

# The Effect of Innovation on Competitiveness in the Food Processing Industry of Cameroon: A Mediating Effect of Quality Management

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## Abstract

With the intensification of national and global competition, the focus of companies is now on how to achieve competitive advantage. With globalisation, Cameroon's industry is facing specific difficulties such as unchecked competition from imports, internal weaknesses in output, low technology acquisition as well as poor links between industry and the institutional sector, making competition a problem for them. This led to the foundation of studies on innovation and competitiveness, but at this point, there are still inconclusive results. This paper focuses on examining the effect of innovation on competitiveness in the food processing industry of Cameroon, with a specific emphasis on the mediating effect of quality management. This study adopted the cross-sectional research design for its investigation. The primary source of data was used for this study, as it was current. This primary data was collected through the distribution of questionnaires to the respondents. Innovation in this study was captured in terms product, process, market, and organisational innovations. Quality management on the other hand was captured in terms of commitment to quality, employee involvement, customer focus, process monitoring,

incentives, and recognition. In relation to competitiveness, the study focused on productivity, output growth, and market share. Data was collected from 335 managers of food processing companies drawn randomly after stratification from a population of 2564 food processing companies operating in Cameroon. This includes Douala, Yaounde, Ngaoundere, Buea, Bafoussam, Maroua, and Bertoua with 201, 40, 34, 3, 30, 17, and 10 as corresponding sample proportions respectively. Inferential statistics was used during the analysis of the data, specifically using Baron and Kenny's approach of testing the mediation hypothesis. Based on the results, there were traces of positive and significant direct effects of product, process, and organisational innovations on competitiveness. On the other hand, market innovation was insignificant. In terms of the indirect effect, the study revealed a partial mediation of quality management in the effect of product innovation on competitiveness. Quality management, however, had no mediating role on other dimensions of innovation (process, market, and organisational) and competitiveness.

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**Keywords:** Innovation, Quality Management, Competitiveness

## 1. Introduction

In today's world, globalisation has led to the magnification of competition in the business field. For companies and businesses to gain a competitive edge, they have to advance new products and strategies to attract new customers and satisfy existing ones as well as processes of production. With this in mind, businesses, companies, and industries have been in a continuous search for better ways of suitably facing the intense competition. According to Oleksandr and Kumanova (2021), innovative activities are a means of increasing the competitiveness of enterprises. Some of the ways of standing to competition devised by many businesses include solving customer's pain points, selecting a niche in the market, pricing, and changing business ideas. The trending strategy implemented by countless businesses around the world to increase competition is the adoption of innovation. Porter (1996) stressed the fact that a firm is able to compete effectively if it generates a specific and durable differentiating factor, and innovation is one of the key ways through which firms can create the differentiating factor. Innovation is widely acknowledged as a core factor in increased productivity and competitiveness. According to OECD (2005), innovation can be divided into four groups: product innovation, process innovation, organisational innovation, and marketing innovation.

Recently, there is still a great deal of focus on innovation as a means of improving firms' competitiveness. According to Efendi et al. (2020), the rapid technological change along with increasingly uncertain business and market globalisation that occurred in the last decade has had a great impact on

the competitive business environment. Innovation systems have been adopted differently by country, region, local, and in different sectors and technologies. According to Hendayana et al. (2019), innovation can be interpreted as a new discovery that is different from what already exists or that has been known before. Innovation is needed in a business because it can provide competitiveness for the company. Khyareh and Rostami (2021) in their investigation certified that the main concern of policy makers in developed and developing countries today is national competitiveness and how competitiveness can be improved.

It was observed that in the food processing industry of Cameroon, the signals with regards to competition could not be hidden. The study was motivated by the observation that the arrival of companies, such as Dolait and Royal Crown in Cameroon's food industry, made it quite competitive for the Cameroonian dairy company, Camlait, which in response decided to diversify its line of products, thus introducing soya-based products. However, this competition is something that Camlait was not use to in the industry. To this end, the firm invested 3 billion FCFA to set up a dedicated production line. Demand growth for yoghurt is so significant (25% per year) that rivals end up installing themselves in the long term (Business in Cameroon, 2022).

By reviewing trending literature on innovation and competitiveness, it was observed that a majority of the few studies on this topic were conducted in the developed world (Hendayana et al., 2019; Efrata et al., 2019; Syoum et al., 2019; Heira et al., 2020; Oleksandr & Kumanova, 2021; Shilei et al., 2020; Mohsen & Nasrin, 2021). Unfortunately, only a few existed in the case of the African continent (Kiveu et al., 2019; Kiveu & Muathe, 2019). A worst case scenario is that none of these studies was conducted in the Cameroon context. This gives room to a contextual gap (context of the study or geographical gap). In addition, most authors have explored the impact of competitiveness on innovation rather than investigating the effect of innovation on competitiveness (OECD, 2023). Hence, this has left an unexploited knowledge gap. Finally, none of the studies considered using a mediating variable to test the effect of innovation on competitiveness, which equally leaves a theoretical gap to be filled. It was equally observed that there are empirical studies linking quality management to competitiveness of firms (Mauro, Gheith & Tani, 2020; Sánchez, Fermín & Luz, 2021), which initiates the thought of indirect relationship.

In this light, this study has as its main focus to investigate if innovation has a significant effect on competitiveness in the Food Processing Industry of Cameroon. It also highlights if quality management may perhaps be a mediator in this relationship.

## **Theoretical Debate**

In 1962, Everett Rogers introduced his Innovation Diffusion Theory (IDT) which has been referenced often in case analysis since. It provides a groundwork for understanding innovation adoption as well as the factors that influence an individual's choices about an innovation. Also, Joseph Schumpeter in the year 1911 put forward the theory of Innovation and Entrepreneurship. According to this theory, innovations lead to economic growth and the entrepreneur is the one who innovates. To continue with, the resource based-view was originally put forward by Penrose (1959), but it was developed by others (Wernerfelt, 1984; Barney, 1991; Teece et al., 1997). The theory argues that firms own resources that they can be employ to become competitive. The theory posits that a firm can gain competitive advantage by owning distinctive resources or capabilities that are valuable, difficult to imitate, and are rare in the marketplace.

To crown it, the Dynamic capability theory was advanced by Teece and Pisano (1994) and explains how firms achieve and sustain competitiveness based on the processes that take place in a firm to match the dynamic and volatile environment. The emergence of this theory was necessitated by the shortcoming/deficiencies or limitations of the resource-based theory in addressing dynamic economies. The Dynamic capability paradigm embraces entrepreneurship, innovation, organisational learning, and knowledge and change management. The ability of a firm to adjust to changes in the market through innovation is crucial for the competitiveness of firms. It is argued that innovation, which is the fundamental impulse that drives capitalism, stems from the innovation of new products, new methods of production, new markets, and new forms of industrial organisation.

The theoretical debate here lies on the knowledge gap because a good number of studies focused and claim a relationship in which competitiveness affects innovation. However, some of the studies proved that innovation has a positive effect on competitiveness (OECD, 2023). As backed by the above mentioned theories, this study takes a stand and tries to clarify the role of innovation on competitiveness while considering quality management as intervening.

## **2. Methods**

This paper adopted a cross-sectional survey research design. This research design was selected for this study as it helps to gather data from a cross section of many food processing companies in the food processing industry of Cameroon in a single time interval in 2023. This study adopted only the primary source of data because it was current and collected in the form required by the researcher. Consequently, this data was collected through

self-administration questionnaires to managers of food processing companies in Cameroon as they were at the right position to give the information required. A sample of 335 managers of food processing companies was drawn from a total of 2564 through a simple random sampling technique using the sample size determination table by Krejcie and Morgan (1970). Before using the random sampling technique, the study used the stratified sampling technique that permitted the further sub-division of the population into seven (7) sub-groups known as strata. This stratification was based on location as the criteria for grouping. This comprises of Douala, Yaounde, Ngaoundere, Buea, Bafoussam, Maroua, and Bertoua with 1538, 308, 256, 25, 231, 128 and 78 as corresponding figures. Based on these groups, the proportion of each of the stratum was calculated to determine the number of companies randomly selected from each stratum. It was stated that Douala, Yaounde, Ngaoundere, Buea, Bafoussam, Maroua, and Bertoua were to have corresponding proportions of 201, 40, 34, 3, 30, 17 and 10 respectively. Based on this, random sampling was applied to each stratum to select the proportions as enumerated based on the calculations. Data for the study was analysed inferentially with focus on the Baron and Kenny (1986) framework for testing mediation. To enhance the robustness of Baron and Kenny's approach, the mediation analysis employed the Hayes (2023) Process Macro Version 4.3, which was extended in SPSS.

### Estimation Technique

A series of linear regression analysis were conducted in order to ascertain the relations amongst the three variables of this study as summarized by each of the equations.

Firstly, the effect of innovation on competitiveness in the food processing industry of Cameroon was tested for a significant effect. Multiple regression model was used during the estimation as it permitted the inclusion of multiple independent variables on the dependent variable as illustrated by Equation 2. Where Y is competitiveness and innovation was captured using product, process, market, and organizational innovations as denoted by X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub> respectively.

$$Y = f(X_1, X_2, X_3 \text{ \& } X_4) \dots \dots \dots (1)$$

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i \dots \dots \dots (2)$$

Secondly, the effect of innovation on quality management in the food processing industry of Cameroon was tested for a significant effect using a multiple regression model as illustrated by Equation 4. Where M is quality management expressed as a function of innovation (X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub> and X<sub>4</sub>).

$$M = f(X_1, X_2, X_3 \text{ \& } X_4) \dots \dots \dots (3)$$

$$M_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i \dots \dots \dots (4)$$

Thirdly, the effect of quality management on competitiveness in the food processing industry of Cameroon was tested for a significant effect using the univariate linear regression model for estimation as illustrated by Equation 6. Where Y is competitiveness expressed as a function of quality management (M).

$$Y = f(M) \dots \dots \dots (5)$$

$$Y_i = \beta_0 + \beta_1 M_i + \mu_i \dots \dots \dots (6)$$

Finally, the indirect effect (mediation) for this study was tested using Baron and Kenny’s approach of mediation as they proposed a framework for testing mediational hypotheses through a four-stage approach as captured by Equations 7, 8, and 9 (Baron & Kenny, 1986). This was achieved by incorporating the Hayes Process Macro Version 4.3 for mediation analysis into SPSS, as suggested by Hayes (2023).

$$Y = \beta_0 + \beta_1 X + \mu \dots \dots \dots (7)$$

$$M = \beta_0 + \beta_2 X + \mu \dots \dots \dots (8)$$

$$Y = \beta_0 + \beta_3 X + \beta_4 M + \mu \dots \dots \dots (9)$$

According to Baron and Kenny’s framework, in the preceding equation, if:

- $b_3 < b_1$ , nevertheless remains significant, then the mediation of M in the relationship between X and Y is partial.

- $b_3$  comes to be insignificant or null; then, there exist total or full mediation of the variable M in the relationship between X and M.

Based on this model, the indirect influence of the explaining variable X on the dependent variable Y, through the mediator M is illuminated or explained by the product of the coefficients ( $b_2 * b_4$ ). In this light, the direct effect is represented by the coefficient  $b_3$ .

The results obtained from the test of mediation using Baron and Kenny’s approach of mediation was confirmed using the bootstrap test of indirect effects. Thus, this helps to overcome the limitations of the approach of Baron and Kenny (1986) through the use of confidence intervals to bypass the problems of statistical power.

### 3. Results

The results of this study are presented in terms of the direct effect between innovation and quality management as well as the indirect effect through the mediation of quality management. Innovation was captured in terms product, process, market, and organisational innovations. In terms of quality management, a composite index of commitment to quality, employee involvement, customer focus, process monitoring, incentives, and recognition was done. In the same light, a composite index of productivity, output growth, and market share was done for competitiveness.

### 3.1 The Effect of Innovation on Competitiveness

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i \dots \dots \dots (2)$$

**Table 1.** Effect of Innovation on Competitiveness

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	16.097*	1.134		14.192	0.000
Product Innovation	0.150*	0.051	0.158	2.953	0.003
Process Innovation	0.366*	0.074	0.264	4.972	0.000
Market Innovation	0.016	0.083	0.010	0.194	0.847
Organisational Innovation	0.186**	0.073	0.137	2.558	0.011

(\*)Significant at 1% and (\*\*)Significant at 5% Level of Significance

a. Dependent Variable: Competitiveness (Y)

b. Predictors: (Constant), Product Innovation (X<sub>1</sub>), Process Innovation (X<sub>1</sub>), Market Innovation (X<sub>1</sub>) and Organisational Innovation (X<sub>1</sub>)

Based on the results presented in Table 1, the coefficients of the variables (product = 0.150, process = 0.366, market = 0.016 and organisation innovation = 0.186) are positive implying a positive effect on competitiveness. Both product and process innovations are significant at 1% level of significance, organisational innovation is significant at 5% level of significance, while market innovation is insignificant (p>0.05). This practically implies that companies in the food processing industry of Cameroon could innovate in terms of product, process, as well as organisation in order to achieve a potential to compete with other companies in the industry.

### 3.2 The Effect of Innovation on Quality Management

$$M_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \mu_i \dots \dots \dots (4)$$

**Table 2.** Effect of Innovation on Quality Management

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	12.583*	1.118		11.252	.000
Product Innovation	.131*	.050	.149	2.610	.009
Process Innovation	.045	.073	.035	.616	.539
Market Innovation	.097	.082	.067	1.190	.235
Organisational Innovation	-.065	.072	-.052	-.907	.365

(\*)Significant at 1%

a. Dependent Variable: Quality Management (M)

b. Predictors: (Constant), Product Innovation (X<sub>1</sub>), Process Innovation (X<sub>2</sub>), Market Innovation (X<sub>3</sub>) and Organisational Innovation (X<sub>4</sub>)

In line with the results presented in Table 2, the coefficients of the variables (product = 0.131, process = 0.045 and market = 0.097) are positive implying a positive effect on quality management except organisational innovation (-0.065). Only product innovation is significant at a 1% level of significance while process, market, and organisational innovations are insignificant ( $p > 0.06$ ). Focusing on enhancing both effectiveness and efficiency in quality management, companies in Cameroon's food processing industry could turn to innovation as a key strategy for their product development.

### 3.3 The Effect of Quality Management on Competitiveness

$$Y_i = \beta_0 + \beta_1 M_i + \mu_i \dots \dots \dots (6)$$

**Table 3.** Effect of Quality Management on Competitiveness

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	19.170*	.834		22.993	.000
Quality Management	.274*	.058	.252	4.757	.000

(\*)Significant at 1%

a. Dependent Variable: Competitiveness (Y)

b. Predictors: (Constant), Quality Management (M)

According to the results presented in Table 3, the coefficient of quality management (0.274) is positive, which implies a positive effect on competitiveness. Quality management has a significant effect on competitiveness at a 1% level of significance ( $p > 0.01$ ). These results practically demonstrate that companies in the food processing industry of Cameroon could be more competitive if they are focused on managing their quality of which innovation could extend a helping hand.

### 3.4 The Mediating Effect of Quality Management in Innovation and Competitiveness

**Table 4.** The Mediating Effect of Quality Management in Product Innovation and Competitiveness

	R <sup>2</sup>	F	B	SE	T	P
Effect of product innovation on competitiveness (Total effect) ( <b>b<sub>1</sub></b> )	0.0568	20.0455	0.1949	0.0502	3.8843	0.0001
Effect of product innovation on quality management ( <b>b<sub>2</sub></b> )	0.0238	8.1345	0.1355	0.0475	2.8521	0.0046
Effect of product innovation on competitiveness when quality management is	0.1043	19.3373	0.1949	0.0502	3.8843	0.0001



controlled (Direct effect) (b <sub>3</sub> )						
Effect of quality management on performance when product innovation is controlled (b <sub>4</sub> )	0.1043	19.3373	0.2401	0.0572	4.1986	0.0000
<b>Test Of Significance Of Indirect Effect</b>						
<b>Bootstrap Test</b>						
<b>Effect</b>	<b>SE.</b>	<b>LL95CI</b>		<b>UL95CI</b>		
0.0325	0.0112	0.0118		0.0561		

The results presented in Table 4 show that product innovation positively and significantly affect competitiveness ( $b_1=0.1949$ ;  $p<1\%$ ). Also, a positive and significant effect could be established between product innovation and quality management ( $b_2=0.1355$ ;  $p<1\%$ ). Also, the effect of product innovation on competitiveness controlled by quality management is positive and significant ( $b_3=0.1949$ ;  $p>1\%$ ). Furthermore, the effect of quality management on competitiveness controlled by product innovation is positive and significant as well ( $b_4=0.2401$ ;  $p<1\%$ ). These results were confirmed by a bootstrap test with a confidence interval of 5% with no zero found in the interval [0.0118; 0.0561]. Consequently, quality management has a mediating effect in the link between product innovation and competitiveness. This mediation is a partial mediation since the effect did not turn to a null ( $b_3$ ). Thus, there seems to be a direct effect of product innovation on competitiveness.

**Table 5.** The Mediating Effect of Quality Management in Process Innovation and Competitiveness

	<b>R<sup>2</sup></b>	<b>F</b>	<b>B</b>	<b>SE</b>	<b>T</b>	<b>P</b>
Effect of process innovation on competitiveness (Total effect) (b <sub>1</sub> )	0.1059	39.4375	0.4515	0.0719	6.2799	0.0000
Effect of process innovation on quality management (b <sub>2</sub> )	0.0034	1.1246	0.0740	0.0698	1.0605	0.2897
Effect of process innovation on competitiveness when quality management is controlled (Direct effect) (b <sub>3</sub> )	0.1605	31.7459	0.4327	0.0699	6.1908	0.0000
Effect of quality management on performance when process innovation is controlled (b <sub>4</sub> )	0.1605	31.7459	0.2547	0.0548	4.6490	0.0000
<b>Test Of Significance Of Indirect Effect</b>						

<b>Bootstrap Test</b>			
<b>Effect</b>	<b>SE.</b>	<b>LL95CI</b>	<b>UL95CI</b>
0.0188	0.0156	-0.0093	0.0523

The results presented in Table 5 show that process innovation positively and significantly affect competitiveness ( $b_1=0.4515$ ;  $p<1\%$ ). Also, there is a positive but insignificant effect between process innovation and quality management ( $b_2=0.0740$ ;  $p>5\%$ ) and the effect of process innovation on competitiveness controlled by quality management is positive and significant ( $b_3=0.4327$ ;  $p>1\%$ ). Furthermore, the effect of quality management on competitiveness controlled by process innovation is positive and significant ( $b_4=0.2547$ ;  $p<1\%$ ). The results indicate the absence of mediation as confirmed by a bootstrap test with a confidence interval of 5% because there is zero found in the interval  $[-0.0093; 0.0523]$ . Consequently, quality management has no mediating effect on the relationship between process innovation and competitiveness. However, there exists a direct relationship between process innovation and competitiveness ( $b_3=0.4327$ ;  $p>1\%$ ).

**Table 6.** The Mediating Effect of Quality Management in Market Innovation and Competitiveness

	<b>R<sup>2</sup></b>	<b>F</b>	<b>B</b>	<b>SE</b>	<b>T</b>	<b>P</b>
Effect of market innovation on competitiveness (Total effect) ( <b>b<sub>1</sub></b> )	0.0105	3.5300	0.1628	0.0867	1.8788	0.0611
Effect of market innovation on quality management ( <b>b<sub>2</sub></b> )	0.0094	3.1565	0.0740	0.0698	1.7766	0.0765
Effect of market innovation on competitiveness when quality management is controlled (Direct effect) ( <b>b<sub>3</sub></b> )	0.0698	12.4506	0.1251	0.0845	1.4800	0.1398
Effect of quality management on performance when market innovation is controlled ( <b>b<sub>4</sub></b> )	0.0698	12.4506	0.2661	0.0579	4.5997	0.0000
<b>Test Of Significance Of Indirect Effect</b>						
<b>Bootstrap Test</b>						
<b>Effect</b>	<b>SE.</b>	<b>LL95CI</b>	<b>UL95CI</b>			
0.0377	0.0224	-0.0049	0.0832			

With regards to Table 6, the results depict that market innovation positively but insignificantly affect competitiveness ( $b_1=0.1628$ ;  $p>5\%$ ). Also,

a positive but insignificant effect between market innovation and quality management was depicted ( $b_2=0.0740$ ;  $p>1\%$ ). The effect of market innovation on competitiveness controlled by quality management is positive and insignificant ( $b_3=0.1251$ ;  $p>5\%$ ). Consequently, quality management has no mediating effect in the relationship between market innovation and competitiveness. Thus, there is no direct relationship between market innovation and competitiveness ( $b_3=0.1251$ ;  $p>5\%$ ).

**Table 7.** The Mediating Effect of Quality Management on Organisational Innovation and Competitiveness

	<b>R<sup>2</sup></b>	<b>F</b>	<b>B</b>	<b>SE</b>	<b>T</b>	<b>P</b>
Effect of organisational innovation on competitiveness (Total effect) ( <b>b<sub>1</sub></b> )	0.0605	21.4462	0.3332	0.0720	4.6310	0.0000
Effect of organisational innovation on quality management ( <b>b<sub>2</sub></b> )	0.0000	0.0024	0.0034	0.0682	0.0494	0.9607
Effect of organisational innovation on competitiveness when quality management is controlled (Direct effect) ( <b>b<sub>3</sub></b> )	0.1238	23.4553	0.3323	0.0696	4.7749	0.0000
Effect of quality management on performance when organisational innovation is controlled ( <b>b<sub>4</sub></b> )	0.1238	23.4553	0.2737	0.0559	4.8974	0.0000
<b>Test Of Significance Of Indirect Effect</b>						
<b>Bootstrap Test</b>						
<b>Effect</b>	<b>SE.</b>	<b>LL95CI</b>		<b>UL95CI</b>		
0.0009	0.0178	-0.0391		0.0312		

The results presented in Table 7 illustrate the fact that organisational innovation positively and significantly affect competitiveness ( $b_1=0.3332$ ;  $p<1\%$ ). Also, there is a positive but insignificant effect of organisational innovation on quality management ( $b_2=0.0034$ ;  $p>5\%$ ) and the effect of organisational innovation on competitiveness controlled by quality management is positive and significant ( $b_3=0.3323$ ;  $p>1\%$ ). Furthermore, the effect of quality management on competitiveness controlled by organisational innovation is positive and significant ( $b_4=0.2737$ ;  $p<1\%$ ). The results indicate the absence of mediation as confirmed by a bootstrap test with a confidence interval of 5% because there is zero found in the interval  $[-0.0391; 0.0312]$ . Consequently, quality management has no mediating effect on the relationship between organisational innovation and competitiveness. Thus, there is a direct

effect between organisational innovation and competitiveness ( $b_3=0.3323$ ;  $p>1\%$ ).

#### **4. Discussions of Results**

##### **4.1 Product Innovation, Quality Management, and Competitiveness**

Based on the results of the test of mediation through the Baron and Kenny approach, product innovation affects the competitiveness of food processing companies in Cameroon through the partial mediation of quality management (Table 4). That is, through the partial mediation of quality management, there is a positive and significant effect on product innovation on competitiveness, making product innovation a predictor of competitiveness. The results demonstrate the fact that if food processing companies in Cameroon improve on their products, these products could lead to a corresponding improvement in quality management and, therefore, an improved ability to compete with other competitors in the market.

These results are in line with the work of Oleksandr and Kumanova (2021) who examined innovative activity as a means of increasing the competitiveness of enterprises' products. The study aimed to determine the impact and importance of innovation in improving the competitiveness of products of business entities. The study showed that the results could be applied to solve specific practical problems in industrial enterprises to form an effective program of innovative activity to ensure the competitiveness of the products they manufacture. Also, these results are in line with the work of Hendayana et al. (2019) who carried out a study on the effect of Innovation on Business Competitiveness of Small and Medium Enterprise in Indonesia. This study examined the effect of innovation on the competitiveness of the handicraft sector creative industries in Indonesia. The findings revealed that innovation has a significant positive effect on the competitiveness of SMEs.

##### **4.2 Process Innovation, Quality Management, and Competitiveness**

In line with the results of the test of mediation, process innovation does not affect the competitiveness of food processing companies in Cameroon through the mediation of quality management (Table 5). That is, it attests that through the mediation of quality management, there is a positive but insignificant effect of process innovation on competitiveness. Also, there is a positive and significant direct effect of process innovation on competitiveness. This practically demonstrates the fact that the competing food processing companies of Cameroon cannot rely on quality management to improve the effect of process innovation on competitiveness. This is because the results indicated in the first place that there is no relationship between process innovation and quality management.

The results of the direct effect are in line with the work of Efend (2020) who carried out a study on innovation and competitiveness for low technology manufacturing SMEs through imitating capability and learning: The case of Indonesia. The aim of this study was to examine relationships among organizational learning, imitating capability, innovation, and competitiveness advantage in the small and medium enterprise (SME). The results showed that innovation had a positive relationship with competitiveness and has a mediating role in the relationship between organizational learning and imitating capability to competitiveness advantage. These results contradicts the work of Godinho et al. (2017) who investigated the relationship between innovation and total quality management and the innovation effects on organizational performance. Their study concluded that there is a statistical significant relationship between innovation and the implementation of TQM practices.

#### **4.3 Market Innovation, Quality Management, and Competitiveness**

With regards to the results portrayed by the test of mediation through the Baron and Kenny approach, market innovation does not affect the competitiveness of food processing companies in Cameroon through the partial mediation of quality management (Table 6). In other words, it advocate the fact that quality management positively and insignificantly affect process innovation and competitiveness. These results exhibit the fact that if food processing companies in Cameroon improve on their market innovations, it will not be a fruitful endeavor to increase competitiveness of the companies.

These results are in contradiction of the work of Kipchumba et al. (2021) who conducted a study on the effects of production and market innovations on the level of competitiveness of Sorghum Small Scale Agri-enterprises in Kenya and they should integrate different innovations on product, process, and market in enhancing competitiveness. There is also no presence of a direct effect of market innovation on competitiveness which also contradicts the work of Kiveu, Namusonge and Muathe (2019), who assessed the effect of innovation on firm competitiveness: the case of manufacturing SMEs in Nairobi County, Kenya.

#### **4.4 Organisational Innovation, Quality Management, and Competitiveness**

Finally, the results of the test of mediation convey that organisational innovation does not affect the competitiveness of food processing companies in Cameroon through the mediation of quality management (Table 7). That is, through the mediation of quality management, there is a positive but insignificant effect of organisational innovation on competitiveness. There is a positive and significant direct effect of organisational innovation on

competitiveness. The results, as illustrated by Table 7, show that if food processing companies in Cameroon adopt organisational innovation as a strategy to compete, they will actually have an edge over competitors. At the same time, these results demonstrated the fact that they do not need to improve their quality management using organisational innovation with the aim being competitiveness.

The results of the direct effect are in line with the work of Loann (2023) who investigated Innovation Strategy and Firm Competitiveness: A Framework to Support the Holistic Integration of Eco-Innovation. The study had as main objective to examine the interactions between all the components of ecoinnovation strategy: holistic engagement, technological innovation focus, organisational adaptation, open innovation, peculiarities of firm size. These results contradict the work of Heira et al. (2020) on the effects of Innovation on Competitiveness and Performance: Empirical Evidence in the State of Guanajuato in Mexico. The obtained results show that innovation has a positive influence on competitiveness and performance of the manufacturing companies in Guanajuato.

## **Conclusion**

In conclusion, this paper sorts to examine the effect of innovation on competitiveness in the food processing industry of Cameroon, with a specific focus on the mediating role of quality management. The objective is to determine whether quality management could mediate the effect of innovations (product, process, market and organisational) on competitiveness. The first objective was to assess the effect of innovation on competitiveness in the food processing industry of Cameroon. To this effect, the results show that innovations in terms of product, process, and organisational innovation were found to have a positive and significant effect on competitiveness. This was with the exception of market innovation, which happened to have an insignificant effect on competitiveness. The second objective of the study was to establish a link between innovation and quality management as it was the mediating variable. Based on this quest and the results obtained, it could be concluded that innovation (product innovation) could positively and significantly predict quality management.

In addition, as objective, this paper sorts to investigate the effect of quality management on the competitiveness of food processing companies in Cameroon. The test of hypothesis for this study shows that there is a positive and significant effect of quality management on competitiveness. Therefore, this further gave more strength to quality management as a mediator in this study. Finally, this paper sorts to establish a mediating role of quality management in the effect of innovation on competitiveness. This was made possible using Baron and Kenny's (1986) approach of mediation and the

Hayes (2023) Process Macro Version 4.3. Concerning the test of indirect effect, quality management was observed to have a partial mediation effect on product innovation and competitiveness. However, these findings indicated that quality management could not mediate the effect of process, market, and organisational innovations on competitiveness. Further research could be conducted while considering different mediators other than quality management.

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**Data Availability:** All of the data are included in the content of the paper.

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**Declaration for Human Participants:** This study has been approved by the ethical Research Committee of the Faculty of Social and Management Sciences of the University of Buea, and the principles of the Helsinki Declaration were followed.

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