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Business Development Services of Cooperatives and Financial Performance of Dairies: A Case from Kavrepalanchok District, Nepal

Rashesh Vaidya[1]
Shiba Prasad Sapkota[2]
Rupa Bajagain[3]

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Abstract

Purpose: *The study explores the influence of Business Development Services (BDS) on the financial performance of dairies in Kavrepalanchok district, Nepal, which are vital for improving rural farmers' livelihoods by providing input supply, infrastructure, and technical training.*

Methods: *The study analyzed data from 244 dairy cooperative members in Mandan Deupur Municipality, Kavrepalanchok district using a survey and a five-point Likert scale. Reliability and normality were tested using Cronbach's Alpha, one-sample t-test, Kolmogorov-Smirnova test, and Shapiro-Wilk test. Regression analysis was conducted to examine the impact of business development services on dairy financial performance.*

Results:*The study finds that market accessibility and training for farmers in dairy products enhance productivity, quality, and sales turnover. However, farmers did not receive better training and technical assistance than expected. Input supply services from dairy cooperatives were not a concern for farmers. Infrastructure support, particularly in milk transportation and storage, is crucial for maintaining product quality and market access, impacting revenue generation.*

Conclusion: *BDS enhances financial stability, but challenges persist in marketing skills and technical knowledge, necessitating improvements for enhanced cooperative performance.*

Keywords: Business development, dairy cooperatives, financial performance, Nepal

[1] *Rashesh Vaidya, PhD is a visiting faculty at Faculty of Management and Law, Nepal Open University, Lalitpur. He can be reached at rashesh@nou.edu.np*
[2] *Shiba Prasad Sapkota is a PhD scholar at Faculty of Management, Tribhuvan University. He is an Asst. Lecturer at Balkumari College, Bharatpur, Chitwan. He can be connected at shibasapkota986@gmail.com*
[3] *Rupa Bajagain is residing at Nayagaun, Mandan Deupur Municipality-3, Kavrepalanchok. She can be linked through bajagainrupa01@gmail.com*

I. Introduction

The organized dairy development activities in Nepal began only after 1952. The establishment of a Yak cheese factory in Langtang of Rasuwa district under the assistance of Food and Agriculture Organization (FAO) in 1953 is pioneer activities in the dairy development of Nepal (FAO, 2010). Dairy is a vital component of Nepal's economy, contributing significantly to agricultural GDP, providing livelihoods for millions, and ensuring nutritional security. Shingh et al. (2020) stated that the dairy sector in Nepal, despite its modest contribution to global milk production, plays a crucial role in economic growth and social cohesion. Despite its low share of agricultural Gross Domestic Product (GDP), it contributes significantly to employment and the cooperative movement. The Nepalese dairy sector contributes significantly to the country's agricultural GDP. Co-operatives play a crucial role in agriculture and livestock, establishing strong networks and linkages in rural households. They also contribute to socio-economic development by creating employment opportunities and ensuring rural cash flow.

The dairy co-operatives have significant impact on the day-to-day lifestyle of the farmers living in the respective village. The farmers with little to no land and property have also been able to earn a good monthly income from the sale of milk. This has created a regular and sustainable source of income even during times of economic instability such as during COVID-19 lockdown. The co-operatives from distant and rural areas of Kavrepalanchok have daily access to the cities and market hence making it easy for the farmers to fulfill their agricultural needs through co-operatives. The dairy sector in Kavrepalanchok faces health and safety risks, posing challenges for dairy cooperatives. They must ensure fresh milk transportation to production centers. However, challenges include dairy production, income earnings, sector function, and problems faced by dairy co-operatives and farmers. Farmers in Kavrepalanchok face challenges such as ensuring the health and safety of dairy production, maintaining the quality and freshness of milk during transportation, and earning a stable income despite market fluctuations. Additionally, limited access to resources and infrastructure in rural areas further complicates their agricultural and dairy operations.

According to Faustin and Rusibana (2020), input services, training and technical assistance, infrastructure support, and market access services supplied by business development services all have an impact on the financial performance of the dairy cooperative. Similarly, as per Mwankiki et al. (2022), business development services account for 23 percent of the growth of Kenyan small and medium-sized firms. Business Development Services (BDS) are crucial for micro and small enterprises (MSEs) facing various constraints such as low education levels, weak management, competitive markets, low-quality products or services, lack of marketing skills, inefficient infrastructure, and a lack of familiarity with the local economic environment. They help beneficiaries develop and produce quality products, access higher value markets, and manage their enterprises effectively (ILO, 2005).

Dairy co-operatives in Kavrepalanchok district began in 1956-61 but became more effective in 1981 when Dairy Development Corporation (DDC) encouraged farmers to form Milk Producer's Associations (MPAs) with no formal legal status. In 2016, the Nepali government recognized Kavrepalanchok as a pioneering region for milk production self-sufficiency. The present paper focuses on business development practices and performance of dairy cooperatives in Kavrepalanchok and provides recommendations to meet future challenges. A major fraction of the milk is found to be handled by the unrecognized sector in Nepal. Sweet shops, hotels, restaurants and tea shops which manufacture short to medium shelf-life milk products and are not recognized by Nepalese Dairy Act comes under unrecognized sector. There is no doubt regarding the dairy co-operatives playing a vital role in alleviating rural poverty. To promote the growth and performance of the dairy sector, it is important to bring the unrecognized sector under the regulatory framework of the Nepalese Dairy Act and provide support to dairy co-operatives.

II. Reviews

Cooperative farms in West Bengal outperform non-cooperative farms in profitability, according to a study by Sarker and Ghosh (2008). BDS can help small and medium enterprises improve quality, efficiency, and operations for a long-term competitive advantage. Similarly, Gathenya et al. (2011) suggest that Business Data Systems (BDS) can help SMEs improve quality, efficiency, and operations for a long-term competitive advantage. A study by Oğuz and Yener (2018) suggests that larger enterprises lead to higher productivity in labor, capital, and input usage, providing insights for optimizing dairy production processes for sustainability.

Shkodra (2020) studies highlighted the prevalence of Holstein Frisian and Simmental breeds in Kosovo's dairy sector, with farms primarily located in Pristina. They emphasized the importance of direct payments for milk quality and the positive correlation between farm size and profitability, with feed costs being a dominant expense.

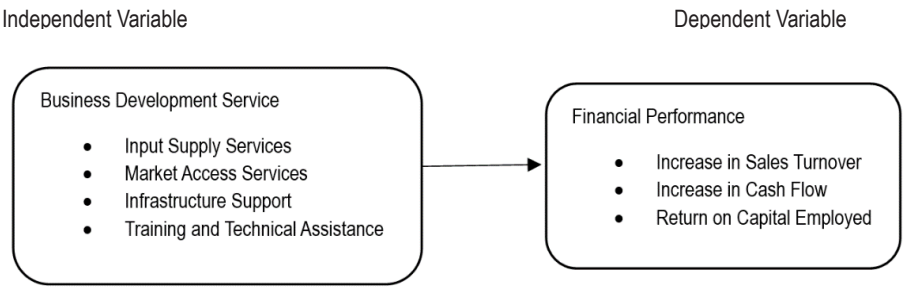
As per Shingh, et al. (2020), the dairy sector in Nepal is crucial for economic growth and social cohesion, connecting urban consumers with rural producers. Despite its modest contribution to global milk production, it contributes significantly to employment and the cooperative movement, aiming to uplift millions of rural households. However, its share of agricultural GDP remains low. Kamanduliene and Kulobokas (2020) analyzed the financial performance of Lithuanian dairy sector firms using Economic Value Added (EVA) as a metric. The study found that EVA fluctuates over time, with export revenue and gross margin being influential factors. Similarly, Faustin and Rusibana (2020) studied the impact of business development services on the financial performance of dairy cooperatives in Musanze district. They aimed to identify the extent of business support services provided and evaluate their financial performance. The study used a case study approach to provide insights into the dynamics of support services and financial outcomes within the dairy sector.

Khan et al. (2021) evaluated the solvency and profitability of key Indian dairy companies, including CDPL, Hatsun, Heritage, Parag, and Prabhat. The study revealed significant differences in current ratio, debt-to-equity ratio, proprietary ratio, debtor turnover ratio, creditors turnover ratio, total assets turnover ratio, inventory turnover ratio, fixed assets turnover ratio, and interest coverage ratio.

Golebiewska et al. (2022) conducted a study comparing dairy enterprises in Poland and Ukraine, revealing that Polish firms showed stable but low profitability, while Ukrainian counterparts showed higher but fluctuating returns, highlighting challenges in the Polish sector. Sathya and Devarajan (2024) analyzed the financial position of sampled dairy cooperative, Aavin Milk Co-operative and found that the performance of the company must be increased every year but the efficient management of adapting to changes is needed to run towards success. The company has good reserves and a reputation, which will lead to excellent progress in progress in the upcoming years.

Figure1

Conceptual Framework



III. Methodology

The paper focuses on dairy cooperatives in Kavrepalanchok, seeks to provide insights that could be relevant to other dairy cooperatives in similar settings. Hence, a positivism is suitable for the paper, as it aims to produce generalizable findings that can be applied to similar contexts. The paper uses a village-based approach to examine the impact of business development on the financial performance of Kavrepalanchok dairy co-operatives, involving structured surveys, i.e. quantitative research with dairy co-operative members with the aim of providing a local perspective on sustainability strategies.

The data required for this study has been used in survey analysis among the dairy cooperatives of Mandan Deupur Municipality, Kavrepalanchok district. All the members of 51 dairy cooperatives operating within Kaverpalanchok district are considered the population oof the study. The number of cooperative members varies from time to time. Hence, a purposive sampling technique has been followed for the paper, where the researcher deliberately selects specific individuals or groups to include in the study based on their knowledge, expertise, or specific characteristics relevant to the research objectives. For study purposes, 244 dairy cooperative members of Mandan Deupur Municipality-3 were considered as a sample of the paper.

The paper has used a five-points Likert scale to get opinions from the sample respondents. Cronbach's Alpha has been applied to test the reliability of the items used in the questionnaire. The one-sample t-test is a statistical approach that determines whether a set of observations could have been created by a process with a known mean. The Kolmogorov-Smirnova test and Shapiro-Wilktestare used to test normality of the variables. The paper further runs a regression analysis to see the impact of business development on the financial performance of Kavrepalanchok dairy co-operatives.

Reliability Result

The paper has done a reliability test after a pilot study among the 50 respondents. The result has been illustrated below:

Table 1

Reliability Result

Constructs	Total Items	Items Dropped	Cronbach's Alpha
Input Supply Services	2	Nil	0.567
Market Access Service	3	Nil	0.695
Infrastructure Support	3	1	0.480
Training and Technical Assistance	3	1	0.950
Increase in Sales Turnover	4	2	0.773
Increase in Cash Flow	3	1	0.286
Return on Capital Employed	2	Nil	0.709

Note. Field Survey, 2024

Training and technical assistance, increase in sales turnover, and return on capital employed are seen with good reliability, followed by moderate for input supply services, and market access service. A Cronbach's alpha value of 0.286 is generally considered very low and

indicates poor internal consistency reliability for the scale or test being evaluated for the construct, 'Increase in cash flow'. Similarly, Cronbach's alpha value of 0.480 for the construct, 'Infrastructure Support' is considered poor in terms of internal consistency reliability. While it is slightly better than a value of 0.286, it still falls below the generally accepted threshold for reliability in most research contexts. Finally, Cronbach's alpha value of 0.567 for a scale measuring 'Input Supply services' falls in the questionable to poor range of internal consistency reliability. While it is better than values below 0.5, it still does not meet the generally accepted threshold of 0.7 for acceptable reliability in most research contexts. Eventually, four (4) constructs are only considered for further study, while above mentioned three (3) constructs with poor reliability are dropped from further analysis.

IV. Results and Discussion

The following section deals with the results of the survey:

Respondents' Profile

Table 2 below shows the profiles of the respondents.

Table 2

Respondents' Profile

Sex	No.	Age in year	No.	Involvement in year	No.
Male	183 (75.0)	20-30	24 (9.8)	Less than 10	32 (13.1)
Female	61 (25.0)	31-40	65 (26.6)	11-20	61 (25.0)
		41-50	78 (32.0)	21-30	92 (37.7)
		51-60	61 (25.0)	31-40	43 (17.6)
		61 and above	16 (6.6)	41 and above	16 (6.6)
Total					244 (100.0)

Note. Field Survey, 2024

Table 2 highlights a predominantly male sample, with most individuals in the 41-50 age range and a significant portion having 21-30 years of involvement, indicating experienced participants.

Opinion on Business Development Services

Table 3 on Business Development Services (BDS) related to dairy cooperatives indicates generally positive responses among farmers on services supporting their production and market access, with variability across different service areas.

Table 3

Opinion on Business Development Services

Items	Mean	Std. Deviation	T-test
Market Access Services			
The dairy products reach the market while still in their fresh quality.	4.46	0.56	96.24(0.000)
There are enough collection or distribution points that have helped farmers distribute the milk to the market.	4.59	0.61	91.63(0.000)

The satisfaction of buyers with the finished products released onto the market has led to an increase in sales.	4.11	0.79	61.36(0.000)
Training and Technical Assistance			
Farmers have received training in milk quality handling.	3.46	1.44	26.76(0.000)
Farmers are getting proper marketing skills for better market access.	3.59	1.24	32.74(0.000)

Note.Field Survey, 2024

Table 3 shows that market access services are effective but could be enhanced to improve customer satisfaction further. The area needing the most attention is training and technical assistance, where cooperatives might consider additional programs to enhance farmers' skills in quality handling and marketing, which could positively impact the entire dairy value chain.

Opinion on Financial Performance

Table 4 on financial outcomes such as sales turnover, cash flow, and return on capital employed shows positive trends among farmers involved with cooperatives, though there is some variability in levels of satisfaction and perceived benefit.

Table 4

Opinion on Financial Performance

Items	Mean	Std. Deviation	T-test
Increase in Sales Turnover			
Farmers can now sell their output at better prices that meet their costs of production.	3.84	1.00	44.44 (0.000)
There is a sufficient and regular flow of income for the farmers.	3.69	0.74	56.91 (0.000)
Return in Capital Employed			
Farmers have been able to reap benefits sufficient to cover the initial capital invested.	4.25	0.69	72.99 (0.000)
The period within which you can recover the capital you invested has reduced over the years.	4.39	0.75	70.28 (0.000)

Note. Field Survey, 2024

The cooperative's impact on financial outcomes appears generally positive, with strengths in enhancing access to finance and return on capital employed. Sales turnover shows improvement but could benefit from additional support to stabilize prices and regularize income flows for farmers. Improving financial management practices within cooperatives may also contribute to more effective cash flow handling, further benefiting the financial stability of members

Descriptive Statistics and Normality Test of Variables

The table below illustrates the descriptive statistics and normality test of variables:

Table 5

Descriptive Statistics and Normality Test of Variables

			Kolmogorov-Smirnova		Shapiro-Wilk	
Variables	Mean	Std. Deviation	Statistic	Sig.	Statistic	Sig.
Market Access Service	4.39	0.51	0.195	0.000	0.880	0.000
Training and Technical Assistance	3.52	1.31	0.182	0.000	0.884	0.000
Increase in Sales Turnover	3.76	0.78	0.226	0.000	0.907	0.000
Return on Capital Employed	4.32	0.64	0.267	0.000	0.856	0.000

*Note.*Field Survey, 2024

The Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests indicate whether the distributions of the variables deviate from normality. All variables exhibit significant non-normality in distribution based on both the Kolmogorov-Smirnov and Shapiro-Wilk tests. This non-normality may be due to positive skewness. The non-normal distribution, particularly in areas with lower mean values (e.g., training and technical assistance), suggests that variability in service satisfaction is high, which may impact aggregate perceptions of cooperative effectiveness across different service areas.

Regression Analysis

The tables below illustrate the regression analysis among the dependent and independent variables selected in the paper.

Table 6

Regression Analysis for Sales Turnover

Model	Beta	T-statistics	p-value	VIF
(Constant)	4.227	9.503	0.000	-
Market Access Support	-0.214	-2.257	0.025	1.003
Training and Technical Assistance	+0.134	3.601	0.000	1.003
R-Square	0.073			
Adjusted R-Square	0.065			
F-statistics	9.471			
	(0.000)			
DW Statistics	1.405			

Dependent Variable: Increase in Sales Turnover

Model on Table 6 shows that while each variable has a statistically significant relationship with sales turnover, the overall explanatory power is relatively low. The positive impacts of 'Training and Technical Assistance' suggest these factors may directly support sales turnover growth. However, the negative coefficient for 'Market Access Support indicates a complex relationship that might require further analysis to understand fully. This could imply that increased market access support is associated with a decrease in the outcome being measured (e.g., farmer

income, satisfaction, or performance). Further investigation is needed to understand why this relationship is negative.

Table 7

Regression Analysis for Return on Capital Employed

Model	Beta	T-statistics	p-value	VIF
(Constant)	2.348	6.684	0.000	-
Market Access Services	0.381	5.093	0.000	1.003
Training and Technical Assistance	0.085	2.889	0.004	1.003
R-Square	0.120			
Adjusted R-Square	0.113			
F-statistics	16.44			
	(0.000)			
DW Statistics	0.890			

Dependent Variable: Return on Capital Employed

Table 7 shows both Market Access Services and training and technical assistance positively contribute to increasing the return on capital employed. While the model's R-Square indicates relatively low, it suggests that other factors not included in the model may also influence the dependent variable. The value of DW Statistics can violate the assumption of independence in regression analysis, leading to biased standard errors and unreliable significance tests.

Discussion

This study examined the impact of Business Development Services (BDS) on the financial performance of dairy cooperatives in Kavrepalanchok, Nepal. The findings provide a nuanced understanding of how different service areas affect key financial outcomes, highlighting both strengths and areas needing improvement. Sathya and Nanee (2024) found that efficient management within the dairy can bring better return, similarly, in context to dairy cooperatives in Kavrepalanchok also, prioritizing capacity-building programs could provide practical skills in marketing, quality handling, and financial management. This can bridge the existing gaps and improve overall productivity. Shkodra (2020) found that direct payment in the hands of the farmers help them to enhance their profitability, however, the current study could not build a relationship between the input supply services and sales turnover. Oğuz and Yener (2018) found the better input utilization helps in enhancement of the performance of the dairy, similarly, the study on dairy cooperatives in Kavrepalanchok, Nepal found a positive relationship between sales turnover, as well as with training and technical assistance. Faustin and Rusibana (2020) found a negative relationship between market access and financial performance of the dairy, while in context to Kavrepalanchok, the relationship is seen positive and significant.

V. Conclusion and Implication

This study examines the impact of business development services (BDS) on dairy cooperatives in Kavrepalanchok district, Nepal, focusing on their role in enhancing production, providing stable income sources, and promoting rural economic development. The research reveals that BDS positively influences farmers' productivity and satisfaction, with technical training for farmers, particularly in milk quality handling and market access, contributes to increased sales turnover.

However, the study also highlights the need for further investigation into the complexity of BDS's effect on sales turnover and the need for further optimization of these facilities. The

study also highlights better market accessibility for the dairy products produced from the dairy. The study suggests bringing updated Nepalese Dairy Act for further stabilizing and legitimizing the sector, fostering wider support and market uniformity for dairy cooperatives. In conclusion, the study highlights the vital role of dairy cooperatives in supporting rural farmers' livelihoods, promoting sustainable income, and contributing to local economic growth.

Increasing targeted training could improve members' skills in quality handling and marketing, directly impacting productivity and market competitiveness. As infrastructure support plays a crucial role in financial outcomes, focusing on milk transportation, storage, and seasonal management would enhance product quality and market reach, although the study did not show relevancy in context to the sampled district. Expanding collection points and improving customer satisfaction may boost sales turnover, as market access is a significant factor for cooperative growth. Strengthening financial management practices could stabilize income flow for members, especially given the variability in cash flow management reported in the study. This research contributes valuable insights into dairy cooperative operations in rural Nepal and highlights the role of BDS in bolstering rural income, profitability, and resilience.

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