# Enhancing Agribusiness Performance through Effective Supply Chain Management: A Study of the South West and Littoral Regions of Cameroon

## Atabong Nkeng Lionel[1], Molem C. Sama[2], and Nwahanye Emmanuel[3]

[1]PhD Research Candidate in Management, Faculty of Economics and Management Sciences, University of Buea Cameroon

[2]Professor of Economics, Faculty of Economics and Management Sciences, University of Buea, Cameroon

[3]Associate Professor of Management, Head of Department, Management Sciences, University of Buea-Cameroon

*Abstract*— This paper, titled "Enhancing Agribusiness Performance through Effective Supply Chain Management: A Study of the South West and Littoral Regions of Cameroon" explores how effective supply chain management can enhance performance among agribusinesses in the Southwest and Littoral regions of Cameroon. Employing a purposive sampling technique for comprehensive coverage, and utilizing a robust regression estimation approach, the analysis highlights the critical importance of supply chain management practices in influencing agribusiness performance in the South West and Littoral regions of Cameroon. Key findings indicate that customer relationship management and information sharing significantly enhance performance metrics, while supplier relationship management poses challenges, particularly regarding environmental sustainability. This underscores the necessity for a balanced approach that integrates social, economic, and environmental objectives. To improve agribusiness performance, it is recommended that businesses prioritize customer relationship management strategies to leverage their positive impacts, enhance information-sharing practices with a focus on quality, and balance supplier relationships with sustainability goals. Additionally, implementing training programs to address gender dynamics and harness the innovative potential of less experienced individuals can foster a more inclusive and effective agribusiness environment, ultimately driving performance improvements across the sector.

*Keywords*— Agribusiness Performance; Supply Chain Management Practices; Cameroon.

## 1. INTRODUCTION

The effects of supply chain management (SCM) practices on organizational performance are increasingly recognized, particularly within Cameroonian agribusiness firms. Research indicates that 84% of organizations prioritize SCM as a strategic focus, underscoring its critical role in enhancing operational efficiency (CSCMP, 2021). Companies with mature supply chain capabilities report up to 79% higher revenue growth and 15% lower costs compared to their peers (McKinsey, 2022). Furthermore, 82% of organizations have implemented lean manufacturing techniques to streamline operations, which not only improves efficiency but also enhances responsiveness to customer demands (Gartner, 2023). The importance of supply chain resilience has also become evident, with 63% of organizations prioritizing it to effectively manage disruptions (Deloitte, 2022). This shift reflects a growing awareness of the need to adapt to global challenges, making effective SCM essential for maintaining competitiveness in a rapidly changing market landscape (Ososanmi et al., 2022).

Moreover, effective SCM practices are linked to improved customer satisfaction, with organizations that align their supply chain strategies reporting a 40% increase in this area (Accenture, 2023). In the context of Cameroonian agribusiness, studies show a positive relationship between SCM implementation and performance outcomes, particularly regarding customer service (Faith, 2015). The integration of technology in supply chain processes further enhances performance, with firms utilizing analytics experiencing a 10% improvement in on-time delivery and a 15% reduction in inventory levels (CSCMP, 2021). These advancements highlight the significance of leveraging data to refine supply chain operations. Robust SCM practices are crucial for organizations seeking to thrive in competitive environments, as they not only drive operational efficiency but also foster customer loyalty and satisfaction (Muhammad & Qamari, 2021).

The challenges facing agribusinesses in Cameroon highlight significant gaps in supply chain management (SCM) practices, necessitating this study. Despite the agricultural sector accounting for 14.2% of the country's

GDP and employing over 60% of the population (World Bank, 2022), many agribusinesses struggle with inadequate infrastructure and limited access to finance. For instance, only 18% of the rural population has access to paved roads (AfDB, 2021), and just 2% of commercial bank lending is directed towards agriculture (IFAD, 2019). Furthermore, the effects of climate change exacerbate these issues, with studies predicting up to a 20% reduction in agricultural yields by 2050 due to severe weather patterns (FAO, 2022). Compounding these challenges are dysfunctional supplier-customer relationships, where demand forecasting inaccuracies lead to a loss of customer trust and increased supplier dominance, resulting in unfavorable terms for manufacturers (Lummus et al., 1999; Cox et al., 2003). Additionally, many small to medium-sized enterprises face a lack of sophisticated information systems, which hampers effective communication and increases non-value-added tasks (Xia & Zhang, 2007). This situation is further complicated by a poor understanding of quality management, leading to subpar raw materials and ultimately affecting product quality (Zhou & Benton, 2007). The lack of cross-departmental cooperation and shared objectives within organizations exacerbates these issues, as departments fail to align with customer needs and timely production schedules (Altekar, 2005). Given these multifaceted challenges, there is a critical need to explore effective SCM practices that can enhance performance and customer satisfaction within the agribusiness sector in Cameroon.

## 2. LITERATURE REVIEW

The empirical literature on the effects of supply chain management practices (SCMP) on organizational performance reveals significant insights into how various practices enhance performance across different sectors. Martina et al. (2023) conducted a study focusing on small and medium-sized enterprises (SMEs) in Kaduna State, Nigeria, highlighting the importance of integrating information technology (IT) capabilities with SCMP. Their findings indicate that customer relationship management and strategic supplier partnerships significantly improve SME performance. Supporting this, Hussain et al. (2018) noted that effective SCM not only influences organizational performance but also provides a competitive edge, while Wang and Kim (2017) found that social media can improve customer interaction capabilities, further driving performance outcomes. Additionally, studies by Gharakhani et al. (2012) and Tzokas et al. (2015) reinforce the idea that strong absorptive capacity and IT integration are crucial for enhancing performance.

Gharakhani et al. demonstrated that SCM practices significantly affect management effectiveness, while Tzokas et al. emphasized the role of technological capabilities in improving product development. This alignment emphasizes the critical role of SCMP in achieving better organizational results across diverse industries.

Kyeremeh and Dza (2018) explored the value creation aspect of SCMP in Ghanaian manufacturing firms. Their research utilized various analytical techniques, including regression analysis, to assess the impact of strategic supply chain practices on organizational performance. The results indicated that while value creation positively influences supply chain performance, it is less significant than the direct effects of SCMP. This finding is echoed by Gharakhani et al. (2012), who noted that SCM practices significantly affect management effectiveness and creativity. Moreover, Hingley et al. (2015) highlighted the necessity for effective coordination between supply chain partners to enhance performance. Additionally, Ghemawat (2016) discussed how strategic sourcing can lead to improved operational efficiencies. Kyeremeh and Dza found that a single value creation instance could lead to a 53% change in supply chain performance, although it negatively impacted information and technology management by approximately 26%. This underscores the necessity for firms to identify and implement effective SCMP that directly enhance performance metrics, as indicated by studies from Nyaga et al. (2010) and Attia (2015), which further illustrate the importance of integration and collaboration in achieving organizational success.

Tzokas et al. (2015) examined the interplay between a firm's absorptive capacity, technological capability, and customer relationship capabilities within the semiconductor industry in South Korea. Their findings revealed that firms with strong absorptive capacity and technological capabilities could significantly enhance their performance through improved product development and market responsiveness. Supporting this, studies by Al-Weshah et al. (2019) and Hingley et al. (2015) found that strong customer relationships and effective information systems are crucial for organizational success. Additionally, Kumar et al. (2022) emphasized the role of sustainable supply chain management in enhancing performance, while Sagawa and Nagano (2015) highlighted the importance of information quality. Al-Weshah et al. noted that customer relationship management systems can

positively influence performance, while Hingley et al. emphasized collaboration in supply chains as a key driver of success. This highlights the importance of integrating SCMP with broader organizational capabilities to achieve superior performance outcomes, as firms that leverage these practices are better positioned to respond to market demands and enhance their overall effectiveness, ultimately leading to improved profitability and growth.

Despite the growing body of literature on supply chain management practices (SCMP) and their impact on organizational performance, there remains a notable gap concerning agribusinesses in specific regions of Cameroon, particularly the South West and Littoral regions. Most existing studies focus on broader contexts or different sectors, such as manufacturing and SMEs, without addressing the unique challenges and dynamics faced by agribusinesses in these regions. For instance, while research by Hussain et al. (2018) and Kyeremeh and Dza (2018) highlights the importance of SCMP in enhancing performance, they do not specifically explore the agricultural sector in Cameroon, which is critical for the country's economy. Furthermore, the interplay between local agricultural practices, market access, and supply chain efficiency remains underexplored, indicating a need for targeted research that examines how SCMP can be tailored to improve the performance of agribusinesses in the South West and Littoral regions of Cameroon.

## 3. METHODOLOGY

The focus of this study's topic area is on how supply chain management practices affect the performance of agribusiness organizations in Cameroon. The target populations for this study are agribusiness organizations in the Southwest and Littoral regions of Cameroon. The rationale is that supply chain management practices, value creation, and performance of the agribusiness organizations do not vary within the organizations themselves, but rather vary across different organizations. The total population of agribusiness organizations in the Southwest region is 300. The total population of agribusiness organizations in the Littoral region is 255. The total population of agribusiness organizations across both the Southwest and Littoral regions is 555. In this study, the researcher made use of the purposive sampling technique. Purposive sampling is a non-probability sampling method where the researcher selects participants based on specific characteristics or criteria that align with the study's objectives. The study is focused specifically on

agribusiness organizations in the Southwest and Littoral regions of Cameroon. Purposive sampling allows the researcher to intentionally select only these organizations that fit the target population criteria. Purposive sampling enables the researcher to target this homogeneous group of agribusiness entities. Including the entire population of 555 agribusiness organizations across the two regions, the purposive sampling approach ensures the sample is fully representative of the target population. Compared to other probability-based sampling techniques, purposive sampling is more efficient and practical when the researcher has clear criteria for the target population and access to the full population data, as is the case in this study.

To specify a model for examining the effects of supply chain management practices on the performance of agribusinesses in the Southwest and Littoral regions of Cameroon, we can draw on both theoretical and empirical motivations. Supply chain management (SCM) practices are critical for enhancing organizational performance, particularly in agribusiness, where efficiency, responsiveness, and customer satisfaction are paramount. The Resource-Based View (RBV) theory posits that firms can achieve competitive advantage through the effective management of their resources and capabilities, including supply chain practices (Barney, 1991). This perspective suggests that effective supply chain practices such as Supplier Relationship Management (SRM), Customer Relationship Management (CRM), Logistics Information Systems (LIS), and Quality Information Systems (QIS) can lead to improved operational performance (OP), economic performance (ECP), strategic performance (SP), and environmental performance (EVP) in agribusinesses.

Empirical studies have shown that effective SCM practices positively influence various performance metrics in agribusiness. For instance, research indicates that CRM enhances customer satisfaction and loyalty, which in turn drives revenue growth (Kumar & Reinartz, 2016). Similarly, LIS and QIS have been linked to improved operational efficiencies and product quality, leading to better overall performance (Gunasekaran et al., 2001). Given the unique challenges faced by agribusinesses in Cameroon, such as market volatility and resource constraints, understanding the impact of these SCM practices is essential for developing strategies that enhance performance. Based on the theoretical and empirical motivations, we can specify the following regression model:

$Performance_i = \beta_0 + \beta_1 SRM_i + \beta_2 CRM_i + \beta_3 LIS_i +$
............(3.1)

Where: $Performance_i$ represents the performance metrics of agribusiness i, such as $OP_i$, $ECP_i$, $SP_i$, and $EVP_i$. $SRM_i$, $CRM_i$, $LIS_i$, and $QIS_i$ are the supply chain management practices for agribusiness i. $X_i$ is a vector of control variables for agribusiness i, which includes gender, education level, experience, and size of the agribusiness. $\beta_0$ is the intercept, and $\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$, and $\beta_5$ are the coefficients to be estimated. $\varepsilon_i$ is the error term for agribusiness i. The control variables $X_i$ can be specified as follows: Gender: Male (0 if female); Education Level: Secondary (0 if graduate), Postgraduate (0 if graduate); Experience: Categorical variables representing years of experience (Less than 1 year, 1 to 3 years, 4 to 5 years, with above 6 years as the base category); Size: A continuous variable representing the size of the agribusiness.

In this study, we apply the Robust regression technique. Robust regression is a statistical technique designed to provide reliable estimates in the presence of skewness or influential observations that can distort the results of ordinary least squares (OLS) regression. The subsequent iterations involve recalculating weights based on absolute residuals, where observations with smaller residuals receive higher weights, while those with larger residuals are down-weighted. This iterative process continues until the maximum change in weights between iterations falls below a specified tolerance level, indicating convergence of the model (Verardi & Croux, 2009).

## 4. FINDINGS AND DISCUSSIONS

Table 1 provides a comprehensive overview of the demographic characteristics of respondents from agribusinesses in the South West and Littoral regions of Cameroon. It is categorized into several key modalities: gender, age distribution, educational level, longevity in the sector, and the specific agricultural sector they are involved in. In terms of gender, the respondents are predominantly male, constituting 58.1% (294 individuals) of the total sample, while females make up 41.9% (212 individuals). This suggests a notable gender disparity in agribusiness participation in these regions, which may reflect broader societal norms and economic opportunities available to men and women in agriculture.

*Table 1: Demographic Characteristics of the Respondents*

| Characteristic | Modalities | Frequency | Percent |
|---|---|---|---|
| **Gender** | Male | 294 | 58.1 |
| | Female | 212 | 41.9 |
| **Age Distribution of Respondents** | 18-25 years | 33 | 6.5 |
| | 26-35 years | 113 | 22.3 |
| | 36-45 years | 266 | 52.6 |
| | 46-55 years | 56 | 11.1 |
| | Above 55 years | 38 | 7.5 |
| **Educational Level** | Ordinary Level | 96 | 19.0 |
| | Advance Level | 172 | 34.0 |
| | Bachelor's Degree | 213 | 42.1 |
| | Post graduate | 25 | 4.9 |
| **Longevity** | Less than 1 year | 23 | 4.5 |
| | 1-3 years | 162 | 32.0 |
| | 4-6 years | 248 | 49.0 |
| | Above 6 years | 73 | 14.4 |
| **Sector** | Crop production | 294 | 58.1 |
| | Livestock production | 136 | 26.9 |
| | Agricultural input | 76 | 15.0 |

The age distribution reveals that the majority of respondents fall within the 36-45 years bracket, accounting for 52.6% (266 individuals). This indicates a strong participation of middle-aged individuals in agribusiness, possibly due to their accumulated experience and resources. Younger respondents aged 18-25 represent only 6.5% (33 individuals), suggesting that the sector may not be attracting younger individuals

as much, which could pose challenges for the future sustainability of agribusiness in the region. The remaining age groups also reflect a moderate participation, with 22.3% (113 individuals) in the 26-35 years range, 11.1% (56 individuals) aged 46-55 years, and 7.5% (38 individuals) above 55 years.

Regarding educational level, the data shows that a significant proportion of respondents have attained a Bachelor's Degree (42.1%, 213 individuals), with 34.0% (172 individuals) holding an Advance Level qualification. This indicates a relatively well-educated workforce, which may enhance productivity and innovation within the agribusiness sector. However, only 4.9% (25 individuals) have a postgraduate degree, suggesting that advanced academic qualifications are less common among agribusiness professionals in these regions. When examining longevity in the sector, 49.0% (248 individuals) of respondents indicate they have been involved in agribusiness for 4-6 years. This relatively

high percentage points to a stable segment of the workforce with substantial experience. In contrast, those with less than one year in the sector represent only 4.5% (23 individuals), indicating a lower influx of newcomers. Respondents with 1-3 years (32.0%, 162 individuals) and above 6 years (14.4%, 73 individuals) show a balanced representation that suggests a mix of both newer and more seasoned agribusiness participants.

Lastly, the sector breakdown highlights that crop production is the most represented area, with 58.1% (294 individuals) involved in this activity, which may reflect the region's agricultural focus. Livestock production follows with 26.9% (136 individuals), while agricultural input represents 15.0% (76 individuals). This distribution underscores the importance of crop production in the local economy and suggests potential areas for growth and development in livestock and agricultural input sectors.

***Table 2:** Descriptive Statistics*

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| OP | 506 | 3.278 | .396 | 2.333 | 4.5 |
| ECP | 506 | 3.116 | .753 | 1.667 | 4.667 |
| SP | 506 | 3.688 | .511 | 2.167 | 4.667 |
| EVP | 506 | 3.031 | .615 | 1 | 5 |
| SRM | 506 | 3.833 | .49 | 2.444 | 5 |
| CRM | 506 | 3.253 | .459 | 2.1 | 4.6 |
| LIS | 506 | 3.748 | .567 | 1 | 5 |
| QIS | 506 | 3.379 | .542 | 1.4 | 5 |
| POS | 506 | 2.924 | .666 | 2 | 4 |
| Male | 506 | .581 | .494 | 0 | 1 |
| Female | 506 | .419 | .494 | 0 | 1 |
| Secondary education | 506 | .53 | .5 | 0 | 1 |
| Graduate | 506 | .421 | .494 | 0 | 1 |
| Postgraduate | 506 | .049 | .217 | 0 | 1 |
| experience less 1year | 506 | .045 | .209 | 0 | 1 |
| experience 1to3years | 506 | .32 | .467 | 0 | 1 |
| experience 4to5years | 506 | .49 | .5 | 0 | 1 |
| experience above 6years | 506 | .144 | .352 | 0 | 1 |
| Size (number of workers) | 506 | 9.397 | 5.787 | 3 | 42 |

Table 2 presents descriptive statistics for various performance metrics of agribusinesses in the South West and Littoral regions of Cameroon. The sample size for each variable is 506 observations.

The organizational performance, indicated by the mean value of 3.278, shows a moderate level of effectiveness, with a standard deviation of 0.396, suggesting some

variability among the agribusinesses. Economic performance has a mean of 3.116, with a higher standard deviation of 0.753, indicating greater diversity in economic outcomes. Social performance is slightly better, with a mean of 3.688 and a standard deviation of 0.511, suggesting relatively consistent social contributions across the sector.

Environmental performance, with a mean of 3.031, indicates a slightly lower emphasis on environmental issues, while supplier relationship management averages 3.833, reflecting a strong focus on maintaining supplier relations. Customer relationship management has a mean of 3.253, suggesting room for improvement in customer interactions. The level of information sharing averages 3.748, whereas the quality of information sharing is slightly lower at 3.379, indicating that while information is shared, its quality may vary. Postponement strategies are less emphasized, with a mean of 2.924

The sample comprises 506 observations, reflecting a balanced gender distribution with a mean of 0.581 for males and 0.419 for females, both with a standard deviation of 0.494. This indicates that while there is a predominance of male respondents, the female representation is significant, highlighting gender diversity in the sector.

In terms of educational attainment, 53 percent of respondents have completed secondary education, with a standard deviation of 0.5, suggesting a split in the population between those with secondary education and

those without. Graduate education is represented by 42.1 percent of respondents, with a standard deviation of 0.494, indicating a substantial number of individuals pursuing higher education. Postgraduate qualifications are less common, with only 4.9 percent of respondents achieving this level, accompanied by a lower standard deviation of 0.217, showing less variability among those with advanced degrees.

Experience levels reveal that 4.5 percent of respondents have less than one year of experience, with a standard deviation of 0.209, indicating a small proportion of newcomers in the field. Meanwhile, 32 percent have between one to three years of experience, with a standard deviation of 0.467, suggesting moderate variability in this group. A significant portion, 49 percent, falls within the four to five years of experience category, characterized by a standard deviation of 0.5, indicating a consistent level of experience among this subset. Lastly, 14.4 percent have more than six years of experience, with a standard deviation of 0.352, suggesting that while there are fewer individuals in this group, their experience level is relatively more consistent.

*Table 3: Pairwise correlations*

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **(1) OP** | 1.000 | | | | | | | | | | |
| **(2) SRM** | 0.035 | 1.000 | | | | | | | | | |
| **(3) CRM** | 0.019 | 0.025 | 1.000 | | | | | | | | |
| **(4) LIS** | -0.192 | 0.028 | -0.021 | 1.000 | | | | | | | |
| **(5) QIS** | 0.014 | -0.006 | 0.016 | 0.008 | 1.000 | | | | | | |
| **(6) POS** | -0.001 | -0.049 | 0.035 | 0.050 | -0.137 | 1.000 | | | | | |
| **(7) Gender** | 0.032 | -0.079 | 0.056 | -0.155 | -0.031 | -0.044 | 1.000 | | | | |
| **(8) Age** | -0.026 | -0.082 | 0.033 | 0.049 | 0.000 | 0.114 | -0.082 | 1.000 | | | |
| **(9) Education** | 0.013 | -0.045 | -0.052 | -0.074 | 0.022 | -0.076 | 0.077 | -0.099 | 1.000 | | |
| **(10) Size** | -0.069 | -0.131 | 0.002 | -0.016 | -0.004 | 0.199 | 0.039 | 0.200 | -0.050 | 1.000 | |
| **(11) Sector** | 0.091 | -0.054 | -0.011 | 0.032 | -0.069 | -0.069 | -0.042 | 0.053 | 0.070 | -0.108 | 1.000 |

Table 3 presents a pairwise correlation matrix for various variables related to organizational performance and demographic factors within the agribusiness sector in the South West and Littoral regions of Cameroon. The correlation coefficients range from -0.192 to 0.199, indicating the strength and direction of relationships among the variables. Notably, the correlation between organizational performance and supplier relationship management is low at 0.035, suggesting a weak positive relationship. Similarly, customer relationship management shows an even weaker correlation with

organizational performance at 0.019. Other variables, such as level of information sharing and quality of information sharing, exhibit negative correlations with organizational performance, particularly level of information sharing, which has a correlation of -0.192, indicating a more substantial negative association. However, the remaining correlations among the demographic variables, including gender, age, education, size, and sector, also remain low, suggesting no significant relationships that would indicate collinearity issues.

The correlations among the explanatory variables themselves are predominantly low, with the highest correlation being -0.137 between postponement and quality of information sharing, which further supports the absence of collinearity problems. For example, the correlations between size and other variables such as age (0.200) and sector (0.091) are also modest, indicating that these demographic factors do not strongly influence one another. The lack of significant correlations among the explanatory variables suggests that multicollinearity is not a concern in this analysis, allowing for a clearer interpretation of the individual effects of each variable on organizational performance.

The findings indicate that the relationships among the variables are weak, which supports the validity of the regression analysis and the reliability of the results obtained from further statistical modeling.

*Table 4: Regression Estimates of the Effects of SCMP on Performance*

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| **VARIABLES** | OP | ECP | SP | EVP |
| **SRM** | -0.00408 | -0.0327 | 0.219*** | -0.229*** |
| | (0.0225) | (0.0575) | (0.0362) | (0.0466) |
| **CRM** | 0.667*** | 1.103*** | 0.0900** | 0.719*** |
| | (0.0234) | (0.0598) | (0.0377) | (0.0485) |
| **LIS** | 0.144*** | -0.230*** | 0.546*** | 0.0576 |
| | (0.0195) | (0.0498) | (0.0314) | (0.0404) |
| **QIS** | 0.124*** | 0.0486 | -0.00377 | 0.323*** |
| | (0.0198) | (0.0506) | (0.0318) | (0.0410) |
| **POS** | -0.0180 | -0.0177 | 0.0166 | -0.0594* |
| | (0.0154) | (0.0393) | (0.0247) | (0.0318) |
| **Male (0 if female)** | -0.0380* | -0.120** | 0.0826** | -0.0387 |
| | (0.0201) | (0.0514) | (0.0324) | (0.0417) |
| **Secondary (0 if graduate)** | -0.00664 | 0.0214 | -0.0338 | -0.00126 |
| | (0.0208) | (0.0532) | (0.0335) | (0.0431) |
| **Postgraduate (0 if graduate)** | 0.0551 | 0.183 | -0.0299 | 0.0840 |
| | (0.0475) | (0.121) | (0.0763) | (0.0982) |
| **Experience (Above 6 years is base)** | | | | |
| **Less than 1year** | -0.0295 | -0.0746 | -0.125 | -0.219** |
| | (0.0538) | (0.137) | (0.0864) | (0.111) |
| **1 to 3years** | -0.0153 | 0.0562 | -0.0578 | -0.0674 |
| | (0.0317) | (0.0810) | (0.0510) | (0.0657) |
| **4 to 5years** | 0.0508* | 0.147* | -0.102** | 0.0884 |
| | (0.0304) | (0.0776) | (0.0489) | (0.0629) |
| **Size (continues)** | -0.00549*** | -0.0159*** | 0.00792*** | -0.0138*** |
| | (0.00178) | (0.00454) | (0.00286) | (0.00368) |
| **Constant** | 0.295** | 0.515* | 0.463** | 0.574** |
| | (0.121) | (0.310) | (0.195) | (0.251) |
| **Observations** | 506 | 506 | 506 | 506 |
| **Rank** | 13 | 13 | 13 | 13 |
| **R2 adjusted** | 0.709 | 0.486 | 0.530 | 0.458 |
| **F** | 103.6*** | 40.83*** | 48.43*** | 36.53*** |

*Standard errors in parentheses | \*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

Table 4 presents the regression estimates of the effects of supply chain management practices on various performance metrics of agribusinesses in the South West and Littoral regions of Cameroon, including organizational performance, economic performance, social performance, and environmental performance. The results are based on a sample of 506 observations, and the models exhibit varying degrees of explanatory power, as indicated by the adjusted R-squared values ranging from 0.458 to 0.709. The F-statistics for all

models are significant, suggesting that the overall models are statistically robust.

Starting with supplier relationship management, the coefficient for organizational performance in agribusinesses in the South West and Littoral regions of Cameroon is -0.00408, indicating a negligible negative impact that is not statistically significant. In contrast, its effect on social performance is positive at 0.219, which is statistically significant at the 1 percent level, suggesting that better supplier relationships enhance social performance. However, the negative coefficient of -0.229 for environmental performance indicates that stronger supplier relationships may be associated with lower environmental performance, highlighting a potential trade-off.

Customer relationship management shows a consistently strong positive effect across all performance metrics, with coefficients of 0.667 for organizational performance and 1.103 for economic performance, both significant at the 1 percent level. This suggests that effective customer management is crucial for improving overall performance of agribusinesses in the South West and Littoral regions of Cameroon.

The level of information sharing also demonstrates significant positive effects, particularly for organizational performance (0.144) and social performance (0.546), both at the 1 percent significance level, indicating that enhanced information sharing can substantially improve these outcomes for agribusinesses in the South West and Littoral regions. However, the negative coefficient for economic performance (-0.230) suggests that while information sharing may benefit certain areas, it could detract from economic performance of agribusinesses in the South West and Littoral regions of Cameroon.

Quality of information sharing has a positive effect on organizational performance of agribusinesses in the South West and Littoral regions of Cameroon (0.124) and environmental performance of agribusinesses in the South West and Littoral regions of Cameroon (0.323), indicating its relevance in these contexts, while showing a negligible impact on social performance of agribusinesses in the South West and Littoral regions of Cameroon.

Regarding demographic variables, being male is associated with a significant negative impact on organizational performance (-0.038) and economic performance (-0.120) of agribusinesses in the South West and Littoral regions of Cameroon, while positively influencing social performance (0.0826) at the 5 percent significance level.

Experience levels exhibit mixed results, with respondents having less than one year of experience showing a negative effect on environmental performance (-0.219) that is significant at the 5 percent level. In contrast, individuals with four to five years of experience positively influence organizational performance (0.0508) at the 10 percent level.

Finally, the size of the agribusiness firms in the South West and Littoral regions consistently shows negative effects across all performance metrics of agribusinesses in the South West and Littoral regions of Cameroon, with coefficients ranging from -0.00549 to -0.0159, all significant at the 1 percent level.

This indicates that larger firm size may be associated with reduced performance of agribusinesses in the South West and Littoral regions of Cameroon, which could reflect inefficiencies or challenges that larger organizations face.

*Table 5: Comparative Assessment for the Effects of SCMP on Performance*

|  | (Crop Production) | (Livestock Production) | (Agricultural Inputs) |
|---|---|---|---|
| **VARIABLES** | OP | OP | OP |
| **SRM** | -0.0120 | -0.000825 | 0.0407 |
|  | (0.0336) | (0.0358) | (0.0621) |
| **CRM** | 0.596*** | 0.695*** | 0.692*** |
|  | (0.0337) | (0.0413) | (0.0684) |
| **LIS** | 0.101*** | 0.186*** | 0.147*** |
|  | (0.0308) | (0.0294) | (0.0516) |
| **QIS** | 0.143*** | 0.101*** | 0.139** |
|  | (0.0308) | (0.0313) | (0.0528) |
| **POS** | -0.0302 | -0.0220 | 0.0443 |
|  | (0.0241) | (0.0238) | (0.0441) |

| | | | |
|---|---|---|---|
| **Male (0 if female)** | -0.000704 | -0.0481 | -0.0523 |
| | (0.0291) | (0.0345) | (0.0580) |
| **Secondary (0 if graduate)** | 0.0290 | -0.0541 | 0.0195 |
| | (0.0307) | (0.0343) | (0.0608) |
| **Postgraduate (0 if graduate)** | 0.0930 | -0.0969 | 0.362*** |
| | (0.0745) | (0.0867) | (0.118) |
| **Experience (above 6 years is base)** | | | |
| **1 to 3years** | 0.148** | 0.0946* | -0.0653 |
| | (0.0670) | (0.0517) | (0.0913) |
| **4 to 5years** | 0.226*** | 0.157*** | 0.0378 |
| | (0.0650) | (0.0469) | (0.0817) |
| **Less than 1 year** | 0.236*** | 0.182* | 0.303* |
| | (0.0739) | (0.105) | (0.180) |
| **Size** | -0.00924*** | 0.00546 | 0.00261 |
| | (0.00236) | (0.00400) | (0.00709) |
| **Constant** | 0.488** | -0.0116 | -0.253 |
| | (0.195) | (0.185) | (0.345) |
| **Observations** | 294 | 136 | 76 |
| **Rank** | 13 | 13 | 13 |
| **R2 adjusted** | 0.619 | 0.809 | 0.719 |
| **F** | 40.72*** | 48.73*** | 16.97*** |

Standard errors in parentheses | *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5 provides a comparative assessment of the effects of supply chain management practices on the performance of agribusinesses in the South West and Littoral regions of Cameroon across three sectors: crop production, livestock production, and agricultural inputs. The results are based on differing sample sizes, with 294 observations for crop production, 136 for livestock production, and 76 for agricultural inputs. The models demonstrate varying levels of explanatory power, as indicated by the adjusted R-squared values of 0.619 for crop production, 0.809 for livestock production, and 0.719 for agricultural inputs. The significant F-statistics for all models indicate that the overall regression models are statistically robust.

In terms of supplier relationship management, the coefficients are relatively low across all three sectors, with the crop production sector showing a coefficient of -0.0120, livestock production at -0.000825, and agricultural inputs at 0.0407. None of these coefficients are statistically significant, suggesting that supplier relationship management may not have a meaningful impact on the performance of agribusinesses in these sectors. Conversely, customer relationship management exhibits strong positive effects across all sectors, with coefficients of 0.596 for crop production, 0.695 for livestock production, and 0.692 for agricultural inputs, all significant at the 1 percent level. This underscores the

crucial role that effective customer management plays in enhancing the performance of agribusinesses in the South West and Littoral regions of Cameroon.

The levels of information sharing also show significant positive relationships with the performance of agribusinesses, particularly in crop production (0.101) and livestock production (0.186), both at the 1 percent significance level. In the agricultural inputs sector, the effect is also positive at 0.147 and significant at the 1 percent level, indicating that enhanced information sharing is beneficial for performance across all three sectors. Quality of information sharing further supports these findings, with coefficients of 0.143 for crop production, 0.101 for livestock production, and 0.139 for agricultural inputs, suggesting that higher quality information sharing consistently correlates with improved performance.

Demographic factors yield mixed results across the sectors. The male variable shows negligible effects, with coefficients close to zero and not statistically significant across all sectors. Educational attainment impacts the performance of agribusinesses differently, with postgraduate qualifications significantly enhancing performance in the agricultural inputs sector (0.362) at the 1 percent level, while the other educational categories do not show significant effects. Experience

also plays a notable role; those with less than one year of experience in crop production show a strong positive impact (0.236), while individuals with one to three years of experience positively influence livestock performance (0.0946) at the 10 percent level. The coefficients for larger firms indicate a negative relationship with performance in crop production (-0.00924), suggesting that larger size may be associated with reduced performance efficiency in that sector, while having negligible effects in livestock and agricultural inputs.

The findings from the analysis of supply chain management practices on the performance metrics of agribusinesses in the South West and Littoral regions of Cameroon reveal several critical insights. Firstly, supplier relationship management (SRM) exhibited a negligible negative impact on organizational performance while positively influencing social performance. This aligns with the work of Zefack et al. (2024), who noted that strong supplier relationships can enhance social outcomes but may not directly translate to organizational efficiency due to potential trade-offs in resource allocation. Similarly, studies by Kauffman and Vahdat (2023) emphasize the importance of balancing supplier relationships with operational efficiency. The negative impact on environmental performance suggests that while fostering supplier relationships, agribusinesses may inadvertently neglect environmental sustainability, echoing concerns highlighted by Nwankwo et al. (2023) and the need for integrated supply chain practices that consider ecological impacts.

Customer relationship management (CRM) demonstrated a consistently strong positive effect across all performance metrics, particularly in organizational and economic performance. This finding is consistent with research by Wamba et al. (2024), which emphasizes the importance of effective customer engagement in driving performance improvements. Additionally, Zhao and Wang (2023) found that CRM strategies significantly enhance customer loyalty and profitability in agricultural sectors. The significant coefficients for CRM underscore its role as a critical lever for enhancing overall performance, reinforcing the notion that customer-centric strategies are vital for success in competitive markets, as also highlighted by Smith and Jones (2022) in their analysis of agribusiness competitiveness.

Information sharing also emerged as a significant factor, particularly in enhancing organizational and social performance. Positive effects observed in crop production and livestock sectors align with findings by Lee and Park (2023), who suggest that effective information sharing can lead to improved decision-making and operational efficiencies. However, the negative impact on economic performance raises questions about the cost-benefit balance of information-sharing initiatives, suggesting that while they may enhance certain performance metrics, they could also impose financial burdens, a concern raised by Thomas et al. (2023). Quality of information sharing showed positive effects on organizational and environmental performance, indicating its relevance in fostering sustainable practices within agribusinesses, as noted by Garcia and Lopez (2024).

Demographic factors, particularly gender and experience, revealed mixed results. The negative impact of being male on organizational and economic performance contrasts with the positive influence on social performance, suggesting that gender dynamics may play a complex role in agribusiness outcomes. This complexity is echoed in the work of Mtisi et al. (2024), which discusses how gender can influence performance metrics in agricultural contexts. Furthermore, research by Chikoko and Adebayo (2023) indicates that gender disparities can affect access to resources and decision-making processes in agribusiness. Experience levels also showed varied effects, with less experienced individuals positively impacting crop production, indicating that fresh perspectives may drive innovation and performance in certain contexts, a finding supported by the work of Bello and Ojo (2023) on the role of youth in agricultural development.

## 5. CONCLUSION AND POLICY RECOMMENDATIONS

The findings of this analysis emphasize the critical role of supply chain management practices in shaping the performance metrics of agribusinesses in the South West and Littoral regions of Cameroon. While customer relationship management and information sharing emerged as pivotal components for enhancing performance, the nuanced impacts of supplier relationships and demographic factors underscore the complexities inherent in agribusiness operations. The negative implications of supplier relationship management on environmental performance highlight the need for a balanced approach that integrates social, economic, and environmental objectives. As the agribusiness landscape continues to evolve, these findings suggest that businesses must adopt

comprehensive strategies that prioritize effective customer engagement and high-quality information sharing while being mindful of the potential trade-offs associated with supplier relationships.

To enhance the performance of agribusinesses in the South West and Littoral regions of Cameroon, it is recommended that businesses prioritize customer relationship management strategies to capitalize on their positive impacts on performance. Additionally, improving information-sharing practices is essential, focusing on quality to optimize decision-making and operational efficiency. Agribusinesses should also strive to balance supplier relationships with environmental sustainability goals, ensuring that social and ecological considerations are integrated alongside economic objectives. Finally, implementing training programs that address gender dynamics and leverage the innovative potential of less experienced individuals can further drive performance improvements, fostering a more inclusive and effective agribusiness environment.

## REFERENCES

[1] Accenture. (2023). The impact of supply chain strategies on customer satisfaction.

[2] AfDB. (2021). African Development Bank report on rural infrastructure.

[3] Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

[4] Bello, A., & Ojo, J. (2023). The role of youth in agricultural development. Journal of Agricultural Innovation, 15(2), 123-135.

[5] Chikoko, V., & Adebayo, A. (2023). Gender disparities in access to resources and decision-making processes in agribusiness. African Journal of Agricultural Research, 18(4), 456-467.

[6] Cox, A., & Lummus, R. R. (2003). The role of supply chain management in enhancing organizational performance. Journal of Supply Chain Management, 39(2), 1-12.

[7] CSCMP. (2021). Supply chain management practices and their impact on organizational performance.

[8] Deloitte. (2022). Supply chain resilience: Strategies for managing disruptions.

[9] FAO. (2022). Climate change and its impact on agricultural yields.

[10] Garcia, M., & Lopez, R. (2024). Quality of information sharing and its impact on sustainable practices in agribusiness. Sustainability in Agriculture, 12(1), 78-89.

[11] Gartner. (2023). Lean manufacturing techniques and their effects on operational efficiency.

[12] Gharakhani, D., Mavi, R. K., & Hamidi, N. (2012). Impact of supply chain management practices on innovation and organizational performance in Iranian companies. African Journal of Business Management, 6(19), 5939-5946.

[13] Gunasekaran, A., Patel, C., & Tirtiroglu, E. (2001). Performance measures and metrics in a supply chain environment. International Journal of Production Economics, 87(3), 333-347.

[14] Hussain, M., & Qamari, A. (2018). The influence of supply chain management on organizational performance: A review of literature. International Journal of Business and Management, 13(4), 1-10.

[15] IFAD. (2019). Rural finance and agriculture in Cameroon.

[16] Kauffman, R., & Vahdat, S. (2023). Balancing supplier relationships with operational efficiency. International Journal of Supply Chain Management, 11(3), 234-245.

[17] Kumar, A., et al. (2022). Sustainable supply chain management and its impact on organizational performance. Sustainability, 14(3), 1234-1250.

[18] Kumar, V., & Reinartz, W. (2016). Creating enduring customer value. Harvard Business Review Press.

[19] Kyeremeh, E., & Dza, A. (2018). Value creation through supply chain management practices in Ghanaian manufacturing firms. International Journal of Supply Chain Management, 7(5), 418-427.

[20] Lee, J., & Park, S. (2023). The impact of effective information sharing on decision-making and operational efficiencies in agriculture. Journal of Agricultural Economics, 45(2), 201-215.

[21] Martina, M., et al. (2023). The role of information technology in enhancing supply chain management practices in SMEs. Journal of Small Business Management, 61(1), 45-67.

[22] McKinsey. (2022). The financial impact of mature supply chain capabilities.

[23] Mtisi, S., et al. (2024). Gender dynamics and performance metrics in agricultural contexts. Journal of Gender Studies in Agriculture, 10(1), 50-65.

[24] Muhammad, A., & Qamari, A. (2021). Customer loyalty and supply chain management: A review of the literature. Journal of Business Research, 124, 123-134.

[25] Nwankwo, C., et al. (2023). Integrated supply chain practices and ecological impacts in agribusiness. Environmental Sustainability, 9(2), 112-125.

[26] Ososanmi, O., et al. (2022). Adapting supply chain management to global challenges. Supply Chain Management Review, 26(3), 34-45.

[27] Sagawa, T., & Nagano, M. (2015). The importance of information quality in supply chain management. International Journal of Production Economics, 170, 1-10.

[28] Smith, J., & Jones, L. (2022). Agribusiness competitiveness: The role of customer-centric strategies. Journal of Business Strategy, 34(4), 300-315.

[29] Thomas, R., et al. (2023). Cost-benefit analysis of information-sharing initiatives in agribusiness. Agricultural Economics Review, 29(3), 145-158.

[30] Tzokas, N., et al. (2015). The interplay between absorptive capacity, technological capability, and customer relationship capabilities in the semiconductor industry. Journal of Business Research, 68(6), 1234-1242.

[31] Verardi, V., & Croux, C. (2009). Robust regression in Stata. Stata Journal, 9(3), 439-453.

[32] Wamba, S. F., et al. (2024). Effective customer engagement and performance improvements in agribusiness. Journal of Marketing Research, 61(1), 88-102.

[33] World Bank. (2022). Agriculture and rural development in Cameroon.

[34] Xia, Y., & Zhang, Y. (2007). The impact of information systems on supply chain management. International Journal of Production Economics, 107(2), 308-318.

[35] Zefack, M., et al. (2024). Supplier relationships and their impact on social outcomes in agribusiness. International Journal of Agribusiness Management, 22(1), 67-79.

[36] Zhao, X., & Wang, Y. (2023). CRM strategies and their effects on customer loyalty and profitability in agriculture. Journal of Agricultural Marketing, 19(2), 99-110.

[37] Zhou, H., & Benton, W. C. (2007). Supply chain management: A review of the literature. Journal of Operations Management, 25(2), 1-20.