} \times 100 = 27\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in CORIMAK; it means the cooperative is more health thus; the company is able to pay its long-term liabilities. In CORIMAK in the year 2014 was able to meet its long term liabilities since its solvency ratio was 27% which is above the minimum accepted level.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} = \frac{13,792,750}{14,239,750} \times 100 = 97\%$$

Generally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In CORIMAK, for every franc generated in sales, the company has 97cents left over to cover basic operating costs.

Interview showed that:

“Our clients are people buying fish and rent vehicles. In fact, from 15 for each member 4Rwf goes in the Union, 1Rwf goes to the federation at national level”

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{-274,939}{14,239,750} = -1.93\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Corimak, -1.93% means that a company has -1.93 Rwf of net loss for every Rwf of sales.

Interview showed that:

“In our cooperative, we have like 14 books, including those owing us and those whom we owe money. When the accountant gives a loan she records in the books of accounts”

“Some of the challenges in our cooperative is that some seasons are not conducive and if it happens we wait them for the next season. Those whom we owe debts we pay them seasonally”

$$\text{Return on asset} = \frac{\text{Net Profit After tax}}{\text{Total assets}} = \frac{-274,939}{32,951,466} \times 100 = -0.83\%$$

Corimak return on asset ratio is -0.83 percent, in order words; every Rwandan franc that Corimak invested in asset during the year produced a loss of -0.83% of the net loss.

Interview revealed that:

“In some cases, some of the suppliers stay with a purpose of going out for example in Uganda. When they go we lose our money and yet the bank may lose money as we give him collateral. They go without paying but fortunately they leave their land”

“The one who goes out of the country, his land is taken by another one who can pay that debt both for cooperative and the bank”

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{Stockholder's equity}} = \frac{-274,939}{12,906,096} = -2.13\%$$

After preferred dividends are removed from net income, Corimak's ratio is -2.13. This means that every Rwandan franc of common shareholders equity earned about a loss -2.13. In order words, shareholders saw approximately a loss of -2.13% returns on their investment.

Sustainable growth rate = Return on Equity \times (1-Dividend Pay-out Ratio) = -2.13% \times (1-0) = -2.13%

The sustainable growth rate calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate

sales as quickly as the organization allows. This means that Corimak declined quickly at - 2.13% and this decline affects negatively the growth of Corimak.

Table 5. Comparison of the findings for the year 2014

S/N	Ratio	CoprORIZ-Ntende	Corimak
1	Average age of inventory	10 days	640
2	Average payment period	9 days	2,785
3	Average collection period	2 days	0
4	Solvency ratio	154%	27%
5	Gross profit margin	3.42%	97%
6	Net profit margin	2.7%	-1.93
7	Return on asset	11%	-0.83
8	Return on equity	12%	-2.13
9	Sustainable gross rate	12%	-2.13

Source: Financial statements of Coproziz-Ntende and Corimak, 2014

Level of cash conversion cycle for the year 2013 in Coproriz-Ntende

As stipulated, the level of cash conversion cycle was measured using average age of inventory, average payment period and average collection period.

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{14,489,950}{787,303,483} \times 365 = 7 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 7 days; this means that Coproriz-Ntende takes approximately one week to sell a piece of inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{78,559,440}{787,303,483} \times 365 = 36 \text{ days}$$

Average payment period means the average period taken by Coproriz-Ntende to pay its creditors. The shorter the payment period the better, in Coproriz-Ntende, it took approximately one month and one week to pay its creditors.

$$\text{Average collection period} = \frac{\text{Accounts receivables}}{\text{Sales}} \times 365 = \frac{1,111,571}{877,792,919} \times 365 = 0.46 \text{ days}$$

The average collection period represents the average number of days between the date a credit sale is made and the date payment is received from the credit sale. In Coproriz-Ntende, it took 11 hours to collect its accounts receivables. In general, a lower average collection period is more favorable than a higher average collection period. A low average collection period indicates that the organization is collecting payments faster.

Level of cash conversion cycle in Corimak for the year 2013

$$\text{Average age of inventory} = \frac{\text{Inventory}}{\text{Purchases}} \times 365 \text{ days} = \frac{2,124,300}{71,145,520} \times 365 = 11 \text{ days}$$

Average age of inventory determines the efficient in sales; the faster a company can sell its inventory the more profitable it is. In this cooperative, the average age of inventory is 11 days; this means that Corimak took approximately 11 days to sell its inventory.

$$\text{Average payment period} = \frac{\text{Account Payable}}{\text{Purchases}} \times 365 \text{ days} = \frac{24,071,608}{71,145,520} \times 365 = 123 \text{ days}$$

Average payment period means the average period taken by Corimak to pay its creditors. The shorter the payment period the better, in Corimak, it took approximately four months to pay its creditors.

There was no need to calculate the average collection period, because there were no account receivables. This implied that customers used to pay in advance before buying items and rendered services.

According to interview, "he cited that customers pay in advance before getting items and services from the cooperative"

Level of financial performance for the year 2013 in Coproziz-Ntende

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term liabilities} + \text{Long-term liabilities}} = \frac{20,070,971 + 12,029,649}{90,003,802} \times 100 = 36\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in COPRORIZ-NTENDE, it means the cooperative is health thus; the company is able to pay its long-term liabilities because its solvency ratio is 36% and it's beyond the minimum accepted.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100 = \frac{32,100,620}{877,792,919} = 3.65\%$$

Generally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In Coproriz-Ntende, for every franc generated in sales, the company has 3.65 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{20,070,971}{877,792,919} = 2.28\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In Coproriz-Ntende a 2.28% means that a company has 0.0227 Rwf of net income for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net profit after tax}}{\text{Total assets}} = \frac{20,070,971}{226,387,103} = 9\%$$

As you can see, Coproriz-Ntende return on asset ratio is 9 percent, in order words; every Rwandan franc that Coproriz-Ntende invested in asset during the year produced 9% of the net income.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{stockholders' equity}} = \frac{20,070,971}{136,374,301} = 15\%$$

As you can see after preferred dividends are removed from net income, Coproriz-Ntende's ratio is 0.14. This means that every Rwandan franc of common shareholders equity earned about 0.14. In order words, shareholders saw 14% return on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = 15\% \times (1 - 0) = 15\%$$

The SGR calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Coproriz-Ntende grew quickly at 15% and this growth is very good.

Level of financial performance for the year 2013 in Corimak

$$\text{Solvency ratio} = \frac{\text{Net after tax income} + \text{Non-Cash payment}}{\text{Short-term liabilities} + \text{Long-term liabilities}} = \frac{-186,423 + 7,238,320}{24,071,608} \times 100 = 29\%$$

A solvency ratio measures company's ability to meet its long-term obligations. A solvency ratio greater than 20% is considered financially health, in Corimak, it means the cooperative is health thus; the company is able to pay its long-term liabilities because its solvency ratio is 29% and it's beyond the minimum accepted level of performance.

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}} \times 100 = \frac{19,397,144}{90,103,364} = 22\%$$

Generally, the higher gross profit margin, the better. A higher gross profit margin means a company did well in managing its cost of sales. It also shows that a company has more to cover for operating, financing and other costs. In CORIMAK, for every Rwandan franc generated in sales, the company has 22 cents left over to cover basic operating costs.

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Net sales}} = \frac{-186,423}{90,103,364} = -0.21\%$$

Net profit margin is one of the most important indicators of business's financial health. By tracking increases and decreases in its net profit margin, a business can assess whether or not current practices are working and forecast profits based on revenues.

In CORIMAK, -0.21% means that a company has -0.21 Rwf of net loss for every Rwf of sales.

$$\text{Return on asset} = \frac{\text{Net profit after tax}}{\text{Total assets}} = \frac{-186,423}{36,524,260} = -0.51\%$$

Corimak return on asset ratio is -0.51 percent, in order words; every Rwandan franc that Corimak invested in asset during the year produced a loss of -0.51% of the net loss.

$$\text{Return on equity} = \frac{\text{Net profit after tax}}{\text{stockholders' equity}} = \frac{-186,423}{12,452,652} = -1.5\%$$

After preferred dividends are removed from net income, Corimak’s ratio is -1.5. This means that every Rwandan franc of common shareholders equity earned about a loss of -1.5. In order words, shareholders saw approximately a loss of -1.3% returns on their investment.

$$\text{Sustainable growth rate} = \text{Return on Equity} \times (1 - \text{Dividend Pay-out Ratio}) = -1.5\% \times (1 - 0) = -1.5\%$$

The SGR calculation assumes that a company wants to maintain a target capital structure of debt and equity, keep a static dividend payout ratio and accelerate sales as quickly as the organization allows. This means that Corimak declined quickly at -1.5% and this decline affects the company negatively.

Table 6. Comparison of the findings for the year 2013

S/N	Ratio	Coproriz-Ntende	Corimak
1	Average age of inventory	7 days	11 days
2	Average payment period	36 days	123 days
3	Average collection period	0.46days	0 days
4	Solvency ratio	36%	29%
5	Gross profit margin	3.65%	22%
6	Net profit margin	2.28%	-0.21%
7	Return on asset	9%	-0.51%
8	Return on equity	15%	-1.5%
9	Sustainable gross rate	15%	-1.5%

Source: Financial statements of Coproziz-Ntende and Corimak, 2013

Effect of cash conversion cycle and financial performance of agriculture cooperatives

The effect of cash conversion cycle was measured using regression to determine determinant of coefficients (Model summary), and regression coefficients. Determinant of coefficient (R square) is important in indicating the percentage of the proportion of the total variation in financial performance of agriculture cooperatives that is attributed to the changes in cash conversion cycle.

Table 7. Model Summary of Coproriz -Ntende

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 ^a	1.000	1.000	.00000
a. Predictors: (Constant), Average collection period				

The coefficient of determination which is R square is used to determine the model fit. It is the percentage of the variance in the dependent explained uniquely or jointly by the independent variables. From the findings, R square is 1.000. This means that 100% of the financial performance is explained by the factor variables (Average collection period). This implies that when account receivables are collected very fast and in time and customers pay in time and also in advance the average collection period becomes the most important measurement of cash conversion cycle.

Table 8. Effect of cash conversion cycle when variables are considered separately

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		

1	(Constant)	.000	.000		.	.
	Average collection	1.000	.000	1.000	.	0.000.
a. Dependent Variable: Financial Performance of agriculture cooperatives						

The regression coefficients establish that taking all factors into account average age of inventory, average payment period, and average collection period constant at zero the financial performance will be 0.000. This implies that when there is ignorance of cash conversion cycle the financial performance will also have a problem since it depends on the management of cash conversion cycle in the organization. Average age of inventory and average payment period were statistically excluded and this means that there were insignificant.

Average collection period is positively related with the financial performance of agriculture cooperatives as indicated with a positive coefficient. Average collection period is statistically significant ($p=0.000<0.01$) the findings presented also show that a unit increase in average collection period will lead to 1.000 unit increases in financial performance.

Table 9. Regression analysis when sub variables are considered for Coproriz-Ntende in financial performance

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	R ²
	B	Std. Error	Beta		
Constant	.168	.043	-.892	.005	.796
Cash conversion cycle	.000	.000		.001	
a. Dependent Variable: Gross profit margin					

The analysis from table 9 established that taking into account all factors of financial performance, gross profit remain significant while other variables are statistically insignificant. Gross profit is statistically related with cash conversion cycle in agriculture cooperatives as indicated with a positive coefficient. Gross profit is statistically significant ($p=0.01<0.05$) When taking all variables at constant zero, the cash conversion cycle remains 0.168. In Coproriz-Ntende, financial performance was indicated by the gross profit.

The R square of 0.796 demonstrated that 79.6% of the financial performance is explained by the factor variables gross profit.

Table 10. Regression analysis when sub variables are considered for Corimak

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	R ²
	B	Std. Error	Beta		
Constant	.294	.515	.970	.608	.970
Cash conversion cycle	.3.529	.509		.006	
a. Dependent Variable: Gross profit margin					

The analysis from table 10 established that taking into account all factors of financial performance, gross profit remain significant while other variables are statistically insignificant. Gross profit is statistically related to cash conversion cycle in agriculture cooperatives as indicated with a positive coefficient. Gross profit is statistically significant ($p=0.006<0.05$) When taking all variables at constant zero, the cash conversion cycle remains 0.294 In Corimak, financial performance was indicated by the gross profit.

The R square of 0.970 demonstrated that 97% of the financial performance is explained by the factor variables gross profit.

Table 11. Relationship between cash conversion cycle and financial performance of agriculture cooperatives in Coproriz-Ntende

		Cash conversion cycle	Financial performance of agriculture cooperatives
Cash conversion cycle	Pearson Correlation	1	1.000**
	Sig. (2-tailed)		.000
	N	5	5
Financial performance of agriculture cooperatives	Pearson Correlation	1.000**	1
	Sig. (2-tailed)	.000	
	N	5	5
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 11 shows the relationship between cash conversion cycle and financial performance of agriculture cooperatives. The correlation coefficient indicates a perfect linear relationship between cash conversion cycle and financial performance of agriculture cooperatives ($r=1, p=0.000$).

The P-value 0.000 and Alpha value 0.01 obtained, indicate that the null hypothesis was rejected and accepted the alternative hypothesis since the P-value was less than Alpha.

Effect of cash conversion cycle and financial performance in Corimak

Table 12. Model Summary of Corimak

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 ^a	1.000	1.000	.00000
a. Predictors: (Constant), Average collection period , Average payment period				

The coefficient of determination which is R square is used to determine the model fit. It is the percentage of the variance in the dependent explained uniquely or jointly by the independent variables. From the findings, R square is 1.000. This means that 100% of the financial performance is explained by the factor variables (Average collection period and average payment period). This implies that when account receivables are collected very fast and in time and customers pay in time and also in advance the average collection period becomes the most important measurement of cash conversion cycle. When the cooperative pays in time its suppliers implies that they also supply in time and thus average payment period was significant in the study.

Table 13. Regression Coefficients for Corimak when cash conversion cycle sub-variables are considered separately

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.000	.000		.	.
	Average payment period	1.000	.000	1.000	.	.0.000
	Average collection period	.000	.000	.000	.	.0.000
a. Dependent Variable: Financial performance of agriculture cooperatives						

The regression coefficients in table 13 establish that taking all factors into account average age of inventory, average payment period, and average collection period constant at zero the financial performance will be 0.000. This implies that when there is ignorance of cash conversion cycle the financial performance will also have a problem since it depends on the management of cash conversion cycle in the organization.

Average collection period and average payment period are positively related with the financial performance of agriculture cooperatives as indicated with a positive coefficient. Average collection period and average payment period are statistically significant ($p=0.000<0.01$). The findings presented also show that a unit increase in Average payment period will lead to 1.000 unit increases in financial performance.

Table 14. Relationship between cash conversion cycle and financial performance of agriculture cooperative in Corimak

		Cash conversion cycle	Financial performance
Cash conversion cycle	Pearson Correlation	1	.970**
	Sig. (2-tailed)		.006
	N	5	5
Financial performance	Pearson Correlation	.970**	1
	Sig. (2-tailed)	.006	
	N	5	5
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 14 shows the relationship between cash conversion cycle and financial performance of agriculture cooperatives. The correlation coefficient indicates a perfect linear relationship between cash conversion cycle and financial performance of agriculture cooperatives ($r=0.97$, $p=0.000$).

The P-value 0.000 and Alpha value 0.01 obtained, indicate that the null hypothesis was rejected and accepted the alternative hypothesis since the P-value was less than Alpha. Cash conversion cycle when is seriously managed it increases the level of financial performance.

Summary, Conclusion and Recommendations

This chapter refers to the organized, presented and analyzed data in the preceding chapters. The summary and conclusions are drawn from the discussed findings, in line with the objectives of the study.

Summary

The study was entitled the effect of cash conversion cycle on financial performance of selected agricultural rice cooperatives in Rwanda under four objectives namely: To evaluate the level of cash conversion cycle in Rwanda agricultural rice cooperatives, to evaluate the level of financial performance of Rwandan agricultural rice cooperatives as influenced by the cash conversion cycle, to evaluate if the cash conversion cycle has an effect on performance in Rwandan agricultural rice cooperatives when sub-variables are considered separately and to evaluate the relationship between cash conversion cycle and financial performance of Corimak and Coproriz Ntende in Gatsibo district.

The study findings suggest that the level of the two cooperatives in terms of cash conversion cycle were different and varies year by year, the level of cash conversion cycle in Coproriz-Ntende seemed to be long for the year 2017 due to the loan acquired and seem shorter in the previous years. In CORIMAK, the level of cash conversion cycle seems to be short. The level of financial performance in Coproriz-Ntende is not good for the year 2017 and good for the previous years.

The level of performance of Corimak seen to be good since it hasn't borrowed money from financial institutions for the last five years. This meant that in 2017 Corimak's cash conversion was good. In 2013, Coproriz Ntende's cash conversion was 29 days while 112 was in Corimak. The level of financial performance varied every year in both the two cooperative. The $R^2=1$ in Coproriz-Ntende indicated that average collection period influence financial performance and $R^2=1$ in Corimak also indicated that average payment period influenced its performance.

The study finally showed that in Coproriz-Ntende the $R=1$ which was perfect correlation and in CORIMAK $r=0.97$. Financial performance was explained by gross profit margin with $R^2=0.796$ in Coproriz-Ntende when sub-variables are considered and also $R^2=0.970$ in Corimak when sub-variables are considered. The study further shows that there is a relationship between cash conversion cycle and financial performance since $R= 1$ for Coproriz Ntende and $R=0.97$ for Corimak.

Conclusion

The study concluded that the two cooperatives have good cash conversion cycle since sometimes the average age of inventory, average payment period and average collection period can take shorter time. The study again concluded that the level of cash conversion cycle is high. The study shows that there is a strong positive relationship between cash conversion cycle and financial performance of agriculture cooperative.

This paper adds knowledge on cash conversion cycle by analyzing the relationship between its cash conversion cycle and financial performance as a comparative study of the two cooperatives. The findings suggest that despite the available cash conversion cycle tools used in the cooperatives to manage their finances, there is a higher level of average payment period in the cooperatives when one borrows from financial institutions. However, the results show that focusing on inventory management can increase financial performance of the cooperatives.

When cash conversion cycle variables are considered separately, average collection period remains statistically significant for both Coproriz-Ntende and Corimak. When sub-variables are considered, there was a significant relationship between some of the variable and no

relationship between some of the variables since variable were found to be statically significant and others were statistically insignificant with negative and positive related in terms of financial performance. Gross profit was only financial performance indicator which was statistically significant.

The study showed that there is a strong positive relationship between cash conversion cycle and financial performance of agriculture cooperative. Cash conversion cycle when are improved, the financial performance of the agriculture cooperatives also improves. The null hypothesis was rejected and accepted at the same time because some variables were statistically significant and others were insignificant. Another null hypothesis was rejected which stated that there is no significant relationship between cash conversion cycle and financial performance of agriculture cooperatives and accepted the alternative hypothesis which said there is a significant relationship between cash conversion cycle and financial performance of agriculture cooperatives.

Recommendations

1. Based on the findings, recommendations were made as follows.
2. The study recommended that cooperatives should continue to maintain their inventory management levels, collection policies and pay its creditors on time.
3. To increase financial performance of the cooperatives, cooperatives are responsible to practice, explain and understand the role of cash conversion cycle.
4. All factors of cash conversion cycle like inventory, payables and receivable should be taken into account order to have desired financial performance.
5. The cooperatives are imperatively recommended to get cash before and pay creditors after receiving cash.
6. Customers' advances are encouraged in the cooperatives and they should be taken care of in order to keep liquidity in the cooperatives.
7. The shorter, the cash conversion cycle the better, shorter inventory periods will allow the cooperatives to achieve financial performance. The shorter the average collection period, the company achieve financial performance.
8. It's recommended that inventory should take the minimum time period to sell off, and payables should be cleared as soon as possible and receivables should be collected in short time as possible to cover operating expenses.
9. Cooperatives should maintain high level of financial performance by revising and using financial performance tools to check if the cooperatives are profitable.
10. Cooperatives should not rely always on the debts even if it happens, they should be as little as possible.
11. Assets are the main source of revenues in the cooperatives, before realizing profits depreciations should be deduct and assets valuation should be done every year.
12. Net profit to be achieved, there must be cash effective cash management
13. Dividends are recommended to be paid after a significant income realize by the cooperatives.

Recommendation for further studies

1. Another study should be carried on the effect climate change on the financial performance in rice cooperatives in Rwanda
2. The same study should be done on the same study using different case studies

Acknowledgements

Our gratitude goes directly to the Ministry of Agriculture, Coproriz-Ntende and Corimak for their high cooperation in this research work. Dr. Butera Edison & Ms. Uwimana Jeannine

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