


**LIQUIDITY RISK MANAGEMENT OF AGRICULTURAL COOPERATIVES IN ISABELA, PHILIPPINES**

Fler L. Madayag<sup>A</sup>



ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 10 July 2023</p> <p><b>Accepted</b> 11 October 2023</p>	<p><b>Purpose:</b> The aim of this study is to examine the liquidity risks the cooperative is exposed to, the effectiveness of liquidity risk management activities and the challenges faced by these selected agricultural cooperatives in Isabela in managing its liquidity risks.</p>
<p><b>Keywords:</b></p> <p>Agricultural Cooperatives; Liquidity Risk; Liquidity Risk Identification; Liquidity Risk Evaluation; Liquidity Risk Itigation.</p>	<p><b>Theoretical framework:</b> Cooperative development encompasses a wide range of individual and economic development issues. It is challenging for cooperatives of all sizes to control liquidity risk and assess the degree of uncertainty in their liquidity position. Since strategies for risk management are costly, cooperatives have had difficulties in reducing these liquidity risks, which might result in an increased rate of insolvency and pose problems for the financial condition of cooperatives.</p>
	<p><b>Design/Methodology/Approach:</b> Data were gathered from 25 agricultural cooperatives located in the province of Isabela, Philippines through a four-point likert scale survey questionnaire, open and close-ended interview questionnaire and information from annual reports and financial statements. Quantitative data were analyzed using descriptive statistics.</p> <p><b>Findings:</b> The results of the study revealed that agricultural cooperatives in Isabela are exposed to liquidity risk at low level. Numerous activities were implemented to minimize liquidity risk through liquidity risk identification, liquidity risk evaluation and liquidity risk mitigation. Moreover, cooperatives face various challenges in the implementation of risk management activities even though most of the cooperatives practice an effective liquidity risk management.</p> <p><b>Research, Practical &amp; Social implications:</b> The study will benefit the stakeholders of agricultural cooperatives in Isabela since cooperative operations are always evolving and liquidity risks are inherent in every organization.</p> <p><b>Originality/Value:</b> The research examines agricultural cooperatives which is one of the organizations that provide assistance to the community. By producing liquidity risk management assessment, cooperatives will improve its operations and provide more support to its members.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i10.3538">https://doi.org/10.26668/businessreview/2023.v8i10.3538</a></p>

**GESTÃO DE RISCO DE LIQUIDEZ DE COOPERATIVAS AGRÍCOLAS EM ISABELA, FILIPINAS**

**RESUMO**

**Objectivo:** O objectivo deste estudo é examinar os riscos de liquidez a que a cooperativa está exposta, a eficácia das actividades de gestão de risco de liquidez e os desafios enfrentados por estas cooperativas agrícolas seleccionadas em Isabela na gestão dos seus riscos de liquidez.

**Enquadramento teórico:** O desenvolvimento cooperativo abrange uma vasta gama de questões de desenvolvimento individual e económico. É um desafio para as cooperativas de todas as dimensões controlar o risco de liquidez e avaliar o grau de incerteza na sua posição de liquidez. Dado que as estratégias de gestão de

<sup>A</sup> Master of Science in Accountancy. Isabela State University. Philippines. E-mail: [fler.l.madayag@isu.edu.ph](mailto:fler.l.madayag@isu.edu.ph)  
Orcid: <https://orcid.org/0009-0005-0675-5185>

riscos são dispendiosas, as cooperativas têm tido dificuldades em reduzir estes riscos de liquidez, o que pode resultar num aumento da taxa de insolvência e colocar problemas para a situação financeira das cooperativas.

**Desenho/Methodologia/Abordagem:** Os dados foram recolhidos de 25 cooperativas agrícolas localizadas na província de Isabela, Filipinas, através de um questionário de pesquisa em escala likert de quatro pontos, questionário de entrevista aberta e fechada e informações de relatórios anuais e demonstrações financeiras. Os dados quantitativos foram analisados por meio de estatística descritiva.

**Constatações:** Os resultados do estudo revelaram que as cooperativas agrícolas em Isabela estão expostas ao risco de liquidez a um nível baixo. Foram implementadas inúmeras atividades para minimizar o risco de liquidez através da identificação do risco de liquidez, avaliação do risco de liquidez e mitigação do risco de liquidez. Além disso, as cooperativas enfrentam vários desafios na implementação de atividades de gestão de risco, embora a maioria das cooperativas pratique uma gestão eficaz do risco de liquidez.

**Implicações de pesquisa, Práticas e Sociais:** O estudo beneficiará as partes interessadas das cooperativas agrícolas em Isabela, uma vez que as operações cooperativas estão sempre evoluindo e os riscos de liquidez são inerentes a todas as organizações.

**Originalidade/Valor:** A pesquisa examina as cooperativas agropecuárias que são uma das organizações que prestam assistência à comunidade. Ao produzir avaliações de gestão de risco de liquidez, as cooperativas melhorarão suas operações e darão mais apoio aos seus associados.

**Palavras-chave:** Cooperativas Agrícolas, Risco de liquidez, Identificação do Risco de Liquidez, Avaliação de Risco de Liquidez, Itigação de Risco de Liquidez.

## GESTIÓN DEL RIESGO DE LIQUIDEZ DE COOPERATIVAS AGRÍCOLAS EN ISABELA, FILIPINAS

### RESUMEN

**Propósito:** El objetivo de este estudio es examinar los riesgos de liquidez a los que está expuesta la cooperativa, la efectividad de las actividades de gestión del riesgo de liquidez y los desafíos que enfrentan estas cooperativas agrícolas seleccionadas en Isabela en la gestión de sus riesgos de liquidez.

**Marco teórico:** El desarrollo cooperativo abarca una amplia gama de cuestiones de desarrollo individual y económico. Es un desafío para las cooperativas de todos los tamaños controlar el riesgo de liquidez y evaluar el grado de incertidumbre en su posición de liquidez. Dado que las estrategias para la gestión de riesgos son costosas, las cooperativas han tenido dificultades para reducir estos riesgos de liquidez, lo que podría resultar en una mayor tasa de insolvencia y plantear problemas para la situación financiera de las cooperativas.

**Diseño/Methodología/Enfoque:** Se recopilieron datos de 25 cooperativas agrícolas ubicadas en la provincia de Isabela, Filipinas, mediante un cuestionario de encuesta en escala Likert de cuatro puntos, un cuestionario de entrevista abierta y cerrada e información de informes anuales y estados financieros. Los datos cuantitativos se analizaron mediante estadística descriptiva.

**Hallazgos:** Los resultados del estudio revelaron que las cooperativas agrícolas en Isabela están expuestas a un riesgo de liquidez de bajo nivel. Se implementaron numerosas actividades para minimizar el riesgo de liquidez mediante la identificación del riesgo de liquidez, la evaluación del riesgo de liquidez y la mitigación del riesgo de liquidez. Además, las cooperativas enfrentan varios desafíos en la implementación de actividades de gestión de riesgos, aunque la mayoría de las cooperativas practican una gestión eficaz del riesgo de liquidez.

**Implicaciones de investigación, Prácticas y Sociales:** El estudio beneficiará a las partes interesadas de las cooperativas agrícolas en Isabela, ya que las operaciones cooperativas siempre están evolucionando y los riesgos de liquidez son inherentes a cada organización.

**Originalidad/Valor:** La investigación examina las cooperativas agrícolas que es una de las organizaciones que brinda asistencia a la comunidad. Al producir una evaluación de la gestión del riesgo de liquidez, las cooperativas mejorarán sus operaciones y brindarán más apoyo a sus miembros.

**Palabras clave:** Cooperativas Agrícolas, Riesgo de Liquidez, Identificación del Riesgo de Liquidez, Evaluación del Riesgo de Liquidez, Litigación del Riesgo de Liquidez.

## INTRODUCTION

It is challenging for cooperatives of all sizes to reduce financial risk, to manage this risk, to assess the uncertainty of liquidity position, and to evaluate the effect on the organization's financial stability. This might be as a result of the client's unpredictable behavior, their ignorance of the entity's transaction procedure and their reliance on rumors, as well as a lack of risk management strategies used by the cooperative.

Any cooperative that uses funds in their operations may possibly be unable to recover all those funds used and this exposes the institution to operational risks. As much as possible, all financial institutions should avoid, ignore or eliminate the risk. To be successful, the risk that financial institutions encounter must be managed efficiently and effectively. When funds dry up, a cooperative will not be able to meet its financial goals and social objective of providing services to members needing money. Worse, the cooperative's operation will discontinue (Yegon, Sang & Cheruiyot, 2014).

Financial organizations, like cooperatives, are now required to execute effective and coordinated financial risk management due to the introduction of new financial services, expansion, and increased competition (Saunders & Cornett, 2018). Liquidity risk is one of the risks that a cooperative face, and it develops when cooperatives fail to make payments for commitments. A strategy should be made for it to be minimized and handled even if it is challenging to avoid.

Liquidity risk is closely linked to financial intermediation, maturity transition, and the conversion of capital from creditors to debtors. Liquidity risk refers to the vulnerability of an entity's financial conditions to a sudden demand for cash triggered by an irregular or unpredictable influx of financial capital into the financial institution (Scannella, 2016). Moreover, liquidity risk exists in two ways in financial institutions: funding and asset liquidity risk.

A very good example of risk management utilized by an organization is liquidity risk management. It is defined as the process of identifying, evaluating and mitigating financial institutions' inability to meet its future obligations. Effective liquidity risk control ensures that an organization can satisfy its liabilities, which are inherently unpredictable due to external developments and other agents' actions (Basel Committee on Banking Supervision, 2019).

Furthermore, liquidity risk management is a method with a three-step procedure (Purdy, 2010). The first step is to determine the cause of the risk, which includes determining the leading variables that contribute to the risk. If a risk is not identified well, the subsequent phase

in the risk management process will not be executed for that risk (Dinu, 2012). Furthermore, formulas and templates are used in risk management to identify risk.

Cooperatives have faced different types of liquidity risks that must be properly managed in order for them to achieve their objectives. Cooperatives are commonly acknowledged as having a significant role to play in the development of economically deprived areas. Cooperatives are recognized by Philippine government as one of the institutions that play an important role in the country's economic and social growth (Jimenez, 2015). It's also worth mentioning that, now that most cooperatives have opened up mutual bonds, members are free to enter those that they believe will provide them with more affordable and better goods, as well as a competitive return on their contributions (Mutua, 2016).

As such, the significant contribution of the cooperative sector cannot be ignored. However, cooperative development encompasses a wide range of individual and economic development issues. Not only does the sector led to thriving trade in local communities, but it also provides employment opportunities for marginalized residents through loan programs, training, and a variety of other services. The CDA keeps track of how many direct jobs the cooperatives provide.

In the province of Isabela, agricultural cooperatives contribute to the economic development of the province. An agricultural cooperative is one in which farmer combine their resources together to improve their earnings, decrease expenses and share risks among them. In 2019, it is estimated that there were 225 compliant and active cooperatives in Isabela, 35 of which were agricultural cooperatives. According to the Cooperative Development Authority – Region 2, this area has total assets of PhP27.02 billion and total liabilities of PhP17.31 billion which may be expose to liquidity risk.

These facts led the researcher to further investigate the effectiveness of the agricultural cooperatives in Isabela in managing liquidity risks. This current study aimed to find evidence of effectiveness of the activities such as liquidity risk identification, evaluation and mitigation activities utilized by cooperatives provided by literature and previous studies. Unlike previous studies regarding this topic, this research investigated the liquidity risk management of cooperatives in Isabela not only using survey technique, but also utilizing documents such as financial statements and annual reports. Under this premise, the researcher determined that it was necessary to investigate the liquidity risk management of agricultural cooperatives in Isabela in order to provide recommendations and to ascertain the various liquidity risk

management practices that could be implemented to help those charged with governance in improving the cooperative's value.

Specifically, this study assessed the data from liquidity risk management to determine their effectiveness in the context of the cooperative industry in Isabela. This risk management is connected with other risk management since management of liquidity risks will affect the management of the other risk. Thus, any result from liquidity risk management would impact the operations of the cooperative industry.

This research was conceptualized on the basis that cooperatives are naturally exposed to a variety of liquidity risks (funding and asset liquidity risk) due to the nature of their business operations and transaction volume. As a result, the organizations have implemented liquidity risk management measures. Liquidity risk management activities include risks identification, risks evaluation and risks mitigation. Though cooperatives' liquidity risk management systems are present, challenges are still encountered because they are inherent to the organizations' operations. The lack of implementation of liquidity risk management activities and the presence of challenges will increase the risk exposure of the cooperatives.

In light with the above discussion, this study, in general, is conducted to find evidences on the liquidity risk management of agricultural cooperatives in Isabela. Furthermore, the study would like to find the answers to the following objectives:

1. To assess if the cooperatives are exposed to the following liquidity risk:
  - a. Funding liquidity risk
  - b. Asset liquidity risk
2. To determine liquidity risk management activities implemented along the following areas:
  - a. Risk identification
  - b. Risk evaluation
  - c. Risk mitigation
3. To identify challenges of effective liquidity risk management experienced by agricultural cooperatives.

## LITERATURE REVIEW

Republic Act No. 9520, an act amending the cooperative code of the Philippines otherwise known as the "Philippine Cooperative Code of 2008". The act cited the declaration of policy that the State foster the creation and growth of cooperatives as a practical vehicle for

promoting self-reliance and harnessing people power towards the attainment of economic development and social justice. The State shall encourage the private sector to undertake the actual formation and organization of cooperatives and shall create an atmosphere that is conducive to the growth and development of these cooperatives. Toward this end, the Government and all its branches, subdivisions, instrumentalities and agencies shall ensure the provision of technical guidance, financial assistance and other services to enable said cooperatives to develop into viable and responsive economic enterprises and thereby bring about a strong cooperative movement that is free from any conditions that might infringe upon the autonomy or organizational integrity of cooperatives.

Sarsale, M. et al.(2020) studied the Management Practices of Cooperatives Operating in a Philippine Province where he stated that cooperatives have generated commercial operations that aided rural communities' economic well-being, but only a few are still operational, while several cooperatives have closed or dissolved.

Furthermore, Aradanas, K. et al (2018) evaluated the Effectiveness of the Credit and Collection Policies and Practices of Selected Cooperatives using evaluation tools. The study's findings show that all cooperatives have particular credit procedures in place for credit analysis, credit information, and credit review.

In order to maintain the liquidity and value of financial assets and activities in the chosen marketplace, a business sector's enterprise risk management is a priority (Kulinich, et.al., 2020). According to Cendrowski & Mair (2009:4), there are three steps in the risk management process, namely; risk identification, risk evaluation and risk mitigation. Risk identification is the process of gathering information in order to identify possible risks. In Risk evaluation phase, the consequences of each risk on the list should be determined especially for the different stakeholders. Once this has been done, the current control measures in place to mitigate these risks should be evaluated. After risks with their consequences have been identified and controls have been evaluated, a Risk mitigation strategy should be implemented.

In their study, Kimemia, Namusonge & Sakwa (2018) concluded that Savings and Credit Cooperatives' financial performance is significantly affected by liquidity management. This is reflective to the fact that managing liquidity puts a control on the current assets that are held at any period as current assets are items that do not generate income. Therefore, financial performance improves when they are transferred to income generating items.

In addition, Muheebwa (2018) finished a research regarding the influence of liquidity on financial performance of Savings and Credit Cooperatives. Liquidity not only helps the

Savings and Credit Cooperatives to ensure that the business always has a reliable supply of cash close at hand, but it is a powerful tool when it comes to determining the financial health of future investments as well.

Lastly, the study of Githaka, et.al., (2017) concluded that Savings and Credit Cooperatives in Kirinyaga County mostly capitalized on liquidity management and as such it affected the Savings and Credit Cooperatives' liquidity. Liquidity ratios are various balance sheet ratios which should identify main liquidity trends. These ratios reflect the fact that firm should be sure that appropriate, low cost funding is available in a short time.

## **DATA AND METHODOLOGY**

To find the answers to the problems of this study, the researcher used descriptive-quantitative research design with a survey technique. This is commonly used to explore the opinions of respondents who represent a certain population. Survey research design is suitable to this research undertaking because it adequately addresses the major objectives and research questions proposed in this study. Furthermore, interview with some cooperative managers as well as document scanning were also used to substantiate the results of the survey. Document scanning included information and review from facts gathered through annual reports, financial statements and policies of the agricultural cooperatives.

This study was conducted to assess the liquidity risk management used by agricultural cooperatives in Isabela, the province in region two with most number of cooperatives. Isabela province includes six legislative districts where there are a lot of agricultural cooperatives, some of which were recipients of best performing cooperatives recognized by the Isabela Province's Cooperative Council in 2019. This province has 225 cooperatives were identified as compliant and active. Thirty-five (35) of these are agricultural cooperatives. In fact, numerous cooperatives such as consumer cooperatives, credit cooperatives, agricultural cooperatives, agricultural cooperatives and many other financial institutions located in this area.

All cooperatives under research are primary cooperatives in which members are natural persons. The numbers of agricultural cooperatives per district where the cooperatives are strategically located include five agricultural cooperatives in district 1, one in district 2, three cooperatives in district 3, five cooperatives in district 4, five and six cooperatives in districts 5 and 6, respectively. These cooperatives provided documents including three-year (2017 – 2019) financial statements. The final sample comprised 25 participants corresponding to 83% of the 30 target respondents. The respondents of the study were the employees of the cooperatives

specifically the heads or managers involved in the identification, evaluation and mitigation of liquidity risk. Because most of the data needed were financial in nature, the respondents were selected based on the completeness of the documents provided. There were twenty-five (25) agricultural cooperatives that provided documents (financial statements and annual reports). Moreover, 25 cooperative managers answered the survey and responded the interview. Additionally, a communication from the researcher was included as a covering letter, outlining the research aim and objectives, explanations for participation, assurances of anonymity and privacy use of the study's findings and the scanned documents (annual reports and financial statements, and the respondent's personal details.

A survey and interview questionnaire were utilized as data collection instruments for this study. The survey questionnaire was used to gather the profile of the respondents and the cooperatives. The responses were analyzed through frequency count and percentages. The results were analyzed through descriptive statistics using mean and standard deviation to augment the research objectives of the study. The instrument was modified to meet the needed specifications in line with the objectives and to ensure the validity and reliability of the questionnaire, Cronbach's alpha was used to measure the internal consistency which resulted in 0.928. Using the results from the multi-purpose cooperatives in the same area, the reliability of the questionnaire was verified. Additionally, the survey results from the employees were supported by document scanning. The annual report, which contains a statement of financial position, statement of operations, statement of cash flows, and statement of changes in equity, was the document that was made available. Lastly, open-ended questions were also employed, allowing respondents to respond any way they pleased to the matters posed.

The quantitative data were analyzed using descriptive statistics. Percentage, mean, and standard deviation were used to determine liquidity risk management activities utilized by the agricultural cooperatives including its challenges. Tables 1-3 show the rating scale used in the study.

Table 1. Rating scale for types of liquidity risks

<b>Scale</b>	<b>Description</b>
1.00 – 1.49	Not a risk
1.50 – 2.49	Low risk
2.50 – 3.49	Moderate risk
3.50 – 4.00	High risk

Source: Prepared by the authors



Table 2. Rating scale for liquidity risk management activities

Scale	Description
1.00 – 1.49	Not practiced
1.50 – 2.49	Slightly practiced
2.50 – 3.49	Moderately practiced
3.50 – 4.00	Extremely practiced

Source: Prepared by the authors

Table 3. Rating scale for challenges of effective liquidity risk management

Scale	Description
1.00 – 1.49	Strongly Disagree
1.50 – 2.49	Disagree
2.50 – 3.49	Agree
3.50 – 4.00	Strongly Agree

Source: Prepared by the authors

## RESULTS AND DISCUSSION

The analysis and discussion of the results should characterize the context of the research, either through the description of the environment, conjuncture or economic sector. Present the development of the research. Structuring subsections in the sense of “responding” to the objectives to which the work proposes. It can be structured in subsections in order to respond to the objectives to which the work proposes.

### Liquidity Risk Agricultural Cooperatives are Exposed To

Table 4 shows agricultural cooperatives' exposure to liquidity risks. It can be gleaned from the table that cooperatives are exposed to low level of liquidity risk (over all mean of 2.25 and standard deviation of 0.765). This indicates that the cooperatives have enough cash and non – cash assets available to pay their obligations on time.

Table 4. The liquidity risks the agricultural cooperatives are exposed to.

Types of liquidity risk	N	Mean	Standard Deviation	Description
<b>Asset liquidity risk.</b> Cooperative's risk arising from an inability to sell or pledge assets at, or near, their carrying value when needed.	25	2.38	0.718	Low risk
<b>Funding liquidity risk.</b> Cooperative's inability to settle its maturing obligations (deposits, debts, etc.) with immediacy.	25	2.12	0.812	Low risk
<b>Overall Mean</b>	<b>25</b>	<b>2.25</b>	<b>0.765</b>	<b>Low risk</b>

Legend: 3.50 – 4.00 = high risk; 2.50 – 3.49 = moderate risk; 1.50 – 2.49 = low risk; 1.00 – 1.49 = not a risk

Source: Prepared by the authors

It can be gleaned from table that agricultural cooperatives in Isabela are exposed to asset liquidity risk at low level (mean of 2.38). Most of the respondents reacted that they are exposed to low level of this risk. One factor that determines an organization's risk is liquidity (Agha,

Oluyombo & Aworinde, 2023). The uncertainty of asset returns and the uncertainty of liquidity are the two primary sources of asset liquidity risk and may be strongly correlated at any time (Scannella, 2016).

With a mean of 2.12 cooperatives were not threatened by funding liquidity risk since they had enough resources to pay the maturing obligations including the deposits of the members or depositors on time. According to Burton et.al., (2010), funding liquidity risk occurred when the depositors withdraw their funds unexpectedly and when raising large amount of deposits becomes impossible to do.

Table 5. Cooperatives' Acid – test ratio

<b>Cooperatives' Acid – test ratio</b>				
<b>District</b>	<i>Year</i>			<i>Average</i>
	2017	2018	2019	
<b>1</b>	1.34	1.39	1.32	1.35
<b>2</b>	1.16	1.13	1.16	1.15
<b>3</b>	1.64	1.7	1.69	1.68
<b>4</b>	1.23	1.12	1.08	1.14
<b>5</b>	2.22	1.71	1.91	1.94
<b>6</b>	0.85	0.88	0.9	0.88

Source: statement of financial position and annual report of agricultural cooperatives in Isabela.

To verify the responses of the employees, acid – test ratio was presented in table 5 which indicated that most cooperatives (per district) is completely prepared with enough assets to cover those existing short – term obligations. The acid – test ratio (quick assets/ current liabilities) measures a cooperative's ability to cover short - term obligations using quick assets (Agamata, F., 2019). Since most of the cooperatives exceeded 1:1 ratio, it indicates that cooperatives are liquid and are not threaten by liquidity risk.

Table 6. Cooperatives' Liquidity Ratio

<b>Cooperatives' Liquidity ratio</b>					
<b>District</b>	<i>Year</i>			<i>Average</i>	<i>Points Earned</i>
	2017	2018	2019		
<b>1</b>	35%	37%	45%	39%	10
<b>2</b>	28%	32%	31%	30%	10
<b>3</b>	43%	50%	62%	52%	10
<b>4</b>	27%	30%	28%	28%	10
<b>5</b>	32%	31%	32%	32%	10
<b>6</b>	36%	34%	34%	35%	10

Source: statement of financial position and annual report of agricultural cooperatives in Isabela.

To validate the result of the survey, liquidity ratio was also used. Liquidity ratio [(liquid assets – short term payables)/ Members' deposit] measures the cooperative's ability to service withdrawal of members' deposit on time. The Cooperative Development Authority (CDA)

rated the liquidity ratio: 2 points (1% - 5%); 4 points (6% - 8%); 6 points (9% - 11%); 8 points (12% - 14%); 10 points (15% and above). Based on table 6, most of the cooperative were able to maximize their points for liquidity ratio and can able to satisfy members' deposit if they wish to withdraw it from the cooperative.

### Liquidity Risk Management Activities

The second objective of this study was to determine the liquidity risk management activities that were implemented along the areas of liquidity risk identification, evaluation and mitigation. The result was presented in tables 7, 8 and 9.

Table 7 shows the responses of cooperative managers to the activities used by cooperatives to identify liquidity risks. The identified activities are moderately practiced by agricultural cooperatives as presented in the table (overall mean of 3.33 and standard deviation of 0.591). Furthermore, cooperative managers were interviewed regarding the activities implemented by cooperatives to identify liquidity risks.

Table 7. Liquidity risk identification activities

Liquidity risk identification activities	N	Mean	Standard Deviation	Description
Financial Ratio Analysis	25	3.40	0.566	Moderately practiced
Assessment of funding facilities	25	3.32	0.676	Moderately practiced
Cash Flow Forecasting (Budgeted Cash Flows)	25	3.28	0.531	Moderately practiced
<b>Overall Mean</b>	<b>25</b>	<b>3.33</b>	<b>0.591</b>	<b>Moderately practiced</b>

Legend: 3.50 – 4.00 = extremely practiced; 2.50 – 3.49 = moderately practiced; 1.50 – 2.49 = slightly practiced; 1.00 – 1.49 = not practiced

Source: Prepared by the authors

As shown in Table 7, cooperatives identify key areas of liquidity risk through financial ratio analysis (mean was 3.40). Identifying emerging problems and initiating timely corrective action, as well as identifying potential opportunities for increased profit, are some of the obvious benefits of financial analysis. Most of the respondents interviewed stated that through the preparation of financial ratios, the cooperative will have a clue to its wealth and could determine their liquidity position. With a mean of 3.32, assessment of funding facilities is moderately practiced by the cooperatives. It was specified by the managers interviewed that a thorough assessment of available funding may identify risks to the cash position of the entity. This indicates that most of them moderately assess their funding facilities including credit delivery and collection control. Lastly, cooperatives prepare cash flow forecast (mean of 3.28) as indicated in their statement of cash flow budget. According to the managers asked, they

prepare an operational budget annually which is tied up to the cooperatives' cash flows. This implies that in practicing this activity moderately, it ensures that the cooperatives identify the profitable and unprofitable activities or services by comparing which services make the most income which can be converted easily to cash. According to Basel Committee on banking supervision (2019), an institution should make a realistic assumption about its future liquidity needs and it should have a dynamic cash flow forecasts that include assumptions on the likely behavioral responses of key counterparties to changes in conditions.

### Liquidity Risk Evaluation Activities

The cooperative managers' responses to liquidity risk evaluation activities were presented in Table 8. According to the table, agricultural cooperatives moderately practiced the identified activities (overall mean of 3.31 and standard deviation of 0.677).

Table 8. Liquidity risk evaluation activities

Liquidity risk evaluation activities	N	Mean	Standard Deviation	Description
Contingency fund to cover withdrawals during financial stress is available	25	3.36	0.625	Moderately practiced
Cash Flow forecasting is regularly prepared by the cooperative	25	3.40	0.632	Moderately practiced
Sources of emergency funds to cover liquidity problems are present	25	3.12	0.765	Moderately practiced
Preparation of Financial ratios (liquidity ratios, leverage, etc.)	25	3.36	0.686	Moderately practiced
<b>Overall Mean</b>	<b>25</b>	<b>3.31</b>	<b>0.677</b>	<b>Moderately practiced</b>

Legend: 3.50 – 4.00 = extremely practiced; 2.50 – 3.49 = moderately practiced; 1.50 – 2.49 = slightly practiced; 1.00 – 1.49 = not practiced

Source: Prepared by the authors

It is notable in Table 8 that contingency fund to cover withdrawals during financial stress is available (mean of 3.36). Cooperative managers confirmed that they moderately maintain a contingency fund in case they need cash. This implies that through the availability of contingency fund, the cooperative can evaluate its liquidity position. This was in agreement with the manual of Basel committee on banking supervision (2019) which stated that an entity should have a formal contingency funding plan that clearly sets out the strategies for addressing liquidity shortfalls in emergency situations. Furthermore, cooperative employee moderately practiced preparation of cash flow (mean was 3.40). All managers responded that the cashier prepares cash collection summary that will be used for future disbursements. This implies that in cooperative entity, cash flow forecasting is very important and practiced as a technique to

evaluate liquidity risk through complete figure of inflows and outflows of cash. The advantage of this activity is to know when the expenses must be paid and there is no need for unanticipated borrowing to cover the cash requirements (Pitkanen, 2016). Sources of emergency funds to cover liquidity problems are present (mean of 3.12). According to managers interviewed, they evaluate the sources of their funds which come from members' deposits, contributions and share capital, cooperative union/ federation and other private financial institutions. This activity is moderately practiced and implies that through this activity, they can determine where to obtain funds if liquidity problems arise. Debts and diversified funding sources usually indicate that a financial institution has a well-developed liquidity management (Trenca, & Paun, 2014). Employees further indicated that they prepare financial ratios (mean was 3.36). According to the managers interviewed, current ratio, which is prepared annually, is one of the ratios that is moderately practiced to evaluate liquidity. Through this financial ratio, liquidity risk is evaluated and its impact to the cooperative as a whole is measured. According to Drake & Fabozzi, (2018) financial ratios may be used externally to gauge prospective investments and soundness of debtors and can also be used internally to evaluate issues including the performance of employees, the efficiency of operations and credit policies.

### Liquidity Risk Mitigation Activities

Table 9 presents cooperative managers' response to liquidity risk mitigation activities practiced by cooperatives. The following activities were moderately practiced by agricultural cooperatives, according to the table (overall mean of 3.23 and standard deviation of 0.740).

Table 9. Liquidity risk mitigation activities

Liquidity risk mitigation activities	N	Mean	Standard Deviation	Description
Optimization of working capital	25	3.28	0.601	Moderately practiced
Provisions for reserves are observed and implemented	25	3.40	0.693	Moderately practiced
Past due accounts are controlled	25	3.16	0.833	Moderately practiced
Contingency fund to cover withdrawals during financial stress is available or liquidity buffer	25	3.16	0.880	Moderately practiced
Cash Flows (Actual and Forecast) are Strictly monitored	25	3.28	0.722	Moderately practiced
Sources of emergency funds to cover liquidity problems are present	25	3.12	0.711	Moderately practiced
<b>Overall Mean</b>	<b>25</b>	<b>3.23</b>	<b>0.740</b>	<b>Moderately practiced</b>

Legend: 3.50 – 4.00 = extremely practiced; 2.50 – 3.49 = moderately practiced; 1.50 – 2.49 = slightly practiced; 1.00 – 1.49 = not practiced

Source: Prepared by the authors

It is shown in Table 9 that cooperatives optimized their working capital (mean of 3.28). One way to test the effectiveness of liquidity risk management is to identify the optimization of working capital. These results complement the study of Nobanee & Haijar (2014) that more accurate measures of the efficacy of working capital management where optimal levels of inventory, receivables, and payables are identified, and total holding and opportunity costs are minimized. Furthermore, provision for reserves is extremely observed and implemented (mean of 3.40). As presented in their financial statements, all cooperatives allot statutory funds to cover the unexpected cash outflows and this fund includes general reserve fund, cooperative education and training fund, due to union/ federation, community development fund and optional fund. This is related to study of Casu, et.al. (2013) which they believed that it was possible to eliminate the risk through adding reserve and capital or by means of asset securitization when financial institutions were in the face of a liquidity problem. Moreover, it can be gleaned from table 9 that past due accounts are controlled (mean of 3.16). All of the managers noted that they have a collection process on past due accounts and this is incorporated in their collection policy. One of the policies moderately practiced includes a provision that a delinquent borrower who has settled his/her past due loan can avail of a new loan provided that the maximum loan he/she can avail is equal or lower than his/her share capital or subject to the discretion of manager. The collection policy can be expensive in terms of both out of pocket expenditures and lost goodwill-customers dislike being turned over to a collection agency (Hasan & Saha, 2016).

The cooperatives maintain liquidity buffer (mean was 3.16). This means that most of the cooperatives have available funds in case of financial crisis. In addition to risk mitigation, the objective of the liquidity buffer is to generate stable earnings for the institution. In addition, cooperatives strictly monitor cash flows (actual and forecast) (mean of 3.28). Most of the managers agreed that cash flow monitoring is moderately practiced by the cooperatives (monthly, quarterly, etc.) and it denotes that through monitoring, this will highlight the variances of actual cash usage from what is being budgeted and corrective actions will be planned and implemented to minimize or eliminate the unfavorable trends in the availability of cash. This monitoring attempts to analyze the present practices related to loan appraisal and addresses how to make the best use of analysis of cash flow statement in appraising and monitoring the loans & advances (Kulkarni, et.al., 2016). Lastly, sources of emergency funds to cover liquidity problems are present (mean was 3.12). According to the managers interviewed, sources of their funds come from members' deposits, contributions and share

capital, cooperative union/ federation and other private financial institutions. This suggests that this activity is moderately practiced, and that liquidity problem can be solved through internal and external sources. Trenca & Paun, (2014) stated that another key ingredient of the liquidity is the ability to attract other funds-debt (also known as potential liquidity).

### Challenges of Effective Liquidity Risk Management

The third and final objective of this study is to determine the challenges of effective liquidity risk management and what recommendations can be proposed to address the problems on liquidity faced by the cooperative industry.

Table 10 shows cooperative managers' response to the challenges of effective liquidity risk management. Since most of the agricultural cooperatives had an effective liquidity risk management, heads of agricultural cooperatives in Isabela disagreed to most of the challenges to effective liquidity risk management (overall mean of 2.47 and standard deviation of 0.875).

Table 10. Challenges of Effective Liquidity Risk Management

Challenges of Effective Liquidity Risk Management	N	Mean	Standard Deviation	Description
Poor internal control	25	2.48	0.952	Disagree
Mismanagement of working capital	25	2.35	0.926	Disagree
Increase in operating costs	25	2.26	0.776	Disagree
Unplanned Capital Expenditure	25	2.38	0.854	Disagree
Unanticipated decrease in revenue and profitability	25	2.82	0.776	Agree
Absence and inadequate financial facilities	25	1.72	0.873	Disagree
Mismatching of the maturity profile of debts to the assets which they are funding	25	2.56	0.852	Agree
Inadequate cash flow management system	25	3.24	0.924	Agree
Future debt repayments	25	2.40	0.938	Disagree
<b>Overall Mean</b>	<b>25</b>	<b>2.47</b>	<b>0.875</b>	<b>Disagree</b>

Legend: 3.50 – 4.00 = Strongly agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly disagree

Source: Response of employees from the 25 agricultural cooperatives.

With a mean of 2.48, cooperatives disagreed that liquidity risks arise from poor internal control as indicated in table 10. This implies that cooperatives developed and practiced internal control to safeguard cooperative's resources and produce accurate, reliable financial statements. This was confirmed by most of the managers interviewed that they maintain a system of accounting and reporting which provides and monitor its internal control system often and adjusting it to be most effective to protect the institution from possible threats. Ahmad (2019), found that internal control weaknesses can be a major contributing factor for risks and fraud to be committed. Moreover, cooperatives' managers disagreed that mismanagement of working capital is a challenge of an effective liquidity risk management

(mean of 2.35). Most of the managers interviewed stated that they manage their working capital well since it is important to the success of cooperative financial stability and profitability. A business may live and survive without turning a profit, but it cannot do so without adequate working capital. Mismanagement of capital can lead to a company's bankruptcy (Boopathi & Leeson, 2016). Furthermore, cooperatives' employees disagreed that increase in operating costs will result to liquidity problem (mean of 2.26). Since all of the cooperatives prepare operational budget annually, they can monitor their operating costs. This was confirmed by the managers that cooperatives always track their operating costs as much as possible to lessen the outflow of cash and liquidity risk will be minimized. In fact, the Articles of Cooperation By-Laws expressly provided that at least 10% of the cooperatives net surplus at the end of the fiscal year must be set aside to ensure the cooperative's stability and to absorb any losses incurred in its business operations.

With a mean of 2.38, the cooperatives' employees disagreed that unplanned capital expenditure is a challenge to the cooperatives. This was confirmed by the managers since all of the cooperatives set aside seven percent at least (7%) of annual net surplus for optional fund purposely for acquisition of land and building. It implies that all cooperatives allot specific fund to support its capital expenditures and unplanned capital expenditure is not a challenge. Moreover, one of the causes of cash flow problems or liquidity risk is an unanticipated decrease in revenue that leads to a devastating effect on the profitability. For the managers of agricultural cooperatives in Isabela, they see this as a challenge as shown in table 10 (mean of 2.82). This implies that most of the cooperatives were threatened by liquidity risk due to decrease in revenue. Based on the financial statements provided, most cooperatives have an increasing net surplus (loss) in their 2017-2019 statement of profit or loss, however there are some experiencing decrease in net profit. The cooperatives' managers further disagreed that absence and inadequate financial facilities is one of the causes of liquidity problems as revealed in table 30 (mean was 1.83). This means that most of the cooperatives were not hindered since they often assess their financial facilities including members' share capital and deposits, federation of cooperatives and private financial institutions. Major obstacles of access to finance were poor relationship with institutions, not a member of societies and inadequate financial facilities (Kuruppu, 2015).

As presented in table 10, respondents agreed that mismatching of the maturity profile of debts to assets which they are funding is a challenge to an effective liquidity risk management (mean of 2.56). Liquidity Mismatch Index is used to measure the mismatch between the market



liquidity of assets and the funding liquidity of liabilities (Bai, et.al., 2014). In addition, respondents agreed that liquidity position of the cooperatives was hindered by an inadequate cash flow management system (mean of 3.24). This was confirmed by some managers which stated that they don't have good cash flow management because of uncertainty of collection. Cash flow management is extremely important to the survival of a business, particularly small businesses, and poor cash flow management can also lead to business failure (Aren & Sibindi, 2014). Lastly, respondents disagreed that future debt repayments (mean was 2.40) is a problem to an effective liquidity risk management. Since the cooperatives prepare operational budget annually, future debt repayment is incorporated in such budget. In fact, all cooperatives are required by law to allocate 70% of their net surplus intended for the payment of interest on share capital and members' patronage refund. This signifies that future debt repayments are not a hindrance to cooperatives' liquidity position.

## CONCLUSION

The following conclusions were derived based on the findings of the study. First, the study concluded that the agricultural cooperatives in Isabela are exposed to low level of liquidity risk. It is concluded that liquidity risks (funding and asset liquidity) are not a threat to most of the agricultural cooperatives since they have enough current resources to cover their current liabilities. Furthermore, excellent cash flow management and the availability of funding facilities in the event of financial crisis do not increase asset and funding liquidity risk. Agricultural cooperatives practice effective liquidity risk management as these are important in business operations. This includes three phases, namely, risk identification, risk evaluation and risk mitigation. Every phase of liquidity risk management involves numerous activities which are moderately practiced to minimize the existence of liquidity risks. Lastly, the study concludes that most of the cooperatives have an effective liquidity risks management, since they disagreed with most of the challenges as shown in the presentation. However, it is also concluded that some cooperatives identified challenges in managing liquidity risks.

Base on the above conclusions, the following is hereby strongly recommended. Even though the cooperatives have an effective liquidity risk management, they must continue to perform in order to maintain their strong liquidity standing and to manage liquidity risks they encounter. Despite the fact that cooperatives have a strong liquidity risk management system in place, they should not be complacent because cooperative operations are always evolving and liquidity risks are inherent in every organization. Moreover, some cooperatives face

challenges in controlling liquidity risk. It is therefore recommended that they should prepare cash collection and cash disbursement report regularly in order to manage their cash position effectively. In addition, the cooperatives must devise ways to increase revenue and decrease their expenses in order to increase the profit. Lastly, their financial officers must carefully monitor the loan or liability maturity schedules. They must connect expected cash flows with future payment commitments for obligations. In the world of financial organizations like cooperatives, the study of liquidity risk management has become even more significant. Because the scope of this study was limited to Isabela province, it is recommended that future research should consider examining agricultural cooperatives across the region or country. Furthermore, the scope of this research was confined to agricultural cooperatives. It is recommended that future studies should cover different types of cooperatives, such as multi-purpose cooperatives, credit cooperatives, consumer cooperatives, and so on. In addition, future researchers are also encouraged to incorporate various types of risks in their studies, such as credit risks, operational risks, pure risks, speculative risks, and so on.

## REFERENCES

- Agamata F., (2019). Management Advisory Services. A comprehensive guide. 2019 edition. GIC Enterprises & Company Incorporated. <https://www.bitlylinks.com/SIuUBIFkR>
- Agha, E., Oluyombo, O., & Aworinde, O. (2023). Bank Governance, Asset Quality, and Risk. Do Macro-Prudential Policy and Macroeconomic Factors Matter? Evidence from Nigeria's Banking Sector. *International Journal of Professional Business Review*, 8(8), e03054. <https://doi.org/10.26668/businessreview/2023.v8i8.3054>
- Ahmad A. (2019). The Moderating role of Internal Control on the Relationship between Accounting Information System and Detection of Fraud: The Case of the Jordanian Banks. *International Journal of Academic Research in Economics and Management Sciences*. 8. 10.6007/IJAREMS/v8-i1/5548.
- Aradanas, K., Palacio, M. & Suazo, A. (2018). Evaluation on the Effectiveness of the Credit and Collection Policies and Practices of Selected Multi-Purpose Cooperatives in Bohol.
- Aren, A. & Sibindi, A. (2014). Cash Flow Management Practices: An Empirical Study of Small Businesses Operating in the South African Retail Sector. *Risk Governance and Control: Financial Markets and Institutions*. 4. 87-100. 10.22495/rgcv4i2c1art1.
- Bai, J., Krishnamurt A. & Weymuller, C. (2018). Measuring Liquidity Mismatch in the Banking Sector. *Journal of Finance*. 2018;73 (1) :51-93. <https://www.bitlylinks.com/mo6yLyeQk>
- Basel Committee on Banking Supervision (2019). *Principles for sound liquidity risk management and supervision*. <https://www.bitlylinks.com/iZ5xMu1LP>

- Boopathi, C. & Leeson, P. (2016). CONCEPT OF WORKING CAPITAL MANAGEMENT. *International Journal of Commerce, Business and Management*, Vol 5, Pp. 2319–2828. <https://www.bitlylinks.com/VjXBeAy2V>
- Burton, M., Brown, B., & Nesiba, R. F. (2010). An introduction to financial markets and institutions, (2<sup>nd</sup> Edition) Routledge. <https://doi.org/10.4324/9781315706405>
- Casu, B., Clare, A., Sarkisyan, A. & Thomas, S. (2013). Securitization and Bank Performance. *Journal of Money, Credit and Banking*, vol. 45(8), Pp. 1617-1658. <https://doi.org/10.1111/jmcb.12064>
- Cendrowski, H. & Mair, W. (2009). Enterprise Risk Management and COSO: A Guide for Directors, Executives and Practitioners, 2009 ed., John Wiley & Sons, Inc., Pp. 191-311.
- Dinu, A. (2012). The necessity of risk management program in organizations, *Ovidius University Annals, Economic Sciences Series, Ovidius University of Constantza*, 0 (2), 961-963. <https://www.bitlylinks.com/r64nLViud>
- Drake, P. & Fabozzi, F. (2018). Financial Ratio Analysis. <https://doi.org/10.1002/9781118182635.efm0074>
- Githaka, J., Maina, K. & Gachora, S. (2017). EFFECT OF LIQUIDITY MANAGEMENT ON LIQUIDITY OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KIRINYAGA COUNTY, KENYA. *International Academic Journal of Economics and Finance*, Volume 2, Issue 3, pp. 57-73.
- Hasan, S. & Saha, A. (2016). Efficient Receivables Management: A Case Study of Siemens Bangladesh Limited. *Jahangirnagar University Journal of Marketing*. 2. 89-104. <https://www.bitlylinks.com/5pnnPPCAB>
- Jimenez, S. (2015). *The state of Philippine Cooperatives*. Center of Business Research and Development (CBRD) and Management and Organization Department (MOD)'s, De La Salle University. <https://www.bitlylinks.com/ourN-3Ejf>
- Kimemia, L., Namusonge, G. & Sakwa M. (2018). Effects of the Liquidity Management on the Financial Performance of SACCOs. *International Journal of Management and Commerce*, Vol. 5, 899 -911. <https://api.semanticscholar.org/CorpusID:240567811>
- Kulinich, T., Andrushko, R., Prosovykh, O., Sterniyuk, O., & Tymchyna, Y. (2023). Enterprise Risk Management in an Uncertain Environment. *International Journal of Professional Business Review*, 8(4), e01700. <https://doi.org/10.26668/businessreview/2023.v8i4.1700>
- Kulkarni, P., Chirputkar, A. & Kulkarni, U. (2016). Analysis of Cash Flow Statement – Use in Banking Industry for Appraisal of Loans & Advances. *Managing Business in Turbulent Times*, pp. 175-179. <https://ssrn.com/abstract=2844653>
- Kuruppu, G. (2015). Sources of financing & difficulties of raising finance: The case of Sri Lankan Entrepreneurs. *12th International Conference on Business Management (ICBM)*. <https://www.bitlylinks.com/cgdd0BSNT>

- Muheebwa, F., (2018). The Influence of Liquidity on the Financial Performance of SACCOs in Uganda. *Journal of Economics*, vol.3, no.2, Pp 55-70. DOI:10.13140/RG.2.2.11295.46242
- Mutua, R. (2016). *Impact of credit risk management on the financial performance of savings and credit co-operative societies in Kitui County*. Research Project, Southeastern Kenya University, Kitui County, Kenya. <http://repository.seku.ac.ke/bitstream/handle/123456789/1907>
- Nobanee, H. & Haijar, M. (2014). An optimal cash conversion cycle. *International Research Journal of Finance and Economics*, 120, 13-22. <https://www.bitlylinks.com/eJvPSLVYy>
- Pitkanen, A. (2016). Cash Flow Forecasting Proposal for New Long-Term Cash Flow Forecast in the Case Company. <https://urn.fi/URN:NBN:fi:amk-201601291753>
- Purdy, G. (2010). ISO 31000:2009 - Setting a new standard for risk management. *Risk Analysis*, 30, (6), 881– 886. <https://doi.org/10.1111/j.1539-6924.2010.01442.x>
- Sarsale, M. & Kilongkilong, D. (2020). Management Practices of Multipurpose Cooperatives Operating in Philippine Province. *Asia Pacific Journal of Multidisciplinary Research*, Vol. 8, No.1, Pp., 16-26.
- Saunders, A. & Cornett, M. (2018). *Financial institutions management: A risk management approach*, (9<sup>th</sup> edition) McGraw Hill. <https://www.bitlylinks.com/wJa-A61mD>
- Scannella, E. (2016). Theory and regulation of liquidity risk management in banking. *International Journal Risk Assessment and Management*. 19, (1/2), 4-21. DOI:10.1504/IJRAM.2016.074433
- Trenca, I. & Paun, D. (2014). POLICIES OF THE COMMERCIAL BANKS LIQUIDITY MANAGEMENT IN THE CRISIS CONTEXT. *Annals of the University of Oradea: Economic Science, Economic Science*. 3. <https://www.bitlylinks.com/BosnuIKEK>
- Yegon, C., Sang, J. & Cheruiyot, P.K. (2014). Effects of financial risk management on firm's profitability: panel data econometrics of selected micro – financial institutions in Kenya. *Research Journal of Finance & Accounting*, 5(9), 152-159. <https://www.bitlylinks.com/GC7t-tBhS>