

Effect of Debt Financing on Financial Performance of Aquaculture Enterprises in Lake Region Economic Block, Kenya.

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ABSTRACT

Research Aims: This study sought to analyze the effect of debt financing on the financial performance of aquaculture enterprises in the Lake Region Economic Bloc, Kenya. Debt financing has been limited due to financial risk involved in using the traditional methods of financing; this has caused the industry and infrastructure to develop slowly in Kenya.

Design/methodology/approach: The study was based on the cross-sectional research design. Purposive sampling was used to select specific beach management units and county officers. A sample of 248 group members and 10 county officers were selected to participate in the study out of a possible 700 fishermen on the beaches sampled out, making a total sample of 258 respondents. Questionnaires were used to collect primary data. Secondary data was used to collect data on financial performance.

Research Findings: Multiple regression analysis was conducted to evaluate the relationship between debt financing and financial performance. The results revealed that ($r=0.592$, $p< 0.000$). This indicates a moderately positive correlation between these two variables suggesting a moderately strong relationship between debt financing and financial performance. This implied that availability of debt finance enhanced the financial performance of the aquaculture enterprises. The study recommends much innovation in financing options and technologies to sustainably meet further increases in demand

Theoretical Contribution/Originality: The study was based on debt signal theory. The study used both primary and secondary data and triangulation of the results was done to reach its conclusion on the effect of debt financing on financial performance of the aquaculture enterprises.

Keywords: Aquaculture, Debt, Capital, financial performance.

INTRODUCTION

In Africa, the commercialization of small-scale aquaculture has been hampered by various factors, such as poor availability of capital, poor infrastructure, limited government support and socioeconomic circumstances. Productivity in African aquaculture in general has failed to grow at the same pace as in Asia, and is falling behind demand as human populations increase (Farhadian & Farhadian, 2010). Recently there has been an increase in the rapid commercialization of aquaculture. Improvements in husbandry skills, feed and production technologies have allowed for higher levels of production. This has been particularly the case in Asia, where there is growing awareness of the downstream value chain and the opportunities it presents.

Financing aquaculture infrastructure projects is important for growth of an economy. Financing of aquaculture infrastructure provides a conducive atmosphere for growth and expansion of businesses as a result of improved

efficiency and reduced risk due to improved transport and communication network (Mitra, Khan, & Nielsen, 2019). Finance refers to providing funds for a business, the management and investment of funds (Gbandi & Amissah, 2014). Investments in production facilities such as; ponds, cages and infrastructure input supplies e.g. hatcheries and post-harvest facilities may be necessary to improve farm performance and add value to products and the small holder business. Such improvements will often require access to loans with longer payback periods (Hall, 2011).

Debt financing is associated with the trade-off between costs and gains. It's the most common form of availing capital to the SMEs today. Focus has been put on SMES and very few studies have done on financing aquaculture enterprises. This study therefore intends to bridge the gap of how to create financing solutions for aquaculture enterprises in Kenya today. There is an overall debt level beyond which the costs are higher than the benefits related to tax-sheltering. To reach a satisfactory debt level it is critical for any business, since there is need to achieve profitability and firm value, as well as increase an organization's ability to deal with its competitive environment (Yazdanfar & Öhman, 2015).. Fish farmers will commonly need to have access to sources of finance for improvements that generate sufficient income, in a context where access to credit is a common difficulty for many small holders (Phillips, Beveridge, Weirowski, Rogers, & Padiyar, 2011).

Sources of debt finance include overdrafts, bank loans and trade credit (Moid & Dixit, 2019). The option for farmers with smaller operations is borrowing from micro credit schemes (Demirguc-Kunt & Levine, 2008). The highlight of this kind of finance is its prompt availability to the businessman. Here it is imperative to get the transaction conducted as quickly as possible. Short term business finance is appropriate for both new and existing businesses (Bank, 2018). While looking through the resource of short-term business finance, it is important to remember that some sources of finance will be suitable for some businesses, but not for others. When dealing with new businesses, some banks will grant only short-term loans, because these loans are less risky than loans with longer terms. Short term business finance can be a suitable way to raise working capital and cover accounts payable. There are various types of debt finance that a business can access at varying terms and conditions: bank overdraft, trade credit, leasing, bank loans and credit cards (Bank, 2018).

The Fisheries and Aquaculture Development Board in Canada provides financial assistance in the form of loans and loan guarantees for aquaculture production and related services. The program is designed to complement other sources of lending and financial institutions. The applicant must have knowledge of aquaculture and business skills, a good credit history, sufficient collateral must be provided for the proposed financing; and the applicant must have or own a reasonable amount of equity in the business (Mitra et al., 2019).

In Eastern Africa, aquaculture can generally be described as being under-developed, though it should be noted that considerable success has been achieved through farming of Nile Tilapia in Uganda. The under-developed status of aquaculture in Eastern Africa can be explained by several problems namely: knowledge mobility and know-how and lack of markets, lack of capital and poor infrastructure (Mandania, 2012). East African countries are amongst the poorest in the world. The economies of these countries depend mainly on agriculture, which includes fisheries. The countries are harnessing their agricultural resources to improve the welfare of their citizens (Companhia & Thorarensen, 2012).

In Kenya aquaculture has lately become a source of protein. It has now spread to parts of the North Rift, Central and Eastern Provinces, which initially were not fish growing areas. A number of fish farmers who were farming at subsistence level have turned into small-scale commercial fish farmers earning as much as K sh. 450,000 (US\$ 6 000) per acre of water surface. Some of the commercial farmers who are starting production want to produce both for the local and export markets. Thus, it is likely that in the next three years aquaculture will make a significant contribution to both food security and foreign exchange earnings in Kenya, (FOA, 2016).

Fish farming in Kisumu County has expanded since the Economic Stimulus programme was introduced (Kenya et al., 2005). Kisumu County has great potential for aquaculture since the region is endowed with good climate that favors farming of a variety of fish species. The Lake Victoria environmental programme sustainability watch revealed that successful farmers in aquaculture were expanding and increasing the number of their ponds. The adoption of fish farming could help to supplement the dwindling fish stocks in Lake Victoria according to the

Lake Victoria Environmental Programme's Sustainability Watch (SUSWATCH, 2015). It perceived high cost of start-up as a big problem for groups in the region. The programme revealed that poor management skills had also contributed to lack of interest in aquaculture. Data from the fisheries offices estimated the total fish ponds in Nyando to be 1,100 yet SUSWATCH believes Nyando and the sub-counties surrounding it could actually double or triple the number.

THEORETICAL AND LITERATURE REVIEW

The Debt signaling theory developed by Adam Hayes (2022) states that when a company increases its debt capital it's a sign that the company is credit worthy and capable of going after growth opportunities making it a positive sign. A negative sign is when a company reduces its debt load and seeks to raise capital through equity. Companies have the option of raising capital in two ways either through debt or equity. Debt is often preferred over equity since cost of equity is higher and it's a means of diluting ownership of a company by letting in new investors (Hayes & O'Brien, 2021). A company has the option of using debt finance through corporate bonds, bank loans and trade credit. This makes the investors believe the company is financially sound and can thus seek lower financing costs to grow other than issuing shares. Debt is usually preferred to equity because the rights of ownership are not shared or transferred; neither do the voting rights get relinquished to creditors. It's less costly and comes with the tax advantages compared to equity funding.

Sikveland and Zhang (2020) did a study on the determinants of capital structure in the Norwegian salmon aquaculture industry. Capital structure is represented by liquidity, long-term, short-term debt, and total debt. A unique panel data set of all Norwegian salmon farming companies was used, the econometric results showed that profitability is negatively linked to short-term and total debt, and positively associated with liquidity; i.e., growth firms have lower liquidity. Financing is required for firms to increase investment; therefore, an analysis of the factors that enable or constrain different sources of financing is important. Several factors can influence the financing policy of firms. Firms finance investments and operations using different sources of capital, such as equity, long-term debt (LTD), and short-term debt (STD). Some factors facilitate the use of certain financing sources, whereas others constrain the availability of financing. A company that is publicly listed more easily raises equity capital from new and existing investors. Being listed may also make it easier to obtain other sources of financing.

Parker, Lipton, and Harrell (2020) Maryland oyster aquaculture profitability did a study that compared the different sources of capital on the profitability of oyster aquaculture operations in the state of Maryland. The study found out that the unique mix of grants and low-interest loans results in greater profitability, compared to the use of traditional debt financing or self-financed operations. This study evaluated differences in farm-accounting metrics comparing them to self-financed operations or conventionally funded operations. Operations with MARBIDCO funding on water-column and bottom-culture oyster aquaculture operations in Maryland was also analyzed. Bottom-culture and water-column operations had significantly higher net present value and internal rates of return when they were MARBIDCO-financed compared to other sources of capital. This research concluded that oyster aquaculture operations which make use of MARBIDCO financing or similar options had a better chance of success and highest financial return. The research also suggests that if significant funds could be identified or obtained either by government or private investments establishing programs similar to the MARBIDCO Shellfish Aquaculture Loan Fund could help improve the financial profitability of aquaculture operations in other areas of the world.

Dawson (2016) did a study on exploring financial inclusion for smallholders while promoting the sustainable development of smallholder aquaculture in developing countries. A case study of a smallholder shrimp cooperative in Aceh, Indonesia. He observed that smallholder aquaculture farmers must invest in their farming activities in order to grow output sustainably and increase their income, however these farmers, are locked out of formal financing structure and left to source investment capital informally. There is sufficient evidence supporting financial inclusion of smallholders to provide this access to credit from formal intermediaries. To achieve development and environmental outcomes this study explored financial inclusion and presents a conceptual framework, through which to consider financial inclusion interventions to assist smallholders in aquaculture. Mobile phone finance value chain financing, are suggested and evaluated against the key barriers to

financial access smallholders in aquaculture face.

Kleih et al. (2013) conducted a study on financial services for small and medium scale aquaculture and fisheries producers in developing countries. Case study method was used to analyze the economics of small and medium scale aquaculture with particular interest in the capital requirement needed to cover investment and operating costs against the demand and supply of financial services. To achieve sustainable growth in aquaculture businesses in sub Saharan Africa a number of constraints need to be addressed they include the technical and financial challenges. Traditional financial instruments seem unable to meet the financial needs of small and medium-scale enterprises (SMEs) in the aquaculture and fisheries sector (Kleih et al., 2013). Accordingly, innovative financial models for SMEs need to be developed to fill the gap between traditional banking and grant-based donor finance. One key characteristic of investment funds specializing in SMEs in Africa is the combination of investment funds with business development funds in order to ensure the economic growth of SMEs as well as the likelihood of prompt loan repayment.

Ayewalehinmi and Agbebi (2018) studied the impacts of non-institutional microfinance agencies on fish marketing in Okitipupa, Ondo State, Nigeria. Purposive sampling technique was used to select fish marketers and questionnaire was administered on them. Data analytic tool included descriptive statistics. It was observed that all the fish marketers belong to either one microfinance group or an association of likeminded individuals. Most of the marketers took loans for their businesses. However, a larger number of the respondents borrow money from local cooperative societies but microfinance remain the best option for those who do not have savings prior to the time of loan application or starting a new business. It also serves as the closest loan option for small scale marketers who cannot approach a commercial bank or private money lenders for loans. Based on the low interest rate which is mostly below 15% and flexible repayment terms and period, it remains one of the best sources for loans for starting business and catering for marketing emergency needs of these rural people. The absence of government grants and credit facilities for marketers also makes non-institutional microfinance to be the most accessible option for different forms of savings and loan grants. The study concluded that 52% of the respondents benefitted from the non-institutional based microfinance agencies. It is recommended that government should support the fish marketers by increasing their financial base through the provision of long term and single digit loans with flexible loan repayment plan and to encourage financial institutions to get involved in the process of providing low-interest financing structure.

Karmakar, Mehta, Ghosh, and Selvaraj (2011) did a study on microfinance services for coastal small scale fisheries and aquaculture for South Asia countries. Available secondary data indicate that small scale fish workers cannot access formal institution credit except through intermediary people's organizations (SIFFS), State cooperatives, NGOS and MFIs. Fish workers in the small scale fisheries sector in India, Bangladesh and Sri Lanka have always been very poor and amongst marginalized communities. Middlemen have control over credit and fish marketing that drains away the surplus generated and thus make them indebted always. People still rely on money lenders, financiers' chit funds, borrowing from friends and relatives for raising funds for life cycle needs, housing, education of children and emergencies.

Karmakar et al. (2011) in his study attempted to quantify the credit gap after estimating the present level of demand flow in Bangladesh. In the absence of adequate institutional credit, the fishers folk's only recourse is the informal credit system for which the fishermen have to pay a heavy price in terms of high interest outgo as well as selling the prime quality catch at a predetermined rate that may be half the market price. The study brings out the effect of exploitation of fishermen by the middle men after financing them but at the same time, explains the dependence on banks and other organizations for financing aquaculture in the South Asian countries. It is recommended that there is a need to improve access to finance, especially for small-scale producers, to overcome these challenges and develop confidence in the financial institutions to finance these fisher folks.

Mago and Hofisi (2014) conducted a study on conceptualizing microfinance for effective small holder farming in Africa. The paper used concept review to justify microfinance as a strategy for boosting smallholder production. Smallholder farmers in Africa need pro-poor interventions to alleviate their poverty through self-sustenance. Microfinance cannot have a great impact on poverty until it significantly infiltrates the rural areas where activities by smallholder farmers need financial support. The integrated view was used because it focuses on the

provision of credit facilities, follow-up services such as training, whilst the minimalist view is concerned about giving credit only. Many rural farmers have no access to the traditional financial system. Therefore, basic financial services are essential for the management of their productive endeavors. This paper argues that microfinance plays a pivotal role in the commercialization, not only of smallholder farming activities but also the successful implementation of agricultural ideas. Critics argue that the financial sector in most countries does not cater for rural finance because they require physical collateral security that rural people do not have. In this article, micro-finance is seen to be a useful intervention that can be employed to financially empower the aquaculture sector.

Quagraine, Ngugi, and Amisah (2010) conducted a study on analysis of the use of credit facilities by small-scale fish farmers in Kenya. The study examined factors that affected the decision of fish farmers in Kenya to utilize credit facilities in fish production using a probit model. The analysis suggests that farmers in the Western province will have a 19% more probability of using credit facilities for their fish farming operations than farmers from the other provinces such as the Rift Valley. They observed the level of credit use in fish farming is very low. Access to credit is among several factors that affect farmers' decision of whether to use particular technology or services. The effect of tilapia sales on the probability of credit use by fish farmers is more than three times that of catfish sales. Total pond acreage owned by fish farmers had a positive effect on credit use but the effect was very small and negligible. The level of fish farmers' use of credit facilities is very low, and there is probably the need to educate farmers on credit use and for the government agricultural lending agency and other commercial agricultural lenders to invest in this enterprise. Kenyan lending institutions have financed traditional agricultural enterprises, and with the growing production of farmed fish, more research is needed to document the aquaculture business model to assist in assessing the profitability potential in aquaculture (Quagraine et al., 2010).

Method

The study adopted the cross sectional research design and purposive sampling techniques in selecting the aquaculture enterprises through registered beach management units and county officials of the aquaculture department. Before administering the questionnaire, permission was sought from university management who introduced the researcher to the respondents through a letter. The researcher introduced the purpose of the study, being academic and requested a few minutes of their time to fill the survey instrument. Respondents were informed that their participation in the study was voluntary and their protection was guaranteed through anonymity. The survey instrument was taken right after completion.

Data was collected using a closed-ended self-administered questionnaire. The unit of analysis was the aquaculture enterprises, units of observation being 700 fishermen and traders who are members of the 2 largest beach management units in Dunga beach, and Ogal beach of Lake Victoria-Kisumu County. Therefore 248 group members and 10 county officers will be selected to participate in the study making a total sample of 258 respondents.

This represented 86.4% response rate which is above the acceptable threshold of 50% (Fincham, 2008). This study suffers a 13.6% non-response bias. The results showed that the female respondents were 53 (23.8%) while the male respondents were 170 (76.2%). This means that males were dominant in the aquaculture enterprises. From the findings results showed that the respondents in the age below 30 years were 38 (17.0%) while the majority were 69 (30.9%) in the age group between 41 -50 years. The study also revealed that 67 (30.0%) of the respondents were in the age bracket of 31-40 years while these at the age bracket of 51 and above were found to be 49 (22.0%). This therefore means that the respondents in the aquaculture enterprises were mature enough and therefore assumed to be quite reasonable.

This study used both primary and secondary data. A data collection sheet for secondary data was used to get the data for financial performance. Primary data was collected using interview schedule and questionnaires. Secondary data was obtained from audited financial reports of the largest registered Beach management units with the area of study. These include Dunga Beach Management Unit and Ogal Beach management Unit along the shores of Lake Victoria that have organized structures for those practicing aquaculture.

RESULT AND DISCUSSION

The results in the figure below indicated an agreement of the respondents (Mean = 4.13; Std Dev = 0.816) that Bank loans have been tailored to suit the operations of aquaculture enterprises. The mean of 4.13 means that a majority of the respondents agree with the statement at an above 4 average in the Likert scale. On the same note, the standard deviation of 0.816 indicated that much as the respondents had agreed to the statement, there were also some dissenting voices to the contrary of the statement and therefore, not all the respondents agreed.

This study also indicated that respondents agreed with a (Mean = 3.8; Std Dev = 1.207) on the statement that the collateral needed to accessing debt financing for aquaculture are easily available. This was the lowest statement agreed on in term of the mean. This mean however is close to four in the Likert scale thus can be concluded to have been agreed on. The statement however has a slightly high standard deviation of 1.207 meaning that the dissenting opinions of the respondents on that statement couldn't be taken lightly.

Figure 1: Descriptive results debt financing variable.

Statement	N	SA (%)	A (%)	U (%)	D (%)	SD (%)	Min	Max	Mean	Std. Dev
Aquaculture enterprises access to debt for business startups would grow the fishing business and thus the profits	223	28.3	46.6	18.4	6.7	-	2	5	3.96	0.859
Access to working capital in cash would increase the production capacity of the aquaculturists and thus their returns on investment.	223	26.5	47.5	11.7	14.3	-	2	5	3.86	0.97
Access to bank finance would improve the quality of aquaculture products thus increase both the income levels and productivity.	223	38.1	34.1	17.9	7.6	2.2	1	5	3.98	1.035
Availability of trade credit to the aquaculture enterprises will make aquaculture more lucrative to invest in.	223	29.1	47.5	9.4	11.7	2.2	1	5	3.9	1.024
Financial institutions have no financing options for starting aquaculture businesses today.	223	28.7	49.3	13.5	6.7	1.8	1	5	3.96	0.924
The collateral needed to access debt financing for aquaculture startups is easily available.	223	35	36.8	11.2	10.3	6.7	1	5	3.83	1.207
Bank loans need to be tailored to suit the operations of aquaculture enterprises.	223	35.9	46.6	12.6	4.9	-	2	5	4.13	0.816
Aquaculture enterprises have limited financing options available for growing their businesses.	223	35.4	36.8	20.6	6.3	0.9	1	5	4	0.947
Valid N (Listwise)	223								Weighted Mean	3.95

The descriptive statistics for secondary data including mean, standard deviation, minimum and maximum have been run to understand the distribution of the variables used financing structure and financial performance. The

results are as under.

Table 1: Descriptive Statistics For Secondary Data.

Variable	Obs.	Mean	Std Dev	Min	Max
Firm	72	-	-	-	-
Year	72	-	-	2015	2022
Debt Financing	72	641,253.80	202,740.90	239,801	995,235
Financial Performance	72	362,415.20	224,993.90	101,768	927,016

Source: Research data 2023

The analysis took an 8 year period of spanning between 2015 and 2022 for a total of nine aquaculture enterprises. This gave a total of 72. From the results, the average financing structure in terms of debt financing amounted to 641253.8 Kenya Shillings with a standard deviation of 202740.9 Kenya Shillings.

This came as a result of a minimum of 239801 Kenya Shillings with a maximum of 995,235 measured under the same currency. On the other hand, financial performance measured by net income averaged at Kshs 362415.2 with a standard deviation of Kshs 224.993.9 coming ranging from a minimum of Kshs 101,768 and a maximum of Kshs 927,016. In terms of the study period, the financial years run from 2015 to 2022.

A. Autocorrelation Test Results

Autocorrelation is where the correlation between the values of the same variables is based on related objects. Autocorrelation makes predictors seem significant when they are not. In this study, autocorrelation test was conducted using Durbin-Watson Test. The results are presented in Table 2.0 below.

Table 2.0: Autocorrelation Results

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	0.563	0.317	0.301		0.40949	1.673

a. Predictors: (Constant), Debt Fin

b. Dependent Variable: Fin Performance

In this study, Durbin-Watson's d, tested the null hypothesis that the residuals were not linearly auto-correlated. While d could assume values between 0 and 4, the values of around 2 usually indicate no autocorrelation. A value of d between 1.5 and 2.5 is a clear indication that there is no auto-correlation in the multiple linear regression data (Gujarati & Porter, 2009). The Table 2.0 shows findings that the Durbin -Watson d = 1.673.

This d value is between the critical values of $1.5 < d < 2.5$. The statistical findings therefore assume that there is no first order linear autocorrelation in the regression data.

B. Correlation Tests between Debt Financing and Financial Performance

The correlation between debt financing and financial performance of aquaculture enterprises in the Lake Region economic bloc, Kenya was performed. The results presented were presented in Table 4.0

Table 3.01: Debt Financing

Variables	Pearson Correlation	Sig. (2-tailed)	N
Debt Financing & Financial Performance	.592**	0	222

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

The results in Table 3.0 indicates a correlation coefficient of 0.592 between debt financing and financial performance at $p = 0.000$. This indicates a moderately positive correlation between these two variables suggesting a moderately strong relationship between debt financing and financial performance. In this case, the positive correlation indicates that as debt financing increases, financial performance tends to improve.

C. Regression Analysis

In this study, multiple regression analysis was conducted so as to evaluate the relationship between debt financing and financial performance.

The findings shown on Table 3.0 reflect a two-model summary for debt financing on financial performance of aquaculture enterprises in the lake region economic block, Kenya.

To test for individual significance of a coefficient, t-test was used under the null hypothesis. The test was done at 95% level of significance ($\alpha=0.05$), critical value $t=1.96$. The null hypothesis is rejected when the t-calculated is strictly greater than the t-tabulated.

The hypothesized research hypothesis for Debt Financing was stated as:

Ho: $\beta_1=0$: Debt Financing has no significant effect on the Financial Performance of Aquaculture enterprises in lake region economic bloc, Kenya.

The test was done at 95% level of significance ($\alpha=0.05$), critical value $t = 1.96$. T-test statistic was used to test for the significance of debt financing. The results indicated; the t value obtained was 10.886. Comparing the t-tabulated and t-calculated values statistically, it is evident that the $t_{calc} > t_{\alpha}$. The study therefore rejected the null hypothesis and concluded that debt financing has a significant effect on the financial performance of aquaculture enterprises in Kenya.

Table 4.0: Regression Model Summary for Debt Financing

Model	Variables	Unstandardized Coefficients (β)	p-value	Standardized Coefficients (β)	p-value
	Constant	1.702	0.237	-	0
1	Debt Financing	0.582	0.054	0.592	0
	R ²	0.35	0.00	-	-
	F statistics	-	-	-	-

Table 4.0 shows there is a positive effect of debt financing on financial performance ($R = 0.592$, $R^2 = 0.350$) and ($p=0.000$). The R^2 explains the variations in the dependent variable that can be explained by the independent variables. R^2 of 0.350 indicates that 35.0% of the variations in the financial performance of aquaculture enterprises in the lake region economic block can be accounted for by debt financing.

CONCLUSION

Debt Financing and Financial Performance

The results of the study show a moderately positive correlation between debt financing and financial performance. This implied that availability of debt finance enhanced the financial performance of the aquaculture enterprises. Debt finance made available capital for more cage set ups and aquaculture start-ups without compromising the ownership of the enterprises. This motivated the owners to work hard and improve production output, hence revenue in the long run. This can be confirmed by studies done on profitability analysis of small holder aquaculture farms in Nigeria that concluded that the farms were not profitable despite the good cash flow but if more ponds were added then they would be more profits earned from the business. (Adelesi & Baruwa, 2022). To expand more capital is required which may be obtained through trade credit, overdrafts or trade payables as form of debt financing.

The study also rejected the null hypothesis and concluded that debt financing had a significant effect on the financial performance of aquaculture enterprises in the Lake region Economic bloc Kenya. The critical value $t = 1.96$. T-test statistic was used to test for the significance of debt financing and the t value obtained was 10.886. This implied that access to debt financing would enable the farmers produce more if they are well facilitated and equipped to carry out their fishing activities. They would be able to meet the growing demand of fish in the country at the same time generate more profits due to the economies of scale. From the findings, the study found that there was a positive and statistically significant relationship between debt financing and financial performance ($R = 0.592$, $R^2 = 0.350$) and ($F(1,220) = 118.504$, $p=0.000$). The R^2 explains the variations in the dependent variable that can be explained by the independent variables. R^2 of 0.350 indicates that 35.0% of the variations in the financial performance of aquaculture enterprises in the lake region economic block can be accounted for by debt financing.

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