
THE IMPACT OF FOOD SAFETY MANAGEMENT SYSTEM ISO 22000 ON CUSTOMER SATISFACTION AND LOYALTY, CASE STUDY OF COCA-COLA COMPANY IN ALGERIA

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Abstract. The present paper aims at determining the impact of Food System Management ISO 22000 on Coca-Cola customer's loyalty in Algeria through satisfaction as an intermediate variable. Based on a descriptive, analytical approach and a case study method, an electronic questionnaire was used as the main tool for data collection. It was distributed to a random sample of 385 customers at Coca Cola Company in Algeria. In addition, SPSS and AMOS programs were used to analyse the data and test the research hypotheses. The paper reached significant conclusions that the level evaluation of ISO 22000, in customers' point of view, varied between a weak rate of green and safe products, while innovative and quality products were highly rated. The result also demonstrated a weak indirect effect between food safety management system and customer loyalty through satisfaction expressed by a correlation coefficient, which was estimated at 0.23. The direct effect was greater with a correlation coefficient of 0.56. In fact, the output of food safety management system leads directly to the saturation of customer satisfaction and also to loyalty.

Keywords: *Coca-Cola Company; Customer loyalty; Customer satisfaction; Food Safety Management System (ISO 22000).*

JEL Classification: M11; M31; Q57.

INTRODUCTION

Rapid successive development and huge competition among various economic companies have led to the use of the systems and standards that result in a competitive advantage. The Food Safety Management System ISO 22000 is known as one of the most important modern systems for food companies. The food sector has a serious confidence crisis of public opinion; and then the food security has become an important issue for all parties concerned. In a new world characterised by dynamic development of consumer demand and developing international trade rules, the need to control and improve the quality and safety of food is now one of the strategic assets in competitive forces. The need to use the Food Safety Management System ISO 22000 coincides with the emergence of regulations and laws, as well as the increased customer needs.

Food safety is no longer an application of standards and specifications, but it also seeks to achieve customer satisfaction and loyalty, to understand what they

want now and lately. Due to the increase in customer demand, the emergence of alternative opportunities and the competition among different food companies, food safety has become sensitive to changes in customer desires, which makes the company's future depend on its loyal customers. By providing safe, innovative and quality products it is possible to achieve customer satisfaction, build confidence and commitment with them, as well as ensure their loyalty. In addition, by providing green products the environmental aspect is considered.

This paper highlights the impact of Food Safety Management System – ISO 22000 – on achieving the satisfaction and loyalty of Coca-Cola Company customers. Therefore, the following research question is addressed:

- What is the impact of the Food Safety Management System ISO 22000, on customer loyalty of Coca-Cola Company in Algeria through satisfaction as an intermediary variable?

The study aims to achieve the following objectives:

1. To present a theoretical framework of the concepts of customer satisfaction and loyalty according to the Food Safety Management System ISO 22000.
2. To define if the company under consideration is willing to apply the Food Safety Management System ISO 22000 in order to achieve customer satisfaction and loyalty to its products.
3. To determine the relationship between the food safety management system ISO 22000 and its impact on customer loyalty through an intermediate variable, which is the customer satisfaction.

This study has been of significant importance lately due to the increased interest in the food safety management system and its harmony with customer desire to determine the food safety management system output and consider the customer as a basic pillar since achieving their satisfaction and loyalty enables the company to reach its goals.

The present study is of scientific, economic, and social importance. As far as the scientific importance is concerned, there is a need to fill the research gap as most of the previous studies have focused on food safety management system requirements, or on the system administrative process, and their impact on customer satisfaction and loyalty. However, the current study is based on the impact of system outputs, which are quality products, innovative products, green products and safe products, on customer loyalty through satisfaction as a mediating variable.

The topic is of great economic importance for a company, which operates in the field of food production in order to improve its production and marketing efficiency, to gain customer satisfaction and loyalty, and to expand further in the food market. Coca-Cola in Algeria, which is the company under this study, can benefit from the weaknesses of the food safety management system.

The topic is of significant importance to the society, as it is in line with the increase in public awareness regarding food safety and individual preservation of one's physical health, by following a healthy diet, as well as increasing community awareness of environmental issues and protecting the society from pollution.

There are three main limitations of the research:

1. Research timing limitation: the research was conducted during the period of 2019–2020.
2. Research location limitation: the research was conducted in Algeria at Coca-Cola Company.
3. Research human limitation: the research was conducted on Coca Cola customers in Algeria, through Algerian population, which was estimated around 43 million; the age between 10 and 60 years was selected, resulting in 28 million people. The market share was calculated through an exploratory survey resulting in 17 million people.

1. LITERATURE REVIEW

1.1. Customer Satisfaction and Loyalty

Customer satisfaction is the mental state of a person when s/he receives a reward for sacrificing money and effort. It is related to the product and what this product does (Kotler *et al.*, 2009, p. 172); the customer satisfaction is the match of the product or service provided by the organisation with customer's expectations.

Customer satisfaction is also one of the most important priorities for company's survival; it determines the customer's needs and satisfactions, which allows the companies to have a strong competitive position (Adekiya, 2016, p. 56).

The interest in customer studies is evident and can be highlighted by the company's survival in the market and profitability achieved by customer satisfaction (Belbali *et al.*, 2009, p. 50). The company can also determine its market share by measuring customer satisfaction. If the customer is satisfied with the performance of the company, s/he will talk to others, which will lead to new customers. Thus, customer satisfaction is a measurement of the quality of service provided (Meziane, 2012, p. 100).

Customer satisfaction can evaluate the company's performance, and determine its conformity with customer's expectations (Arvey, 1998, p. 90). The company can adjust its marketing strategy according to those results; the information obtained by the company from its customers is an important basis for developing its current products and providing new products to the market (Al-Harhi, 2007, p. 23). Loyalty is a deep commitment to buy a product or service in the future regardless the external influences and marketing efforts that try to change the purchase decision (Zhuang *et al.*, 2006, p. 23). It is also the buying expectation of a brand often based on past positive experience (Michon, 2003, p. 71). Thus, can be concluded that customer loyalty is the customer's behaviour in purchasing the same product or service, or the same brand. It means that customers prefer dealing with a particular brand or product without dealing with other competitors, despite the competitors' marketing efforts in changing their decision (Daragahi, 2017, p. 125).

Gaining customer loyalty and continuing their interactive relationship with the company as long as possible positively affect the organisation's profitability and added value. It also allows taking many opportunities that lead to excellence and leadership in the market (Moorman, 2016). In addition, customer loyalty reduces

the cost of bringing customers and increases the company survival in the market (Lawfer, 2003, p. 37). Loyalty is also based on basic pillars, including emotional loyalty, as it represents the feelings of the customers in their preference for products.

1.2. Food Safety Management System

The Food Safety Management System ISO 22000 is a new standard for food safety, developed by the Foundation Food Safety System Certification (FFSC) (ISO, 2018) and approved by the Global Food Safety Initiative (GFSI) (Teixeira & Paulo, 2012, p. 9). As a set of requirements aimed at the Conformity Certificate, which integrates the quality principles set out in ISO 9001 and the HACCP approach to the development of healthy food products (Multon, 2013, p. 359), it provides its users with a common language of all international standards, ensures legal compliance, facilitates the integration of safety and security management with the rest of other management systems, reduces the risk, and improves continuously the food safety aspects (Carrasco *et al.*, 2011, p. 84).

The Food Safety Management System ISO 22000 aims at demonstrating compliance with applicable legal and regulatory requirements relating to food safety aspects, evaluate the customers' requirements, demonstrate compliance with prescribed food safety requirements to improve customer satisfaction and demonstrate a commitment to interested parties (Teixeira & Paulo, 2012). It also enhances consumer confidence as well as compliance with HACCP principles and achieves international communication incorporating the ISO 22000 concepts etc.

The Food Safety Management System ISO 22000 has many outputs, such as green products, as it is one of the green marketing mix elements, which means providing green products to customers (Kumar & Bhimrao, 2015, pp. 41–42), and the need to follow these products during their life stages to ensure their use within the environmental orientation (Mounad, 2014, p. 24). These products are environmentally friendly and satisfy the needs and desires of customers in an optimal way, depending on the positive needs of their delivery (Yusuf *et al.*, 2019, p. 19). The level of acceptance should also be considered, where the saturation offered is greater or at least equal to the desired saturation. Besides, safe products are a condition of acceptable risk of food illness or injury, which is achieved through policies, regulations, standards, research, engineering designs, technology, monitoring and other measures applied to reduce or control risks along the food supply chain. (Knechtges, 2011, pp. 34–35).

Innovative products are related to providing goods or services with completely new characteristics or their use methods, and are often seen as a change in the technological content of a particular product (Seram, 2015, pp. 3–5). The general aim is to improve the services provided to customers and respond to their requirements. Generally, this type of innovation depends on different skills of the company and the interaction between the internal and external environment (Seram, 2018, p. 209).

1.3. Previous Studies and Conceptual Model

Many previous studies are related to this research topic, especially studies that combine customer satisfaction and loyalty, as well as studies that address the impact between quality satisfaction and loyalty. Other studies touch the food safety management system based on ISO 22000 in terms of evaluating its application restrictions and its adoption in food companies, or in terms of evaluating the awareness of customers and employees of the need to adopt this system. Among the most significant studies, the following can be distinguished:

- A study entitled “Reasons and Limitations to Implementing Food Safety Management System ISO 22000: Evidence from Spain”. This study attempts to analyse the main difficulties that may prevent the adoption of the standard in food industry. The survey is based on a sample of 189 Spanish firms with ISO 22000 certification distributed at all levels of food chain. The results constitute the existence of external pressure that leads companies to adopt an FSMS based on ISO 22000. The most important reasons of this decision are the desire to improve efficiency, productivity, and quality. Results also identify three main limitations of the ISO 22000 application: it is not a well-known standard; many food companies are unaware of their potential; besides, they are aware of its high costs when adopted (Escanciano, 2014).

- A study entitled “An Evaluation of ISO 22000 Food Safety Standards Awareness and its Implementation in Zimbabwean Branded Fast Food Outlets: Customer, Employee and Management Perspectives”. This study sought to evaluate the levels of awareness and management views regarding the usefulness of ISO 22000 certification, as well as determining employee and customer awareness of the quality statute. For the perspective of management, ISO certification was important in meeting customer’s expectations, improving operational efficiency. However, managers also thought that the ISO 22000 certification did not positively impact food safety and customer satisfaction and loyalty as such. Employee survey indicated that despite the majority of them was trained according to the ISO 22000 standard, only very few of the training programmes and/or certificates improved safety at work (Chivandi, 2017).

A study entitled “Implementation of Quality Management System with ISO 22000 in Food Italian Companies”. This study analyses the benefits gained and the obstacles faced by Italian companies in implementing ISO 22000 standards, and considers the effects of company size and years of certification on the results. Data were elaborated through SPSS 22.0 Statistical Software Package. The main benefits derived from the application of this standard are both external and internal: ISO 22000 improves commercial opportunities and internal procedure; the main obstacles to implementation are noted particularly by micro and small companies at the first phase of certification and they are related to changes in internal organisation and the costs involved in certification (Casolani, 2018).

This study is unique in examining the effect of food safety management system according to the international standard ISO 22000 on customer loyalty through satisfaction as an intermediate variable; the study examines customers of Coca-Cola products in Algeria.

The literature review has led to the following hypothesis:

The main hypothesis: There is a significant impact of ISO 22000 on customer loyalty to Coca-Cola Company in Algeria through satisfaction as an intermediate variable.

The following sub-hypotheses can also be developed:

The first sub-hypothesis:

There is a statistically significant effect at 0.05 level for quality products on achieving customer loyalty to Coca-Cola Company.

The second sub-hypothesis:

There is a statistically significant effect at 0.05 level of safe products on customer loyalty to Coca-Cola Company.

The third sub-hypothesis:

There is a statistically significant effect at 0.05 level of green products on achieving customer loyalty to Coca-Cola Company.

The fourth sub-hypothesis:

There is a statistically significant effect at 0.05 level of innovative products on achieving customer loyalty to Coca-Cola Company.

The fifth sub-hypothesis:

There is a statistically significant effect at 0.05 level of Food Safety Management System ISO 22000 on achieving customer loyalty to Coca-Cola Company.

The conceptual model of the research was established (see Fig. 1).

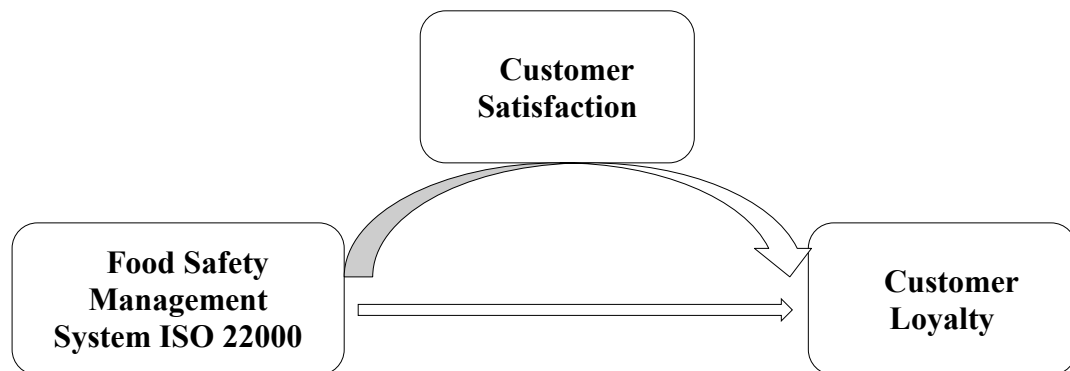


Fig. 1. The conceptual model of the research, 2020.

2. METHODS AND PROCEDURES

The authors followed the descriptive as well as the analytical approach by collecting and analysing the study data relying on different statistical methods such as the SPSS and AMOS programs.

The study population was the Algerian consumers of Coca-Cola products. The online questions were distributed to a random sample of 20 individuals. The percentage of those consumers who bought the company's products was 60 %.

According to the statistics of January 2020, the population of Algeria was estimated at 43 million (Population of Algeria, 2020); 64.70 % of whom were between 10 to 60 years old, which was equivalent to approximately 28 million individuals. Thus, the size of the population for this study was estimated at 17 million individuals. The sample size was calculated according to Stephen Thompson's equation, which was equal to 385 individuals (Thompson, 2012, pp. 53–56); the electronic questionnaire was distributed to them, and 272 questionable forms were retrieved, with a response rate of 70.64 %.

3. RESEARCH RESULTS

This section outlines the presentation, analysis and interpretation of data collected from the respondents through the questionnaire. The data generated from the personal profile of respondents were used to arrive at the descriptive analysis.

Before analysing the results of the study (i.e., sample responses on food safety management system and customer satisfaction and loyalty), the authors tested the stability of the questionnaire through all its axes, using the Cronbach's alpha stability factor (see Table 1).

Table 1. Stability Coefficients (Cronbach's alpha)

Themes	Quality products	Safe products	Green products
Coefficient of Cronbach's alpha	0.708	0.840	0.743
Themes	Innovative products	Customer satisfaction	Customer loyalty
Coefficient of Cronbach's alpha	0.809	0.773	0.789
Total	0.927		

Note: Developed by the researchers based on the SPSS program.

According to the results obtained, the value of Cronbach's alpha coefficient for the different axes exceeded 60 %, which ranged from 0.7708 to 0.840, which was high, while the total value of the Cronbach's alpha coefficient was 0.927, which was also high, thus indicating the stability of the measuring instrument.

The attitudes of individuals in the study sample was analysed by evaluating different axes of the questionnaire using arithmetic mean and standard deviation in order to determine the rank of each axis (see Table 2).

Table 2 demonstrates that the members of the study sample were interested in innovative products, where the mean value was 3.7085 and the standard deviation was 0.72618. The second place was taken by quality products with the mean value of 3.6308 and the standard deviation of 0.69471.

Table 2. Descriptive Statistics of Axes

Axes	Average	Standard deviation	Rank	Evaluation
Quality products	3.6308	0.69471	3	High
Safe products	2.6848	0.82877	2	Average
Green products	3.0984	0.63129	6	Average
Innovative products	3.7085	0.72618	1	High
Customer satisfaction	3.3423	0.83113	5	Average
Customer loyalty	3.3736	0.71255	4	Average

Note: Developed by the researchers based on the SPSS.

The customer loyalty to the company was an average of 3.3736 and standard deviation of 0.71255, which indicated an average degree of approval by the individuals of the study sample to verify loyalty. The same applies to customer satisfaction, where the mean value was 3.3423 and the standard deviation was 0.83113, which indicated an average degree of approval by the members of the study sample.

It was also possible to determine interest in green products, which was expressed through the mean value of 3.984 and standard deviation of 0.63129. In the same case, interest in safe products could also be identified, where the mean value was 2.6848 and the standard deviation was 0.82877.

Testing the Hypotheses

The main hypothesis and sub-hypotheses were tested to determine the impact of the Food Safety Management System ISO 22000 on customer satisfaction and loyalty to Coca-Cola Company. Therefore, a simple regression analysis was used to test each sub-hypothesis.

The first sub-hypothesis:

There is a statistically significant effect at 0.05 level for quality products on achieving customer loyalty to Coca-Cola Company.

To test this hypothesis, a simple regression analysis was used, the results of which are provided in Table 3.

Table 3. Result of Simple Regression Analysis to Test the Impact of Quality Products on Customer Loyalty

The axis	Value of <i>B</i>	<i>T</i> -value	<i>F</i> -value	Correlation coefficient <i>R</i>	Determination coefficient <i>R</i> ²	Sig
Quality products	0.600	11.594	134.411	0.585	0.343	0.000

Note: Developed by the researchers based on the SPSS.

Table 3 shows the effect of quality products on achieving customer loyalty to Coca-Cola Company. The coefficient *R*² of 34.3 % demonstrates that the changes

in the customer loyalty level result from the change in the importance level of quality products. The significance level $P < 0.05$ indicates that the result is significant; therefore, the authors reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at 0.05 for quality products on achieving customers loyalty to Coca-Cola Company.

The second sub-hypothesis:

There is a statistically significant effect at 0.05 level of safe products on customer loyalty to Coca Cola Company.

To test this hypothesis, a simple regression analysis was used, the results of which are demonstrated in Table 4.

Table 4. Result of Simple Regression Analysis to Test the Impact of Safe Products on Customer Loyalty

The axis	Value of B	T -value	F -value	Correlation coefficient R	Determination coefficient R^2	Sig
Safe products	0.464	10.308	106.258	0.540	0.292	0.000

Note: Developed by the researchers based on the SPSS.

Table 4 shows the effect of safe products on achieving customer loyalty to the Coca-Cola Company, where the coefficient R^2 was 0.292. It means that (29.2 %) of changes in the level of achieving customer loyalty result from the change in the importance level of safe products. The level $P < 0.05$ means that the result is significant; therefore, the authors reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at 0.05 level of safe products on achieving customer loyalty to Coca-Cola Company.

The third sub-hypothesis:

There is a statistically significant effect at 0.05 level of green products on achieving customer loyalty to Coca Cola Company.

To test this hypothesis, a simple regression analysis was used, the results of which are provided in Table 5.

Table 5. Result of Simple Regression Analysis to Test the Impact of Green Products on Customer Loyalty

The axis	Value of B	T -value	F -value	Correlation coefficient R	Determination coefficient R^2	Sig
Green products	0.649	11.290	127.470	0.575	0.331	0.000

Note: Developed by the researchers based on the SPSS.

Table 5 shows the effect of green products on achieving customer loyalty to Coca-Cola Company, where the coefficient R^2 of 0.331 means that (33.1 %) of changes in the level of achieving customer loyalty result from the change in the

importance level of green products. The value of influence degree was (0.649), indicating that the increase in green products led to an increase at the level of achieving customer loyalty (at the level of $P < 0.05$). The result is significant; therefore, the authors reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at 0.05 level of green products on achieving customer loyalty to Coca-Cola Company.

The fourth hypothesis:

There is a statistically significant effect at 0.05 level of innovative products on achieving customer loyalty to Coca-Cola Company.

To test this hypothesis, a simple regression analysis was used, the results of which are provided in Table 6.

Table 6. Result of Simple Regression Analysis to Test the Impact of Innovative Products on Customer Loyalty

The axis	Value of B	T -value	F -value	Correlation coefficient R	Determination coefficient R^2	Sig
Innovative products	0.505	9.637	92.874	0.514	0.265	0.000

Note: Developed by the researchers based on the SPSS.

Table 6 shows the impact of innovative products on achieving customer loyalty to Coca-Cola Company, where the coefficient R^2 was 0.265. It means that (51.40 %) of changes in the level of achieving customer loyalty resulted from a change in the importance level of innovative products (at a level of $P < 0.05$). The result is significant; therefore, the authors reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at 0.05 level of innovative products on achieving customer loyalty to Coca-Cola Company.

The fifth sub-hypothesis:

There is a statistically significant effect at 0.05 level of Food Safety Management System ISO 22000 on achieving customer loyalty to Coca Cola Company.

To test this hypothesis, a simple regression analysis was used, the results of which are provided in Table 7.

Table 7. Result of Simple Regression Analysis to Test the Impact of Food Safety Management System on Customer Loyalty

The chapter	Correlation coefficient R	Determination coefficient R^2	F -value	Sig
Food Safety Management System	0.709	0.503	64.565	0.000

Note: Developed by the researchers based on the SPSS.

Table 7 shows the impact of food safety management system on achieving customer loyalty to Coca-Cola Company. There is a statistically significant impact of food safety management system on achieving customer satisfaction. The correlation coefficient (0.709) is high, and a positive relationship at the significance level of 0.000 is less than 0.05, while the coefficient R^2 of 0.503 means that (50.3 %) of changes in the level of customer loyalty are due to a change in the level of food safety management system. Therefore, we reject the null hypothesis and accept the alternative hypothesis, which states that there is a statistically significant effect at 0.05 level of food safety management system on achieving customer loyalty to Coca-Cola Company.

The main hypothesis was tested through the structural modelling method. After analysing the proposed model of the hypothesis, good quality indicators of the model were reached and summarised (see Table 8).

Table 8. Absolute Conformity Indicators of the Study Model

Indicator	Admission requirements for the form	Registered value	Evaluation
C_{min}	5.441	Is not significant	–
C_{min}/Df	0.676	Must be confined between [1–5]	Not investigated
Df	8	$0 < Df$ specific model	investigator
Significance level (p -value)	0.713	–	investigator
Conformity Quality Indicators			
GFI	0.99	Equal to or greater than 0.95	investigator
RMSEA	0.00	The value is less than 0.05	investigator
SRMR	0.01	Equal to or smaller than 0.08	Investigator

Note: Developed by the researchers based on the Amos 23.

According to Table 8, the chi-squared index is a basic indicator for estimating conformity of the theoretical model with a score of 5.441 and a score of 8, which is not significant, i.e., above the level of 0.001. Df/C_{min} is 0.676, which is not an acceptable value, because it does not fall in the range 1–5. However, the quality of the model cannot be evaluated because there is an acceptable consensus, but for the GFI index, it has a value of 0.99, which is excellent. As the approximate mean error square of RMSEA is 0.00 and the standard mean square residual index SRMR is 0.01, the model matches the data.

From the Table 9, we see that the value of comparative conformity index of CFI is 1, which is an excellent value because it is above the field of conformity of 0.90, while for the Tucker Lewis TLI, the value is 0.99, which indicates that the conformity is good for the tested model. The studied model outperformed the zero-model match, which is a very good value compared to the field specified by 0.99.

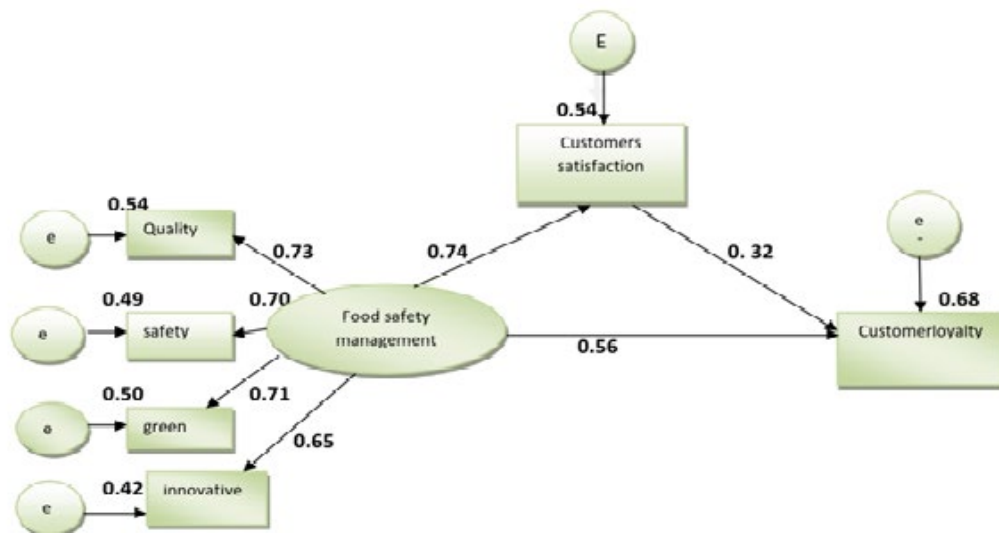
Table 9. Incremental and Comparative Indicators of the Study Model

Indicator	Registered value	Admission requirements for the form	Evaluation
CFI	1	Equal to or greater than 0.90	investigator
TLI	0.99	Equal to or greater than 0.90	investigator
NFI	1	Equal to or greater than 0.90	investigator

Note: Developed by the researcher based on the Amos 23.

The results of conformity quality indicators, incremental and comparative indicators show that the model adopted for the study has very good matching indicators.

There is an indirect effect of the food safety management system on customer loyalty through customer satisfaction.

**Fig. 2.** A model showing relationships of study variables, 2020.

From the results shown in the study model, we find that the causal relationship between customer satisfaction and customer loyalty was statistically significant. The regression coefficient was 0.32, and the regression coefficient between the independent variable (the food safety management system) and the intermediate variable (customer satisfaction) was 0.74. Thus, the indirect relationship between the food safety management system and customer loyalty through customer satisfaction was calculated as follows:

The total regression value, or correlation coefficient $0.74 \times 0.32 = 0.23$.

The total value of the determination coefficient is 0.0529.

The results showed that there was a statistically significant impact of the food safety management system on customer loyalty through customer satisfaction in the company, where the correlation coefficient was 0.23 and the coefficient of determination was 0.0529, which meant 5.29 % of changes in the loyalty level through customer satisfaction was the result of change in the level of food safety

management system. It was a weak impact relationship, which was less than the direct impact relationship, where the correlation coefficient was 0.56 and the coefficient of determination was 0.33136, i.e., 31.36 %. Therefore, we reject the null hypothesis and accept the alternative hypothesis, so there is an indirect impact relationship between the food safety management system and customer loyalty through customer satisfaction but at a weak rate. It can be explained by the fact that food safety and management system outputs and its properties lead directly to the saturation of customer satisfaction and loyalty.

4. DISCUSSION AND CONCLUSION

The most important results of this study are as follows:

- Coca-Cola Company aims at gaining customer loyalty and maintaining their attractive relationship for longer time;
- the company seeks to understand the customer needs and desires, their expectations and aspirations from the company.

The company improves its food safety, increases customer satisfaction, and builds their loyalty. Coca-Cola Company adopts the Food Safety Management System ISO 22000 to demonstrate its ability to control food safety risks and ensure the continuity. This can be achieved by providing quality, safe, green, and innovative products and that meet the requirements agreed with customers and applicable regulations.

The ISO 22000 is an added value for Coca-Cola Company.

Coca-Cola Company in Algeria seeks to develop the food safety management system through continuous improvement. Coca-Cola Company seeks to comply with applicable legal regulatory requirements and demonstrate its ability to control food safety hazards. There is a little impact on quality products, safe products, green products, and innovative products on achieving customer satisfaction, but these products have poor effects on customer loyalty.

There is an average impact of the Food Safety Management System ISO 22000 on achieving customer satisfaction and loyalty.

There is a weak impact relationship of the Food Safety Management System ISO 22000 on customer loyalty through satisfaction as an intermediate variable.

Recommendations

The main recommendations of this study are as follows:

- Coca-Cola Company should seek to develop its products according to its customer desires, with less risk on the environment, thus providing the possibility of recycling the packages upon the end of their use and offering green products. It should use seals and labels to make customers aware of the fact that Coca-Cola products meet food safety standards.
- Coca-Cola Company should take into consideration the environmental impact during the distribution of its products and try to communicate more with its customers through social media to solicit their opinions. The company should also pay attention to the social aspect because it affects its reputation positively, and should activate the outputs of the Food Safety

Management System ISO 22000, especially in terms of green and safe products in order to gain customer loyalty through satisfaction.

- There is a need to intensify the efforts of all internal and external parties of the company for the success of Food Safety Management System ISO 22000 at Coca-Cola Company.

Research Prospect

The results of the research can be applied to numerous food companies in Algeria, and even more in North Africa. The area of research could be the evaluation of food safety management impact on the consumption culture of customers in different Algerian food companies.

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