Sudan University for Science and Technology

College of Graduate Studies

Total Quality & Excellence Center

Impact of implementation of ISO 22000 on marketing

Case study: Coca-Cola Company

أثر تطبيق نظام ISO 22000 على التسويق

Thesis submitted in partial fulfillment of the requirements for the MSc. in Total Quality Management & Excellence

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الاستهلال

قال تعالى: ''يَا أَيُّهَا الَّذِينَ آمَنُوا كُلُوا مِن طَيِّبَاتِ مَا رَزَقْنَاكُمْ وَاشْكُرُوا لِلَّهِ إِن كُنتُمْ إِيَّاهُ تَعْبُدُونَ ۞ إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنزِيرِ وَمَا أُهِلَّ بِهِ لِغَيْرِ اللَّهِ فَمَنِ اضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَّحِيمٌ''

صدق الله العظيم

سورة البقرة الآيات ١٧٢-١٧٣

DEDICATION

THIS SIMPLE EFFORT DEDICATED TO MY PARENTS, MY
BROTHERS AND SISTERS, ANYTHING NICE HAS COME TO
MY LIFE HAS BEEN BECAUSE OF YOUR EXAMPLE,
GUIDANCE AND LOVE.
A SPECIAL DEDICATION TO MY BROTHER MOHAMED FOR
ALL THE SACRIFICES THAT HE MADE ON MY BEHALF.
ALL WHO TAUGHT ME A LETTER.
ALL MY FRIENDS...

RAMY AHMED ALI...

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*I WOULD LIKE TO THANK EVERYONE ADDED KNOWLEDGE TO THE QUALITY FIELD ALL OVER THE WORLD 'THANK YOU'.

Abstract

The title of this study is the impact of implementing of ISO 22000 on marketing.

Quality systems have their clear impact on products, employees and customers and this is the reason of its importance and the importance of implementing each one in its scope that it concern.

Food Safety Management System (ISO 22000) and its impact on quality of products has make it valuable for big food production companies.

The reason of this research is to measure the impact of implementing of food safety management system (ISO 22000) on products marketing.

The case study was Coca-Cola Company (Sudan), so 50 questionnaires have been distributed to a sample of 50 employees from quality and sales departments of the company.

Descriptive and quantitative analytical methods have been used in analyzing the results of this study.

The study has come out with the targeted results, the analysis of the data has illustrated that applying of food safety management system has benefited the company financially, administratively and in the internal system of the followed processes in products manufacturing.

It also has satisfied the customers with company'sproducts, which has attracted more customers to the company, and therefore this has increased sales and profits of the company.

ملخص الأطروحة

هذه الدراسة بعنوان أثر تطبيق نظام الجودة ISO 22000 على التسويق.

أنظمـة الجـودة لهـا أثرهـا الواضـح علـى المنتجـات،الموظفين والزبائنولهـذا السبب كانت أهميتها وأهمية تطبيق كل منها في مجالها الذي تهتم به.

نظـام جـودة وسـلامة الأغذيـة 22000   ISO وأثـره علـى جـودة المنتجـات الغذائية جعله ذو قيمة عاليةلكبرى شركات المنتجات الغذائية وذلك لضمان تقديم منتج صحي وذو جودة عالية للزبائن.

الغرض مـن هذه الدراسـة هو قيـاس مدى تـأثير نظـام جـودة وسـلامة الأغذيـة ISO 22000 على تسويق المنتجات.

توصلت الدراسـة الـى النتائج المبتغاة، حيث أن تحليل الاستبانات أوضـح أن تطبيق نظام جودة وسلامة الأغذية عاد بالنفع على الشركة ماليا وإداريا وداخليا في نهج العمليـات المتبعـة في تصنيع المنتجـات، كذلك كـان لـه أثره فـي رضـاء الزبائن عن منتجات الشركة والذي يعني انجذاب مزيد من الزبائن وبالتالي زيادة في مبيعات وأرباح الشركة.

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CHAPTER ONE

INTRODUCTION

Introduction

Globalization and competitiveness became the major challenges in almost all organizations and managers today, seeking for modern approaches to gain for better competitive advantages. Considering these circumstances, managerial pattern such as marketing and quality management become relevant.

ISO 22000 is one of ISO family; which is an international standard specifies the requirements for food safety management system (FSMS) that involves the following elements:

- Interactive communication.

- System management.

- Prerequisite programs.

- HACCP principles.

Critical reviews of the above elements have been conducted by many scientists communication along the food chain is essential to ensure that all relevant food safety hazards been identified and adequately controlled at each step within the food chain. This implies communication between organizations both upstream and downstream in the food chain.

Recently, there has been much interest in the role of marketing resources in contributing to the creation of competitive advantage and subsequently firm performance. Most of this work to date, however, has been conceptual or theoretical in nature, and there has been little empirical research into the nature and impact of marketing resources.

Drawing on literature from both the marketing and strategic management disciplines, the authors develop and empirically test scales for measuring marketing resources and assess their impact on performance outcomes.

1.1 ISO 22000

Communication with customers and suppliers about identified hazards and controlled measures will assist in clarifying customer and supplier requirements.

Recognition of the organization's role and position within the food chain is essential to ensure effective interactive communication throughout the chain in order to deliver safe food products to the final consumer.

The most effective food safety systems are established, operated and updated within the framework of a structured management system and incorporated into the overall management activities of the organization. This provides maximum benefit for the organization and interested parties. ISO 22000 was been aligned with ISO 9001 in order to enhance the compatibility of the two standards.

ISO 22000 maybe applied independently of other management system standards or integrated with existing management system requirements.

1.2 Benefits of ISO 22000

- More efficient and dynamic food safety hazard control.

- Systematic management of prerequisite programmes.

- Valid basis for taking decisions.

- Increased due diligence.

- Control focused on what is necessary.

- Saves resources by reducing overlapping system audits.

- Organizes and targets communication among partners.

- Resource optimization.

- Improves documentation.

- Better planning, less post-process verification.

1.3 Marketing

The findings indicate that marketing resources impact on financial performance indirectly through creating customer satisfaction and loyalty and building superior market performance.

Adopting a contingency perspective, the authors present and test a fit-as-moderation model that posits that overall firm performance is influenced by how well the marketing organization's structural characteristics (i.e., formalization, centralization, and specialization) and strategic behavioral emphases (i.e., customer, competitor, innovation, and cost control) complement alternative business strategies (i.e., prospector, analyzer, low-cost defender, and differentiated defender). Responses from 228 senior marketing managers provide support for the model and demonstrate that each strategy type requires different combinations of marketing organization structures and strategic behaviors for success.

1.4 Statement of the problem

Implementing food safety management system (ISO 22000) have wide benefits on organizations and customers, so problem of this research is measuring the impact of implementation of ISO 22000 on organization and customers.

1.5 Research objectives

The research aims to achieve the following:

1.5.1 To measure the impact of implementation of ISO 22000 on marketing.

1.5.2 To measure the impact of implementation of ISO 22000 on customer satisfaction.

1.5.3 To insure whether the implementation of ISO 22000 improve the quality of products.

1.5.4 To insure whether the implementation of ISO 22000 improve the internal processes.

1.6 Research Hypotheses

1.6.1 There is no relationship between ISO 22000 and marketing.

1.6.2 There is no impact of ISO 22000 on customer satisfaction.

1.6.3 There is no impact of ISO 22000 on the quality of products.

1.6.4 There is no impact of ISO 22000 on the internal processes.

1.7 Research Methodology

For the purpose of this research, the researcher adopted the descriptive analytical approach and quality tools, which is relevant to the nature of this type of researches.

1.8 The research dimension

Place: coca cola company (Sudan).

Period: from September 2015 to April 2016.

1.9 Data sources

Researcher depends on the following sources of information:

1.9.1 The primacy sources
- Survey Questionnaires.

1.9.2 The secondary sources

- Reports and records of the institutions and the relevant authorities.
- Specialized studies in the field of research.
- Research and academic studies and references.

CHAPTER TWO

LITERATURE REVIEW & PREVIOUS STUDIES

Literature review and previous studies

2.1 Literature review

2.1.1 History of ISO

ISO (International Organization for Standardization) is an independent, non-governmental membership organization and the world's largest developer of voluntary International Standards.

It made up of 162 member countries that are the national standards bodies around the world, with a Central Secretariat that been based in Geneva, Switzerland.

2.1.2 What are standards?

International Standards make things work. They give excellent specifications for products, services and systems, to ensure quality, safety and efficiency. They are instrumental in facilitating international trade.

ISO has published more than 19500 International Standards covering almost every industry, from technology, to food safety, to agriculture and healthcare. ISO International Standards affect everyone, everywhere.

2.1.3 ISO story

The ISO story began in 1946 when delegates from 25 countries met at the Institute of Civil Engineers in London and decided to create a new international organization 'to facilitate the international coordination and unification of industrial standards'. In February 1947 the new organization, ISO, officially began operations.

Since then, it have published over 19500 International Standards covering almost all aspects of technology and manufacturing.

Today it have members from 162 countries and 3368 technical bodies to take care of standard development. More than 150 people work full time for ISO's Central Secretariat in Geneva, Switzerland.

It is all in the name

Because 'International Organization for Standardization' would have different acronyms in different languages (IOS in English, OIN in French for Organisation International de Normalisation), its founders decided to give it the short form ISO. ISO been derived from the Greek (ISOS), meaning equal. Whatever the country, whatever the language, it is always **ISO**.

2.1.4 History of ISO 9000

▪ **1987 version:**

ISO 9000:1987 had the same structure as the UK Standard BS 5750.

ISO 9000:1987 was been also influenced by existing U.S. and other Defense Standards "MIL SPECS", and so was well suited to manufacturing, (The emphasis was placed on procedures rather than the overall process of management).

▪ **1994 version:**

ISO 9000:1994 emphasized quality assurance via preventative actions, instead of just checking final product, and continued to require evidence of compliance with documented procedures. That could lead to many paper and procedure manuals. There were three standards as in 1987: 9001, 9002 and 9003.

▪ **2000 version:**

"The text of the international Standard ISO 9001:2000 has been prepared by Technical Committee ISO/TC176. The transportation into a European Standard has been managed by the CEN Management Centre (CMC) with assistance of CEN/BT WG 107."

The three quality assurance requirement standards ISO 9001:1994, ISO 9002:1994, and ISO 9003:1994 are replaced by a single quality management system requirement standard: **ISO 9001:2000**.

Design and does in fact engage in the creation of new products.

"Process management" was the monitoring and optimizing of a company's tasks and activities, instead of just inspecting the final product. The 2000 version also

demands involvement by upper executives, in order to integrate quality into the business system and avoid delegation of quality functions to junior administrators. Another goal is to improve effectiveness via process performance metrics numerical measurement of the effectiveness of tasks and activities. Expectations of continual process improvement and tracking customer satisfaction were made explicit.

2.1.5 FOOD SAFETY MANAGEMENT SYSTEM

In parallel with improvements in the scientific basis of food microbiology, developments have also been made in the more prosaic business of ensuring that this knowledge is applied in a systematic way in order to be certain that foods are produced, processed and served with the minimum risk of causing illness.

Various religious and social prohibitions about eating certain kinds of foods and how they should be handled go back a very long way. One, motivation for these may have been an observed association between particular foods and behaviors and outbreaks of illness but this is probably not the whole story, particularly concerning religious taboos. However, there are some more recent examples where the association between a food and illness had clearly made. Thus in 1802 in Stuttgart an official warning was issued detailing the symptoms of botulism, the dangers associated with eating spoiled sausage, and the proper methods for preparing and curing sausages (Dickson 1918).

With the advent of microbiology as an experimental scientific discipline, the possibility of testing foods to see if they contained pathogens or other organisms of concern became a possible means for controlling quality. This approach persists to this day although it now

Plays more of a complementary role to other management schemes since its limitations are widely recognized. The distribution of organisms in solid foods means that truly representative samples for testing were not easily obtained - the only way to increase confidence in a test result is to take an unfeasibly large proportion of the lot for testing. Hence, with any realistic sampling scheme there is an appreciable chance that acceptable product will be rejected or that unacceptable product will be accepted. A further drawback is that results from failing samples do not necessarily indicate where in the production process a problem arose.

Therefore, in the absence of any remedial information similar failures in the future cannot be prevented. Thus, it became recognized that application of good practices during the manufacture or production of food was a more effective way of controlling quality.

Sir Graham Wilson summarized this view at a meeting on microbiological standards held in 1969: FOOD SAFETY MANAGEMENT SYSTEMS in parallel with improvements in the scientific basis of food microbiology. Developments has also been made in the more prosaic business of ensuring that this knowledge is applied in a systematic way in order to be certain that foods are produced, processed and served with the minimum risk of causing illness.

Introduction to Food Microbiology 15 Bacteriologists are better employed in devising means to prevent or overcome contamination than in examining more and more samples, control of processing is of far greater importance than examination of the finished article. (Wilson 1970).

The introduction of Good Manufacturing Practices (GMP) provided a framework for the hygienic production of food rather than retrospectively identifying problems by accepting or rejecting batches based on microbiological testing (Notermans and Barendsz 2002).

Codes of GMP have been produced by a range of bodies such as the Codex Alimentarius Commission and a number of trade associations. These cover aspects such as plant layout and design and the control of operating procedures. Their principal limitation lies in their broad-brush coverage, which means that they tend to be general in scope and qualitative in terms of the advice provided. This failing was recognized quite early on and led to the development of more systematic approaches based on an analysis of individual processing operations to identify which important steps were critical to the control of microbial hazards and ensuring that control was exercised and monitored at these points.

Hazard **A**nalysis and **C**ritical **C**ontrol **P**oint (**HACCP**) scheme, as it came to be known, was subject to considerable development following its inception in the 1960s when it was developed by the Pillsbury Corporation to assure the safety of foods used in the United States' space program. Its format and principles are now

the subject of internationally recognized agreement and it forms the basis of food hygiene regulations throughout the world.

Microbiological Risk Analysis has been described as the third wave of food safety following GMP and HACCP. It comprises three interrelated activities:

- ❖ Risk Assessment
- ❖ Risk Communication
- ❖ Risk Management

Microbiological Risk Assessment (MRA) is the scientific part and has as its objective the provision of a formal, validated and transparent estimate of the level of risks, which can be communicated to policy- and decision makers to inform Risk Management and Risk Communication. The impetus for internationally agreed risk assessment procedures came initially from world trade talks in the 1990s, where it was recognized that to prevent food safety being used as a nontariff barrier to international trade in foods, decisions regarding any risk that they might pose should be based on sound, transparent and agreed procedures for the assessments of risk.

Microbiological risk assessment consists of four stages:

- ❖ Hazard identification - the identification of pathogens, which may be present in a particular food.
- ❖ Hazard characterization - a qualitative/quantitative evaluation of the adverse effects of a pathogen including if possible the relationship between pathogen dose and effect (dose/response).
- ❖ Exposure assessment - an estimate of the likely intake of the particular pathogen based on food consumption patterns and incidence of the pathogen.
- ❖ Risk characterization - a qualitative/quantitative estimate (including its attendant uncertainties) of the probability and consequences of illness caused by the pathogen.

A number of risk assessments have been produced (see, for example WHO/FAO 2005, 2006) and these can be used to inform policy decisions and in the assessment of alternative control measures. Ultimately, an MRA should contribute to establishing an agreed Food Safety Objective – a statement of the

maximum frequency of occurrence or level of a pathogen in a food considered acceptable for consumer protection – something that should be deliverable through the application of good hygiene practices and HACCP.

2.1.6 HACCP

2.1.6.1 Introduction to HACCP

Food safety in the early twenty-first century is an international challenge requiring close cooperation between countries in agreeing standards and in setting up transnational surveillance systems. The lessons of the past two decades are plain to those engaged in the food industry. No longer can farmers grow just what they want or use technical aids to farming without taking into account the effect on the quality of the food produced (Rooney and Wall, 2003). The behavior of European consumers has been gradually changing.

They currently require not only much higher dietary quality, hygiene and health standards in the products they purchase, but they also look for certification and reassurance of products' origins (national or geographical) and production methods. This heightened consumer awareness is reflected in the demand for products endowed with individual characteristics due to specific production methods, composition or origin (national or geographic; Anon, 2004).

No matter how professional and effective a company may be, there is always the possibility of a serious problem arising which is unforeseen or eventually develops into a major crisis. However, thinking through the possible ramifications of such an eventuality and preparing responses and scenarios to deal with it, always ensures that an organization is better prepared for the unexpected (Doeg, 1995). The HACCP system is a science-based system created to identify specific hazards and actions to control them in order to ensure food safety and quality. It can be considered an efficient tool for both the food industry and health authorities in preventing food borne diseases (Vela and Fernandez, 2003). A 'hazard' is 'a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect' (Codex Alimentarius, 1997). A HACCP system should be developed for every food production line and adapted for the individual products and processes (da Cruz et al., 2006). HACCP systems have become

mandatory for food industry in the European Union (European Community Directive, 1993).

Food complaints fall into seven broad categories within which there are a number of possible subcategories:

1. A complaint from a consumer:

Food complaints fall into four broad categories:

(i) Foreign objects found in food or food not meeting the consumers' expectations.

(ii) Poor food premises conditions.

(iii) Poor food handling practices.

(iv) Alleged cases of food poisoning.

2. A complaint from the regulatory authorities:

(a) Often instigated by a complaint from consumers and falling into the same broad sub-categories as given above.

(b) As a result of routine monitoring and premise visits.

(c) As a result of investigations into events such as outbreaks of 'food poisoning'.

3. A phone call from the police for example, warning of:

(i) An incidence of food poisoning in the area.

(ii) Detection of 'food fraud'.

(iii) Malicious action or intended action against the company or its products.

4. A threatening message direct to the company as per 3 (iii) above

HACCP and ISO 22000 – Application to Foods of Animal Origin.

5. An enquiry from the media.

6. The knock-on effect of a problem in another country.

7. An industry issue, such as the use of an ingredient (Doeg, 1995).

To be effective, a food safety management system (FSMS) as exemplified by HACCP and mandatory under 2001/471/EC requires monitoring and control (of critical limits) of those process stages deemed critical to food safety. These process stages, identified as critical control points (CCPs), should be monitored and all non-compliances immediately corrected by removing the offending material, by re-skilling staff and by rectifying identified process or equipment faults (Ryan, 2007). HACCP procedures should be documented at all times. Record keeping is essential for providing documentation to the HACCP system and to verify the proper functioning of the system. Documentation and record keeping examples are given in Codex Alimentarius (2001).

Consumer awareness of the benefits that the HACCP approach provides is absolutely essential for effective implementation of HACCP programs.

What should been avoided is a consumer's misconception that HACCP represents only an extension of industry self-certification programs without food authority control over the process (Kvenberg, 1998). HACCP systems are often seen as unnecessary, burdensome and bureaucratic in the food industry. They are often ineffective because the premise of the system is not emphasized. HACCP was intended to be 'a minimalist system that ensures maximum control'. It is important that employees understand its many benefits, including reduced waste and downtime. The system can become overly complicated due to a lack of internal knowledge of microbiological and toxicological issues, forcing those involved to seek advice from outside sources (Mortimore, 2003). A study revealed that in companies with less than 50 employees, HACCP implementation decreased proportionally as the number of employee has decreased (Panisello et al., 1999).

An analysis of the barriers to HACCP implementation which include availability of appropriate training in HACCP methodology, access to technical expertise and the required resources (infrastructure and personnel) is available.

The burden that these places on the small business are documentation, validation and verification (Taylor, 2001).

2.1.6.2 History of HACCP

The acronym HACCP is one that evokes 'food safety'. Originally developed to ensure microbiological safety of foodstuffs, HACCP has been broadened to include chemical and physical hazards in foods.

The recent growing worldwide concern about food safety amongst public health authorities, consumers and other concerned parties, fuelled by the continuous reports of food borne 'disease' outbreaks have been a major impetus in the introduction and widespread application of the HACCP.

HACCP is merely a tool and is not designed to be a stand-alone program.

To be effective, other tools should include adherence to good manufacturing practices (GMPs), use of standard sanitation operating procedures and personal hygiene programs (Rushing and Ward, 1999).

The HACCP system for managing food safety concerns grew from two major developments. The first breakthrough was associated with W.E. Deming, whose theories of quality management are widely regarded as a major factor in turning around the quality of Japanese products in the 1950s. Dr. Deming and others developed Total Quality Management (TQM) systems, which emphasized a total systems approach to manufacturing that could improve quality while lowering costs (FAO, 1998). The second breakthrough was the HACCP proposal by the Pillsbury Company, NASA and the US Army laboratories. This was based on the failure, mode and effect analysis (FMEA) as used by engineers in construction designs.

The HACCP concept was introduced in the United States in 1971 at the Conference of Food Protection where it was 'recommended for widespread use'.

The call for change was galvanized in the early 1990s with a tragic outbreak of Escherichia coli O157:H7 food borne illness in the Northwest of the United States. Four children died and hundreds of people were taken ill in this outbreak, which resulted from the consumption of undercooked, contaminated ground beef. Food Safety and Inspection Services (FSIS) developed the regulatory proposal that became the Pathogen Reduction/HACCP Systems Rule (published as a final rule in 1996; Hulebak and Schlosser, 2002). Subsequently, as a means of safe food

production, HACCP principles were adopted worldwide as given in Codex Alimentarius Commission (1997) and the National Advisory Committee on Microbiological Criteria for Foods (NACMCF, 1992).

HACCP became a mandatory program for approximately 4000 seafood processors in December 1997 and for foreign processors that ship seafood to the United States (FDA, 2001). The following month, in January 1998, the USDA's Food Safety and Inspection Service (FSIS) began implementing HACCP in the meat and poultry industry.

Fig. (2.1): The seven principles of HACCP program.

Source: http://www.iso.org

2.1.7 ISO 22000

2.1.7.1 Introduction to ISO 22000

ISO 22000 is the new international generic FSMS standard for food safety management systems. It defines a set of general food safety requirements that apply to all organizations in the food chain.

Recognized worldwide, this universal standard harmonizes key requirements and overcomes the difficulties of various food safety standards by region, country, activity, organization and food-type. If an organization is part of the food chain, ISO 22000 requires the establishment of a food safety management system (FSMS) and usage of this system to ensure that food products do not cause adverse human health effects.

The requirements of ISO 22000 can be applied to all types of organizations within the food chain ranging from feed producers, primary producers, food manufacturers, transport and storage operators, subcontractors to retail and food service outlets, together with inter-related organizations such as producers of equipment, packaging materials, cleaning agents, additives and ingredients.

Organizations are cognizant of the need to demonstrate and provide evidence of their ability to provide safe food. ISO 22000 will help these organizations to establish an FSMS and implement it in the food plant with proper improvement and update of the FSMS system. This standard promotes conformity of products and services to international standards by providing assurance about quality, safety and reliability.

The ISO 22000 standard intends to define the food safety management requirements that companies need to meet and exceed in order to comply with food safety regulations all over the world. It is intended to be one standard that encompasses the entire consumer and market needs. It speeds and simplifies processes without compromising other quality or safety management systems.

ISO 22000 uses generally recognized methods of food safety management such as interactive communication across the food chain, system management, control of food safety hazards through PRPs and HACCP plans, and continual improvement as well as periodic updating of the management system.

Furthermore, the requirement of Emergency preparedness and response plan of ISO 22000 is also a basic requirement of ISO 14001 that is the worldwide Environmental Management System (EMS; Culley, 1998). This standard has many elements in common with ISO 9001, it has its roots in BS 7750 (Quality Standard), and it is related to Eco-Management and Audit Regulation (EMAR). One of the strengths of ISO 14001 is that it is not a performance standard.

It does not specify how the requirements of any section should be satisfied, nor does it specify levels of environmental performance that an organization should achieve (Ritchie and Hayes, 1998).

The standard has become necessary because of the significant increase of illnesses caused by infected food in both developed and developing countries. In addition to the health hazards, foodborne illnesses can give rise to considerable economic costs including medical treatment, absence from work, insurance payments and legal compensation. As a result, a number of countries have developed national standards for the supply of safe food and individual companies and groupings in the food sector have developed their own standards or programs for auditing their suppliers.

While ISO 22000 can be implemented on its own, it is designed to be fully compatible with ISO 9001:2000.

Fig. (2.2): The nine principles of ISO 22000.

Source: http://www.iso.org
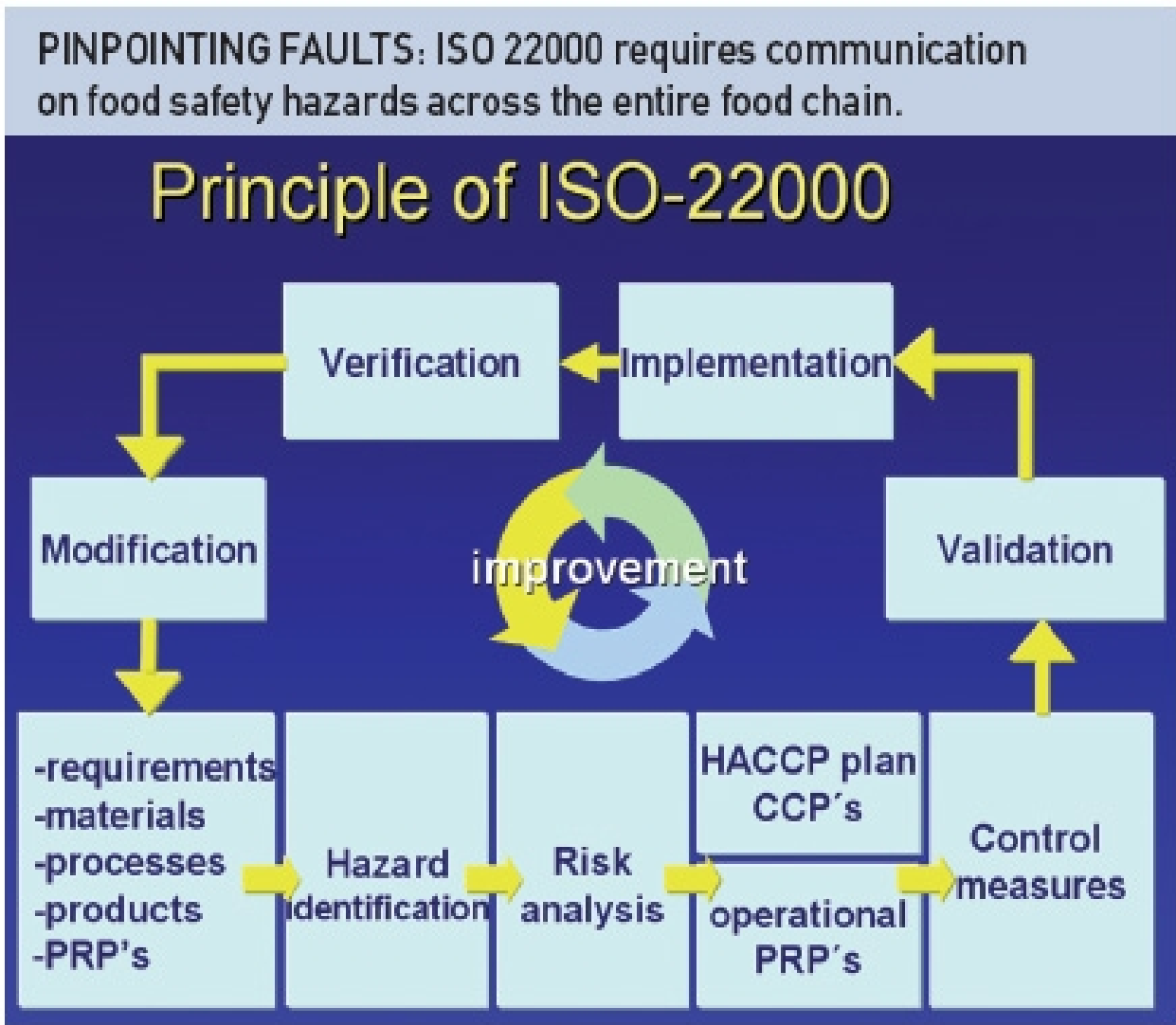
2.1.7.2 ISO 22000 Food Safety Management System in Beverage Industries

The hazards that cause food-related illnesses and how these hazards can be prevented in the food and beverage companies are both globally known. Today, food safety management system and practices stand out as the most prominent method of safe food production. Companies that implement systems such as the HACCP or ISO 22000 FSMS attain success in safe food production (Kocak, 2010).

The presence of communication all along the food chain is necessary to be able to identify all hazards related to food safety and to ensure sufficient control in every stage. The hazards and control measures defined in communication with consumers and suppliers will help generate requirements for the benefit of both consumers and suppliers (such the requirement for an expiration date and a label on the final product). It is also necessary for a company to know its role and position in the food chain to be able to deliver safe food products to the final consumers and to establish an effective communication with them (Gok, 2010). Consumer demand for safer food production is increasing. This demand led to the formation and development of various standards. It is important to have an international harmony in order to avoid confusion about such standards. This is exactly the need that the ISO 2000 FSMS aims to meet (Bucak, 2011).

The ISO 22000, which was prepared by the ISO and published in September 2005, is the first international standard published as a "Food Safety Management System".

One of the most important reasons why the ISO 22000 standard was published was to bring together the multiple standards of food safety (such as the HAACP or IFS) under a single rubric (Seng, 2007).

2.1.8 Marketing Food Safety

In 2006, 205 people in the U.S were sickened and 3 died in an E. coli O157:H7 outbreak linked to baby spinach grown in California. In the aftermath, both the Food and Drug Administration (FDA) and California's Department of Health Services conducted extensive investigations into the outbreak to determine how

leafy green produce could become contaminated with a microorganism normally found in the stomach of animals.

While investigators were able to successfully track the contaminated spinach to one specific field in California, and identify potential health risks such as the presence of cattle feces and wild pigs, the investigators had less success identifying the exact method by which E. coli contamination had occurred.

In response, California, the largest producer of leafy green vegetables in the nation with roughly a 75 percent market share, created its own statewide Leafy Green Marketing Agreement. Arizona, the second largest producer of leafy green vegetables with roughly a 15 percent market share, followed suite creating its own statewide program in September of 2007.

Unfortunately, despite the widespread adoption of these voluntary programs at the state level, food borne illnesses linked to leafy green vegetables continue to be a problem across the country. In 2010, E. coli-tainted romaine lettuce was recalled in 23 states after 19 people became seriously ill in Ohio, New York and Michigan.

In response to industry interest, the U.S. Department of Agriculture's Agriculture Marketing Service (AMS) published an Advance Notice of Proposed Rulemaking (ANPR) on Oct. 4, 2007 to explore the idea of implementing a national marketing agreement focused on reducing microbial contamination in leafy green vegetables.

AMS received more than 3,500 public comments on the ANPR. On June 10, 2009, the agency received a petition for rulemaking and a request for a public hearing on a proposed National Leafy Green Marketing Agreement (NLGMA). The proposed marketing agreement was submitted to AMS "by a group of producers, handlers, and interested persons representing a cross-section of the national fresh and fresh-cut produce industry."

This initial proposal was designed to operate in a similar manner to voluntary marketing agreements previously implemented in California and Arizona following the 2006 outbreak.

2.1.9 Marketing Orders and Agreements

The Agricultural Marketing Agreement Act of 1937 (codified at 7 U.S.C. Chapter 26A) provides authority for federal marketing orders administered by the USDA. Under the supervision of the AMS, marketing orders have currently been established for milk as well as numerous fruits, vegetables, and other specialty crops. Not counting milk and the latest NLGMA proposal, there are currently 32 active marketing orders and agreements.

Marketing orders and agreements provide legal tools for agricultural producers, aggregators, processors, manufacturers, and retailers to work together to mitigate financial turmoil in the supply chain. A new marketing order or agreement must be developed by industry representatives, and then proposed to the AMS. The agency will then hold a public hearing and take public comments prior to making a final decision on whether to proceed with a rulemaking.

Prior to a proposed program being implemented, the regulation must be approved in a referendum by a two-thirds or larger majority of producers. Once a marketing order or agreement is approved, local committees appointed by the Secretary of Agriculture provide administration of the program.

Marketing orders and agreements are binding on all "handlers" in the geographic area covered by the order. In general, a handler is anyone who receives the commodity from producers, and is responsible for grading, packing, transporting, or placing the farm products into commercial channels.

Marketing orders are distinguished from marketing agreements, in that marketing agreements are binding only on handlers who are signatories of the agreement. Handlers must comply with the grade, size, quality, volume, and other requirements established under the specific program.

2.2 Previous Studies

2.2.1 Application of Food Safety Management Systems (ISO 22000/HACCP) in the Turkish Poultry Industry.

Author: Kök, M. Samil

Abstract

The objectives of this study were to determine the extent of food safety management systems (ISO 22000/HACCP) implementation in the Turkish poultry industry. A survey was conducted with 25 major poultry meat producers, which account for close to 90% of national production, and a comparison was made between the procedures of small-to-medium enterprises (SMEs) and large firms (LFs). The survey revealed that there is a high level of application of ISO 22000 (72%), which is seen to aid the export market. LFs were shown to adopt more stringent schemes and make better use of governmental support services than SMEs. LFs were also more aware of, and able to deal with, risks from a greater range of contaminants.

2.2.2 Implementation of ISO 22000 in cereal food industry "SMID" in Tunisia.

Corresponding author. SMID: Société des Minoteries ET Industries Diverse Sousse, Z.i. Sidi Abdelhamid - 4061, Sousse Ibn Khaldoun Sousse 4000, Tunisia.

Abstract

Cereal products (flour and semolina) are of great importance in the Tunisian diet. Over one million tons of cereal (soft and hard wheat) are consumed a year. Bread, pasta and couscous are the main forms of cereal consumption providing more than 70% of dietary proteins. The SMID, a wheat grinding company has implemented the ISO 22000 system involving essentially the prerequisite programs (PRPs) and the HACCP principals. The objective of this study is to determine food safety practices and procedures related to the food safety management system (ISO 22000). The PRPs were identified to prepare for the HACCP.

2.3 About DFI (DAL Food Industries) and Coca Cola Company

DFI is a dynamic, international and cosmopolitan company bringing refreshment and enjoyment to the people of Sudan wherever they live, work, study or play. Their mission is also about adding value and happiness to both the communities in which they operate and to the lives of the many who enjoy their truly great brands.

In 2002, DAL Food Industries became the sole bottler and distributor of The Coca-Cola Company brands in the Sudan and the industry-leader in beverage production nationwide. DFI's advanced-design beverage plant in Khartoum North extends over a 15-acre plot and utilizes the latest global best-in-class technologies and production methods. It is one of the most modern and highly advanced of all Coca-Cola bottling plants across the African continent and the Middle East, setting a new benchmark for the industry.

The establishment of DFI has transformed Sudan's beverage industry. DFI provides refreshment to all parts of the country through an ever-increasing depot infrastructure, and the first to introduce value packs on a national scale, giving consumers everywhere the opportunity to purchase products of global quality standards and exceptional value for money.

High operating standards are a way of life at DFI. From the stringent control measures that govern its products, to the working environment that inspires the staff, there is no compromise on quality.

In a very short time, DFI grew from zero market-share to being a leading player. This unprecedented achievement in the industry was only the beginning of what has anticipated. Today DFI has consolidated this achievement by continuing to raise standards and set new innovative trends, which keep the company at the forefront of the Sudanese beverage industry.

DFI has also made a heavy investment in refrigeration by supplying retail customers with coolers to ensure the convenient availability of ice-cold beverages for consumers.

'Transparency' defines DFI's core values, being the only company in the region that invites the public to visit and actually see its modern facilities producing all the familiar products those consumed every day.

The Coca Cola Company has no foreign direct investment in Sudan, nor does it do any business with the Government of Sudan. The Company sells beverage base to a private company, DAL Foods Industries, Ltd. (DFI), under a license approved by the U.S. Government's Office of Foreign Assets Control (OFAC).

The situation in the Sudan is complicated and tragic, and the Company is limited in its ability to have a positive impact in that country.

The Company has given $750,000 to the Red Cross and Red Crescent to provide humanitarian relief to people in communities in Darfur who have been displaced or been victims of violence in that region's long-standing conflict. The funds will provide:

- Primary healthcare, including immunizations and malaria prevention

- Children's healthcare, including feeding centers

- Food and supplies such as blankets, tarpaulins and kitchen sets

- Water and sanitation facilities

The Coca-Cola Company is committed to the African continent and has long been in the forefront of promoting sustainable development throughout the continent. The Coca-Cola Company, together with independent bottlers, provides direct employment for 60,000 workers across the continent in its bottling, distribution and marketing operations. As a result, many more jobs were created in retailing, supply and support operations. In the past five years alone, the Company has invested more than $600 million across Africa. Its beverage products been made at 160 facilities and sold in partnership with more than 900,000 retail outlets.

CHAPTER THREE

MATERIALS AND METHODS

Materials and Methods (Methodology)

This research concern with filed study and method adopted for the case study therefore the method used this research is questionnaires.

In this chapter, method of data collection, questionnaire, data analysis, statistical instruments, research limitations, data measurements and population of sample of the study will be illustrated.

3.1 Research strategy

As defined by Yin (2003), a case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context especially when the boundaries between phenomenon and concept are not evident.

According to Yin (2003) "a case study as a research strategy is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena". Case studies are one of several ways of doing social science research; other ways include experiments, surveys, histories and the analysis of archival information.

The research work starts out with stating the choice of the research topic, the aim of the research, next, methods used for data collection and the type of data collected: primary and secondary (qualitative and quantitative data) will be described. From the results or findings of the primary and secondary data, the researcher would make an analysis in relation to the theory used and draw his conclusions.

3.2 The Aim of the research

According to Yin (2003:10), "the goal in making case studies is not to make generalizations on populations or universes or to enumerate frequencies (statistical generalizations) but to expand and generalize theories (analytic generalizations)". As stated in the purpose, this research is aiming to measure the impact of implementing Food Safety Management System (ISO 22000)on marketing; the case under study was Coca Cola Company(Sudan). The researcher hope to achieve this by collecting data and analyzing questionnaires for employees who were responsible for quality and sales departments.

3.3 Method of data collection

According to most literature on research methods in collecting data, Yin (2003),Strauss et al (1998), Fisher (2007) a researcher can choose between two methods; the quantitative and the qualitative. While the quantitative method has more to do with measurements and figures, the qualitative is more about descriptions and opinions. The quantitative and qualitative methods had been used in this study.

The researcher has used both the primary and secondary data for the purpose of this research.

3.4 Questionnaires

For studying and identifying the impact of implementing Food Safety Management System on marketing in Coca Cola, 50 questionnaire were distribute among the employees.

The total numbers of respondents were 50, the respond rate is 100% the questionnaire contain 19 statements.

3.5 Data Analysis

Data analysis for questionnaires and test of its hypotheses was done. The instruments of applied study, which contain the description of the study's population and its sample, method of collection data, reliability and validity of the study tool, and the statistical treatments that used the methodology of the study will be shown here.

3.6 Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there are an appropriate methods that can be applied and not others. For the purpose of the study, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (0, 1, 2) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

Table (3.1): Likert scale

Item	Neutral	Agree	Disagree
Scale	0	1	2

Source: researcher

3.7 Population and Sample of the Study

As previously, mention the original population for this study was the employees of quality and sales departments. Fifty candidates were involved with the questionnaire process.

3.8 Statistical Instruments

In order to satisfy the study objectives, to test its hypotheses, the researcher use Frequency distribution, and In order to obtain accurate results, Statistical Package for Social Sciences (SPSS) was used.

3.9 Research Limitations

The limitation of this research was Coca Cola Company (Sudan); the study is further delimited to the extent of the Impact of implementing Food Safety Management System (ISO 22000)on marketing.

CHAPTER FOUR
ANALYSIS &
RESULTS

Analyses and Results

In This chapter analysis and results, analysis from primary data (questionnaires) will be shown and results will be interpreted.

4.1. Gender

Table (4.1): percentage of male and female

		Frequency	Percent
Valid	Male	39	78.0
	Female	11	22.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.1): percentage of male and female
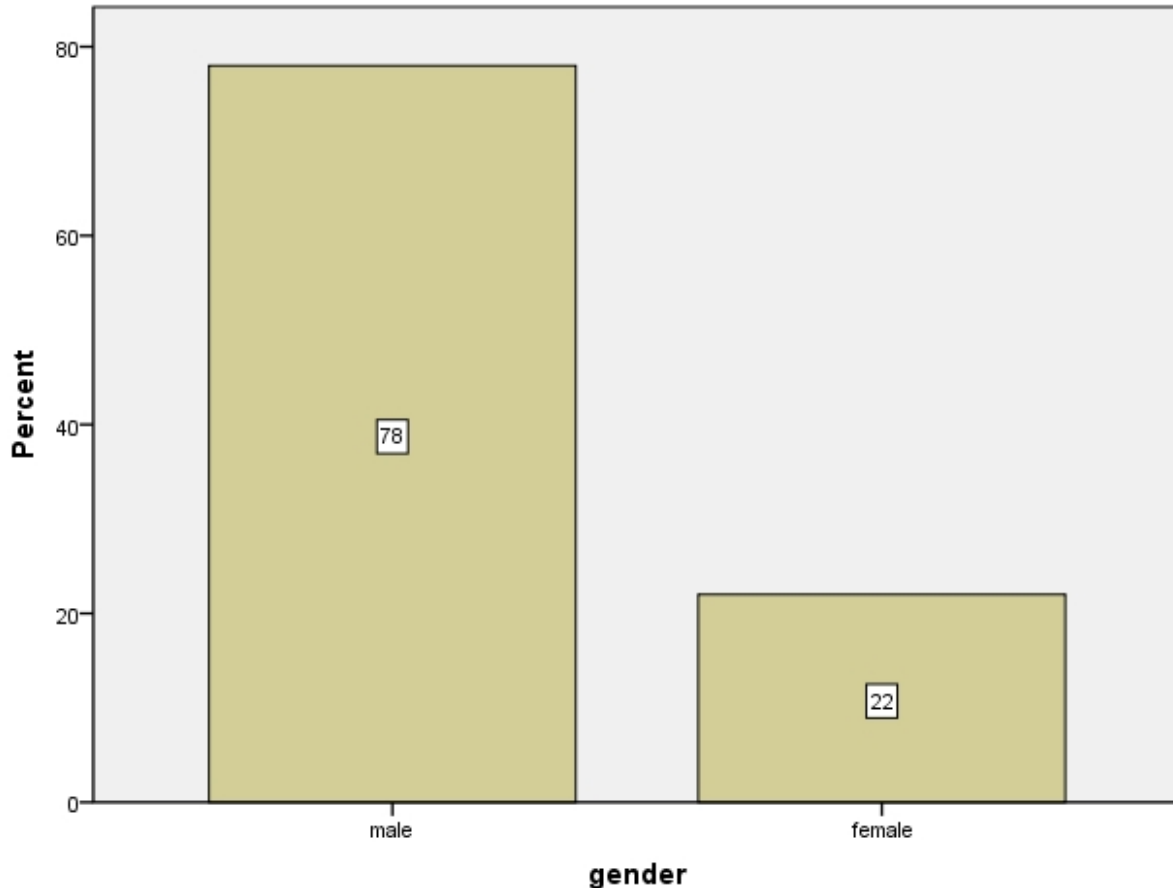
Source: prepared by researcher, using SPSS, 2016

Table (4.1) and fig. (4.1) shows that 78 % of the sample are male and 22% are female.

4.2 Frequency test

4.2.1 Hypothesis no. (1)

There is no relationship between ISO 22000 and marketing.

Q1: The reason that more customers' turnout to company's products is the application of food safety management system ISO 22000.

Table (4.2): The reason that more customer's turnout to company's products is the application of food safety management system ISO 22000

		Frequency	Percent
Valid	Neutral	15	30.0
	Agree	35	70.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.2): The reason that more customer's turnout to company's products is the application of food safety management system ISO 22000.

Source: prepared by researcher, using SPSS, 2016
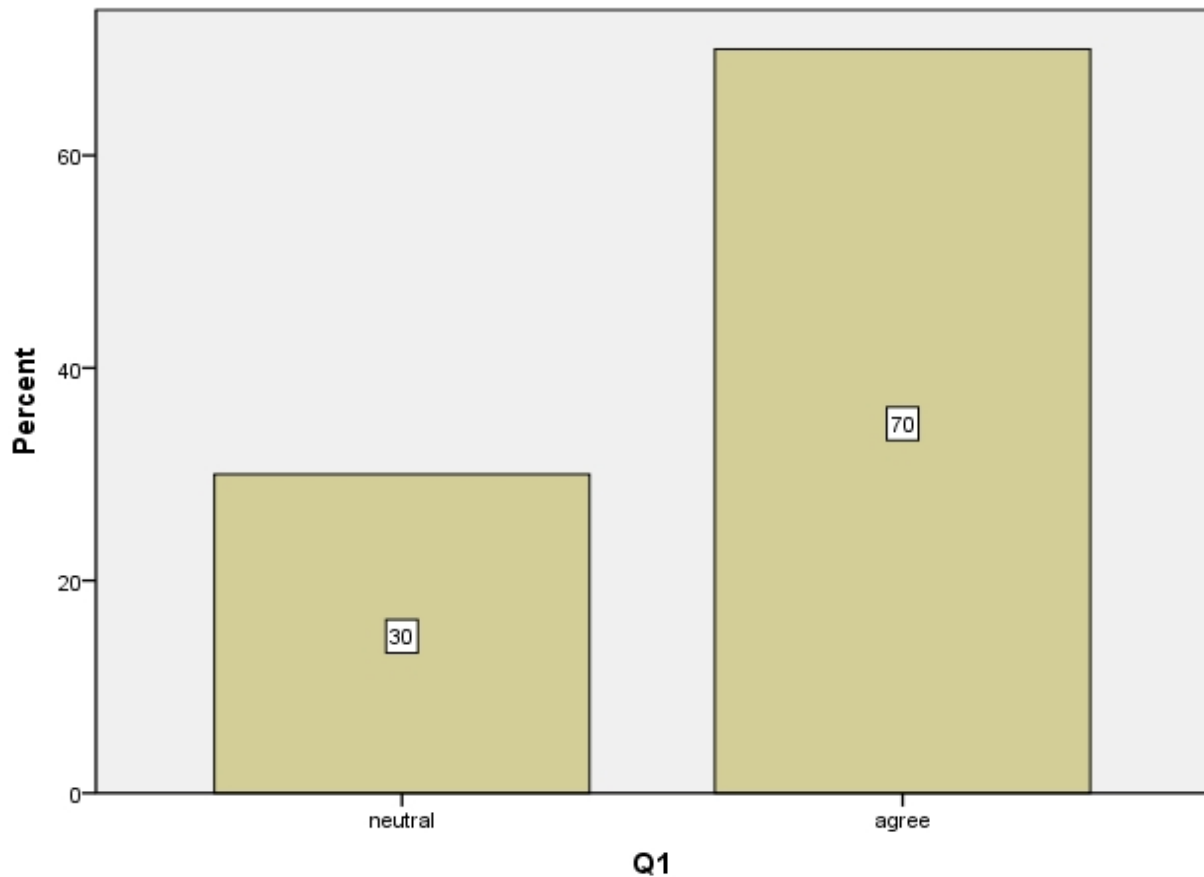
Table (4.2) and fig. (4.2) shows that 70% of the employees agree with that the reason that more customer's turnout to company's products is the application of food safety management system ISO 22000, and 30% are neutral.

Q2:Customer's turnout to company's products increased after the application of food safety management system.

Table (4.3): Customer's turnout to company's products increased after the application of food safety management system.

		Frequency	Percent
Valid	Neutral	13	26.0
	Agree	37	74.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

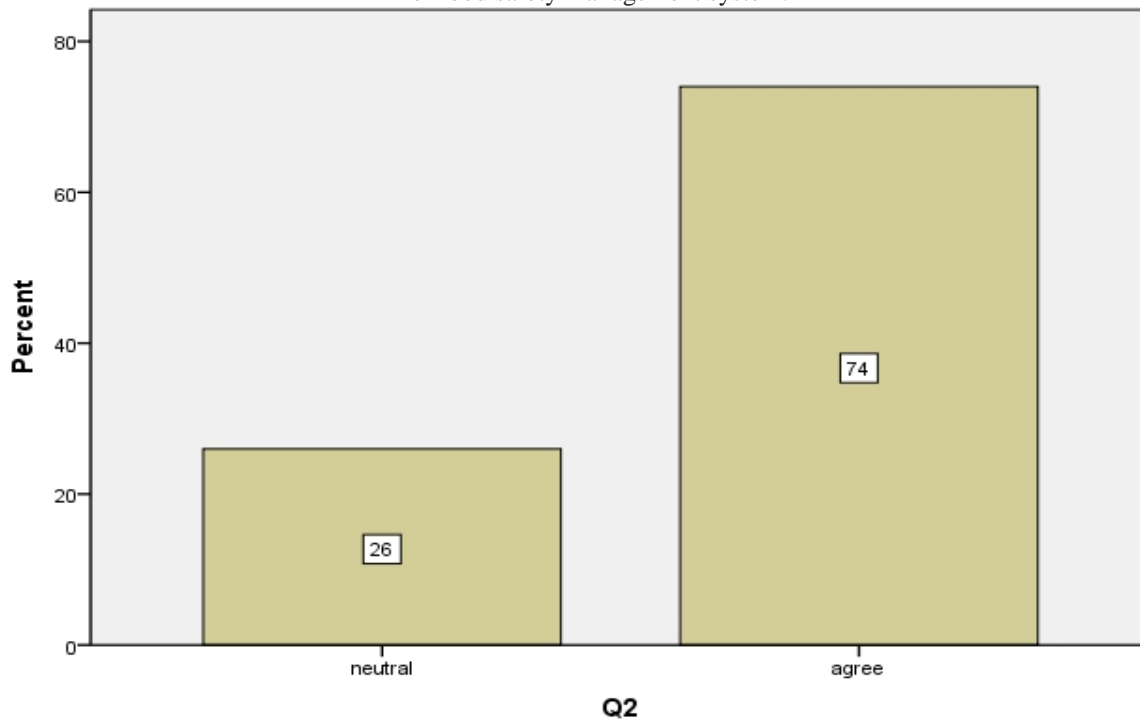**Fig. (4.3):** Customer's turnout to company's products increased after the application of food safety management system.

Source: prepared by researcher, using SPSS, 2016

Table (4.3) and fig. (4.3) shows that 74% of the employees agree with that customer's turnout to company's products increased after the application of food safety management system, and 26% are neutral.

Q3: After the application of food safety management system, the proportion of sales of the company's products has increased.

Table (4.4): After the application of food safety management system, the proportion of sales of the company's products has increased.

		Frequency	Percent
Valid	Neutral	2	4.0
	Agree	48	96.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.4): After the application of food safety management system, the proportion of sales of the company's products has increased.

Source: prepared by researcher, using SPSS, 2016
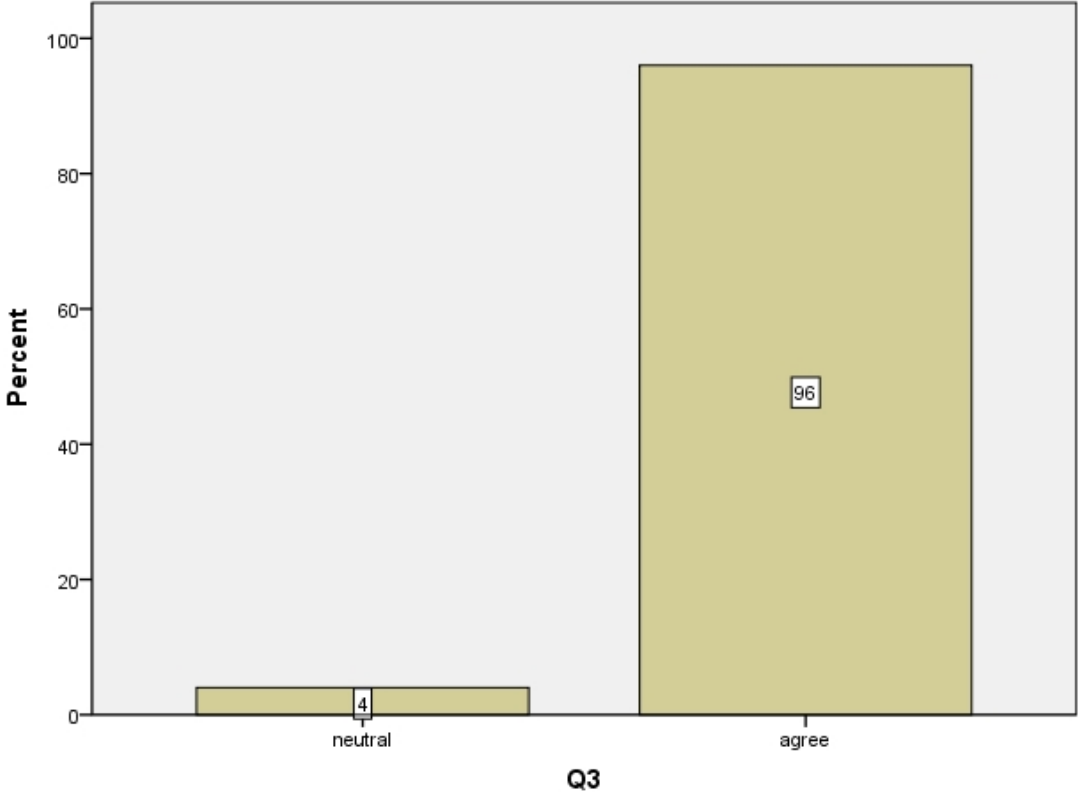
Table (4.4) and fig. (4.4) shows that 96% of the employees agree with that after the application of food safety management system, the proportion of sales of the company's products has increased, and 4% are neutral.

Q4: There are certain areas where the demand has increased which shows the awareness of customers there.

Table (4.5): There are certain areas where the demand has Increased which shows the awareness of customers there.

		Frequency	Percent
Valid	Neutral	16	32.0
	Agree	34	68.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.5): There are certain areas where the demand has increased which shows the awareness of customers there.
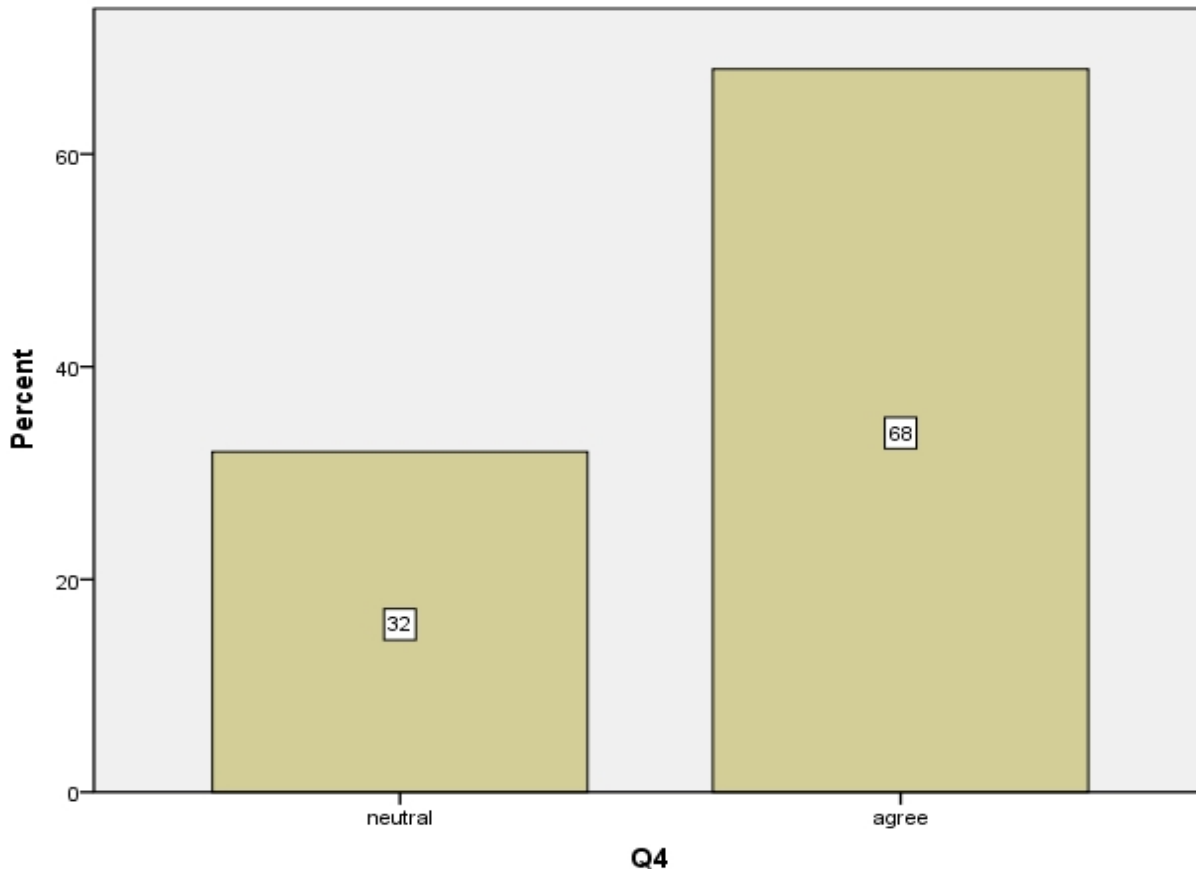
Source: prepared by researcher, using SPSS, 2016

Table (4.5) and fig. (4.5) shows that 68% of the employees agree with that there are certain areas where the demand has increased which shows the awareness of customers there, and 32% are neutral.

4.1.2 Hypothesis no. (2)

There is no impact of ISO 22000 on customer satisfaction.

Q5:Customer satisfaction is a fundamental value of the company and all employees.

Table (4.6): Customer satisfaction is a fundamental value of the company and all employees

		Frequency	Percent
Valid	Neutral	5	10.0
	Agree	45	90.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.6): Customer satisfaction is a fundamental value of the company and all employees

Source: prepared by researcher, using SPSS, 2016

Table (4.6) and fig. (4.6) shows that 90% of the employees agree with that customer satisfaction is a fundamental value of the company and all employees, and 10% are neutral.
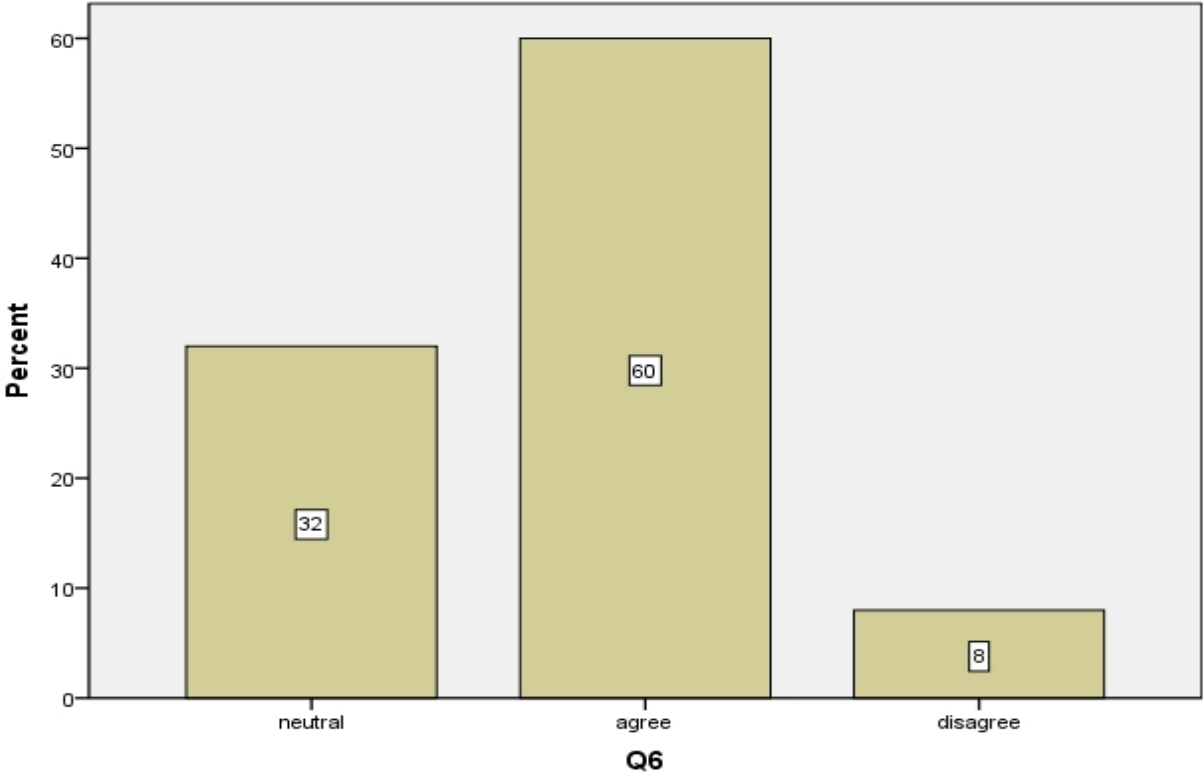
Q6:The Company's management is keen to provide good services to internal clients (employees).

Table (4.7): The Company's management is keen to provide Good services to internal clients (employees)

		Frequency	Percent
Valid	Neutral	16	32.0
	Agree	30	60.0
	Disagree	4	8.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.7): The Company's management is keen to provide good services to internal clients (employees)

Source: prepared by researcher, using SPSS, 2016

Table (4.7) and fig. (4.7) shows that 60% of the employees agree with that the company's management is keen to provide good services to internal clients (employees),32% are neutral, and 8% are disagree.

Q7:Company's management is working to conduct surveys to identify the needs of customers.

Table (4.8): Company's management is working to conduct surveys to identify the needs of customers

		Frequency	Percent
Valid	neutral	19	38.0
	agree	31	62.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.8): Company's management is working to conduct surveys to identify the needs of customers
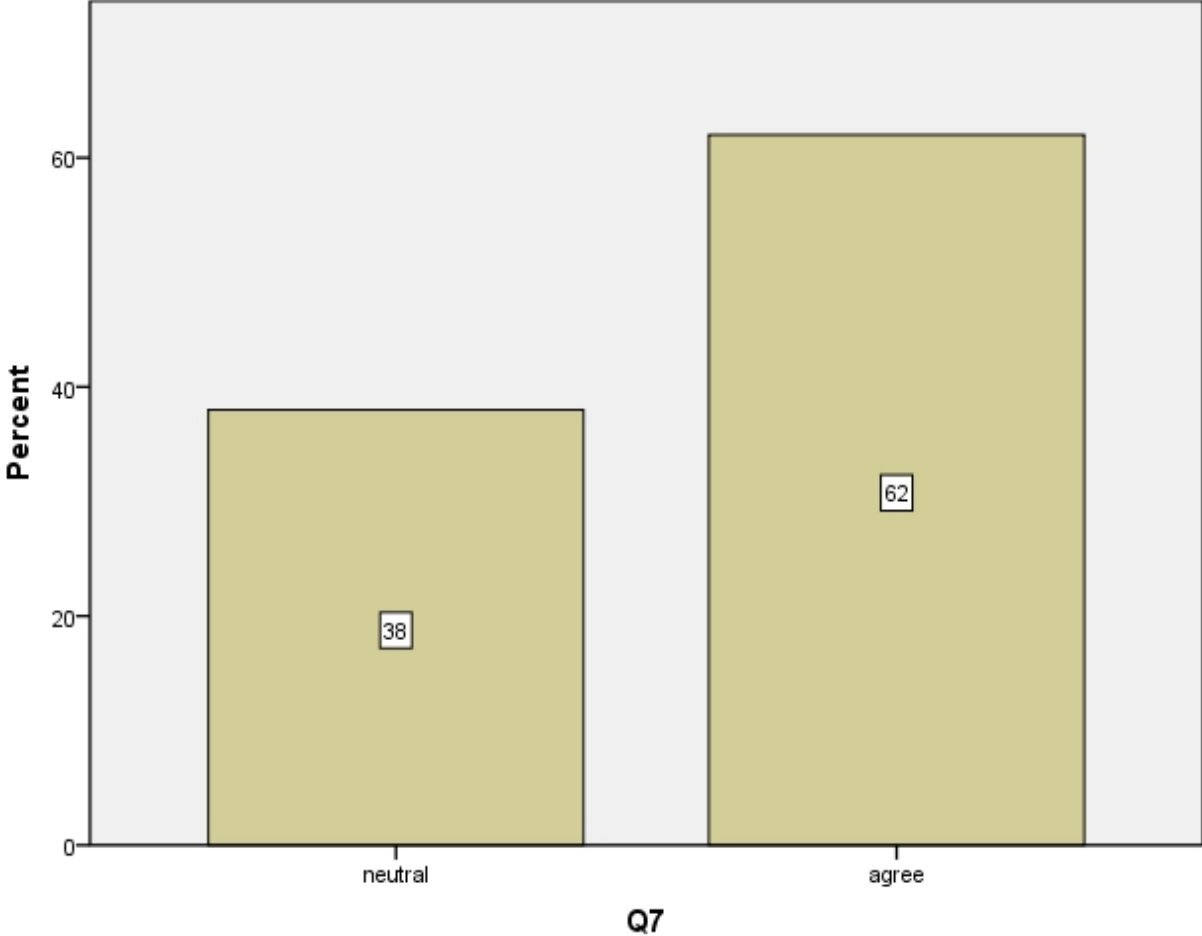
Source: prepared by researcher, using SPSS, 2016

Table (4.8) and fig. (4.8) shows that 62% of the employees agree with that company's management is working to conduct surveys to identify the needs of customers, and32% are neutral.
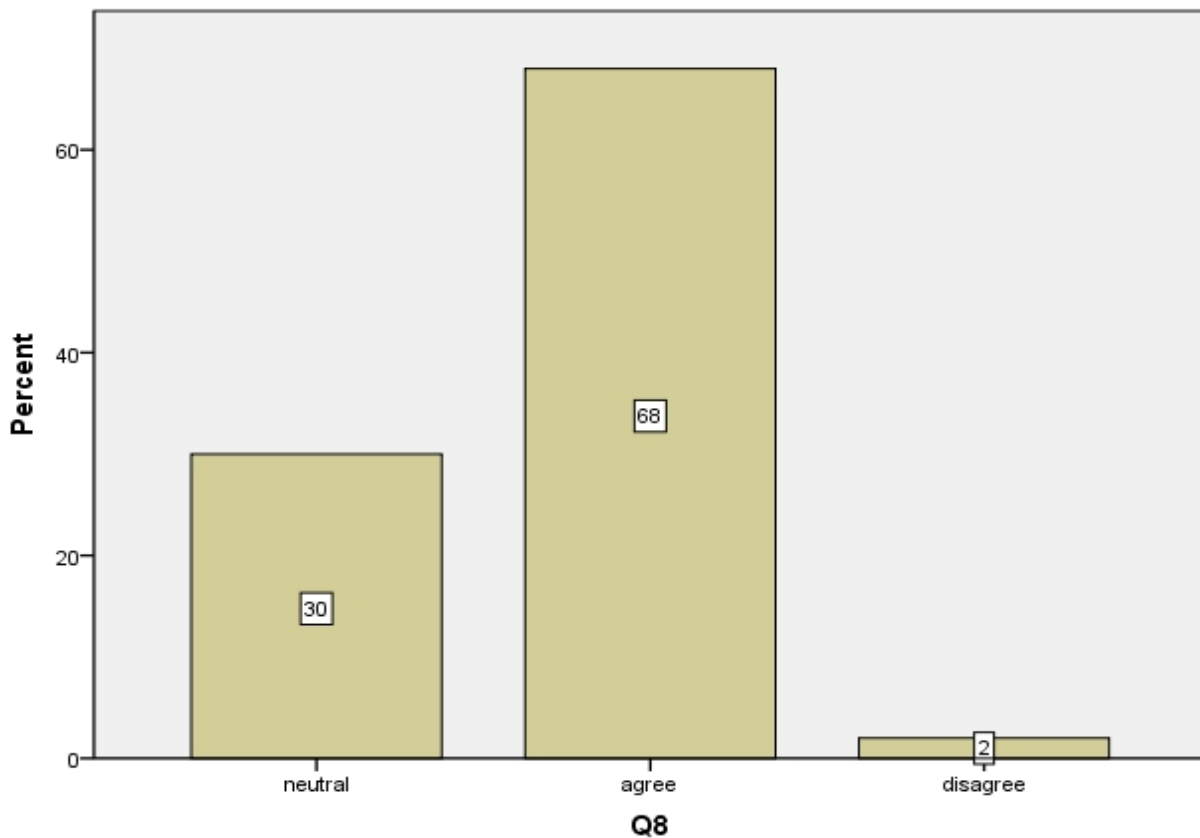
Q8:Customers' complaints decreased after the application of food safety management system.

Table (4.9): Customers' complaints decreased after the application of food safety management system

		Frequency	Percent
Valid	neutral	15	30.0
	Agree	34	68.0
	disagree	1	2.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.9): Customers' complaints decreased after the application of food safety management system

Source: prepared by researcher, using SPSS, 2016

Table (4.9) and fig. (4.9) shows that 60% of the employees agree with that customers' complaints decreased after the application of food safety management system, 30% are neutral,and 2% are disagree.
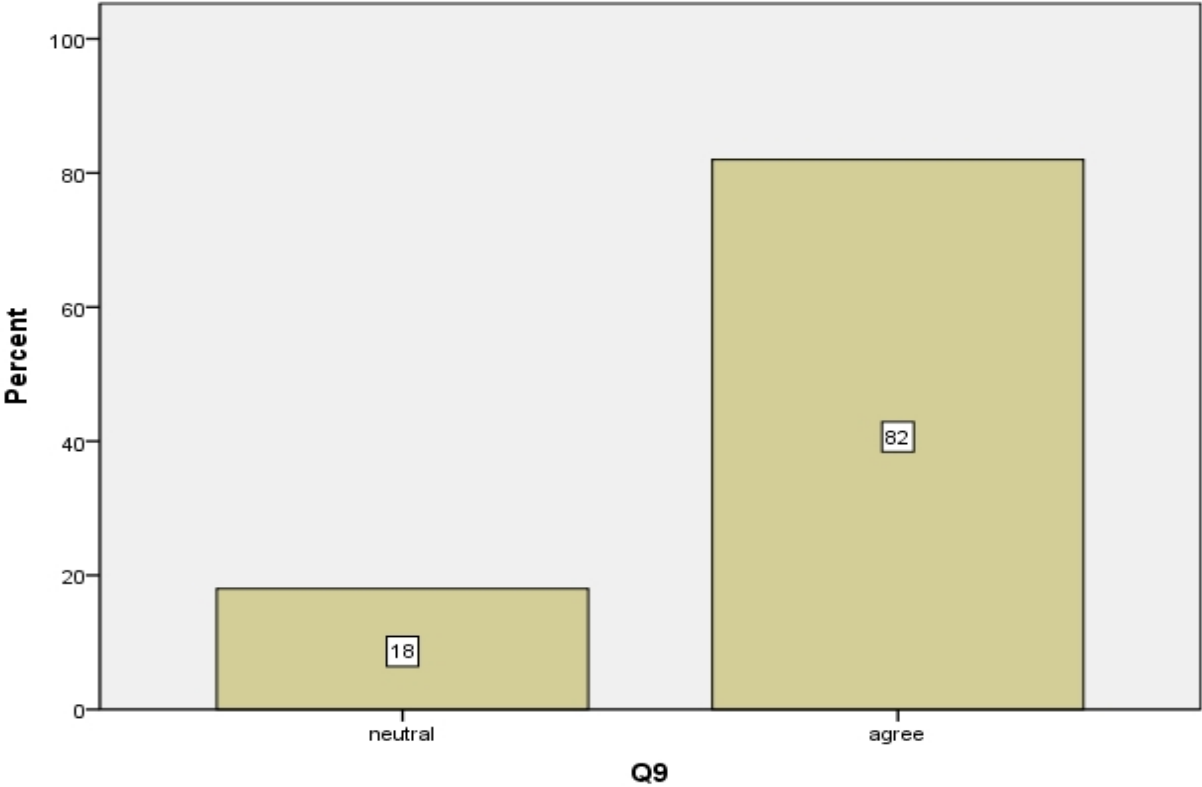
Q9: The Company's management keen to listen to the problems of customers and working to solve them.

Table (4.10): The Company's management keen to listen to
the problems of customers and working to solve them

		Frequency	Percent
Valid	Neutral	9	18.0
	Agree	41	82.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig. (4.10): The Company's management keen to listen to the problems of customers and working to solve them

Source: prepared by researcher, using SPSS, 2016

Table (4.10) and fig. (4.10) shows that 82% of the employees agree with that The Company's management keen to listen to the problems of customers and working to solve them, and 18% are neutral.

4.1.3 Hypothesis no. (3)

There is no impact of ISO 22000 on the quality of products.

Q10: Food safety management system has helped to improve the products produced by the company.

Table (4.11): Food safety management system has helped to improve the products produced by the company

		Frequency	Percent
Valid	neutral	6	12.0
	Agree	44	88.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.11): Food safety management system has helped to improve the products produced by the company
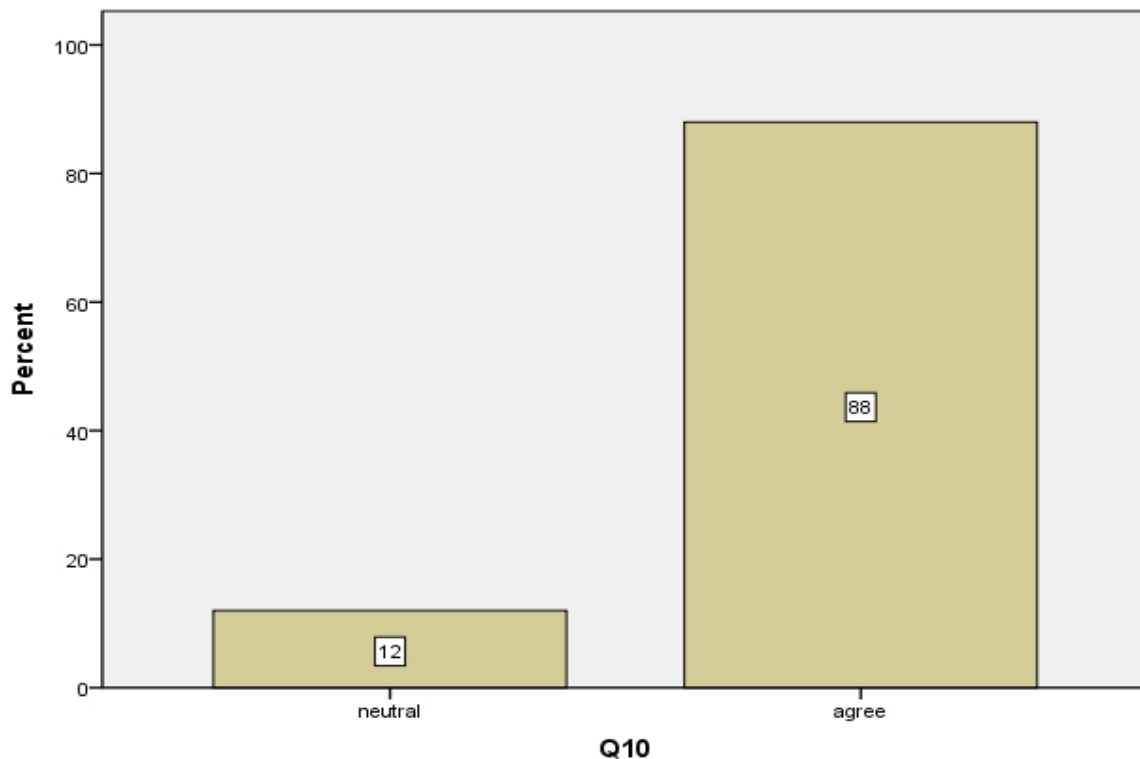
Source: prepared by researcher, using SPSS, 2016

Table (4.11) and fig. (4.11) shows that 88% of the employees agree with that food safety management system has helped to improve the products produced by the company, and 12% are neutral.
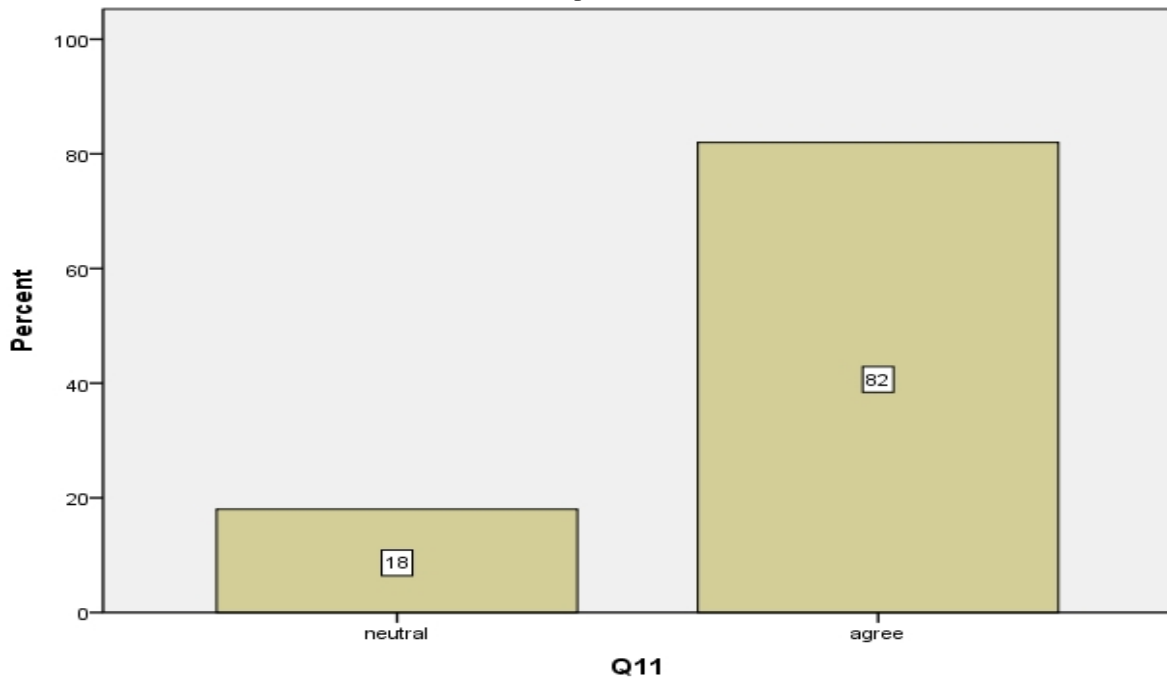
Q11: The Company issue a tracking system allowing easy monitoring of raw materials coming from the suppliers and the products, for the purpose of the process of withdrawing from the market when a problem occurs to the product.

Table (4.12):The Company issue a tracking system allowing easy monitoring of raw materials coming from the suppliers and the products, for the purpose of the process of withdrawing from the market when a problem occurs to the product

		Frequency	Percent
Valid	neutral	9	18.0
	Agree	41	82.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

fig.(4.12):The Company issue a tracking system allowing easy monitoring of raw materials coming from the suppliers and the products, for the purpose of the process of withdrawing from the market when a problem occurs to the product

Source: prepared by researcher, using SPSS, 2016

Table (4.12) and fig. (4.12) shows that 82% of the employees agree with that the Company issue a tracking system allowing easy monitoring of raw materials coming from the suppliers and the products, for the purpose of the process of withdrawing from the market when a problem occurs to the product, and 18% are neutral.
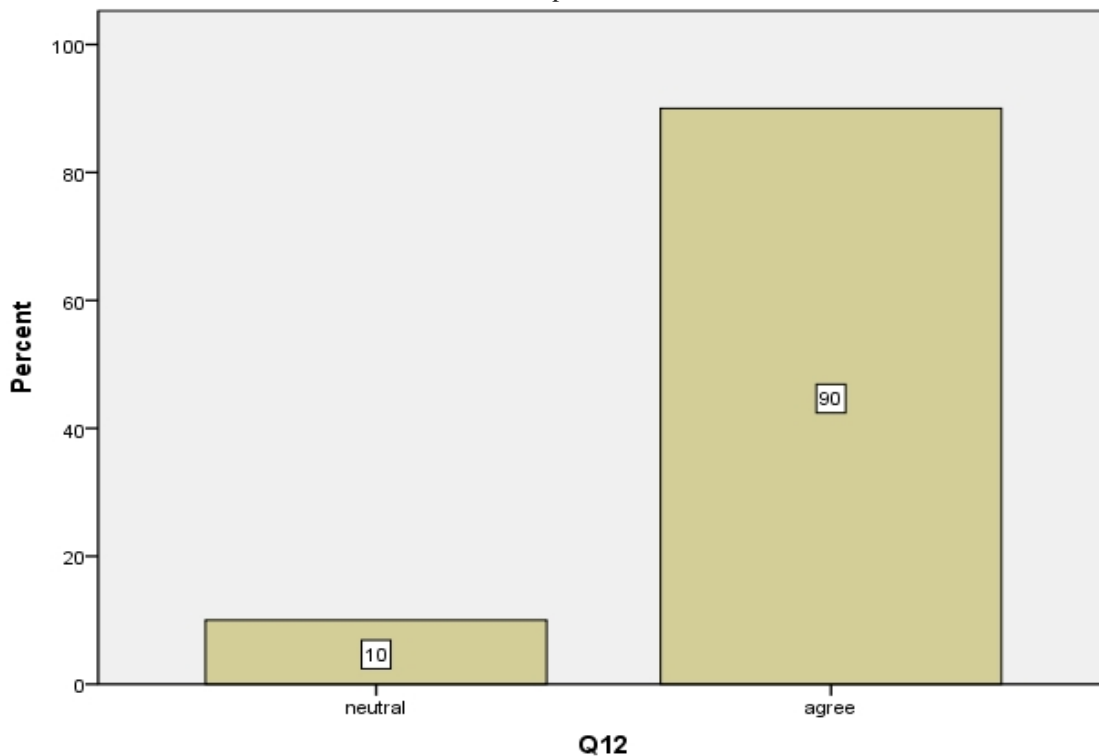
Q12:The production line stops when a fault occurs, such as the critical limits exceeded at any critical control point.

Table (4.13): The production line stops when a fault occurs,

such as the critical limits exceeded at any critical control point

		Frequency	Percent
Valid	Neutral	5	10.0
	Agree	45	90.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.13): The production line stops when a fault occurs, such as the critical limits exceeded at any critical control point

Source: prepared by researcher, using SPSS, 2016

Table (4.13) and fig. (4.13) shows that 90% of the employees agree with that the production line stops when a fault occurs, such as the critical limits exceeded at any critical control point, and 10% are neutral.
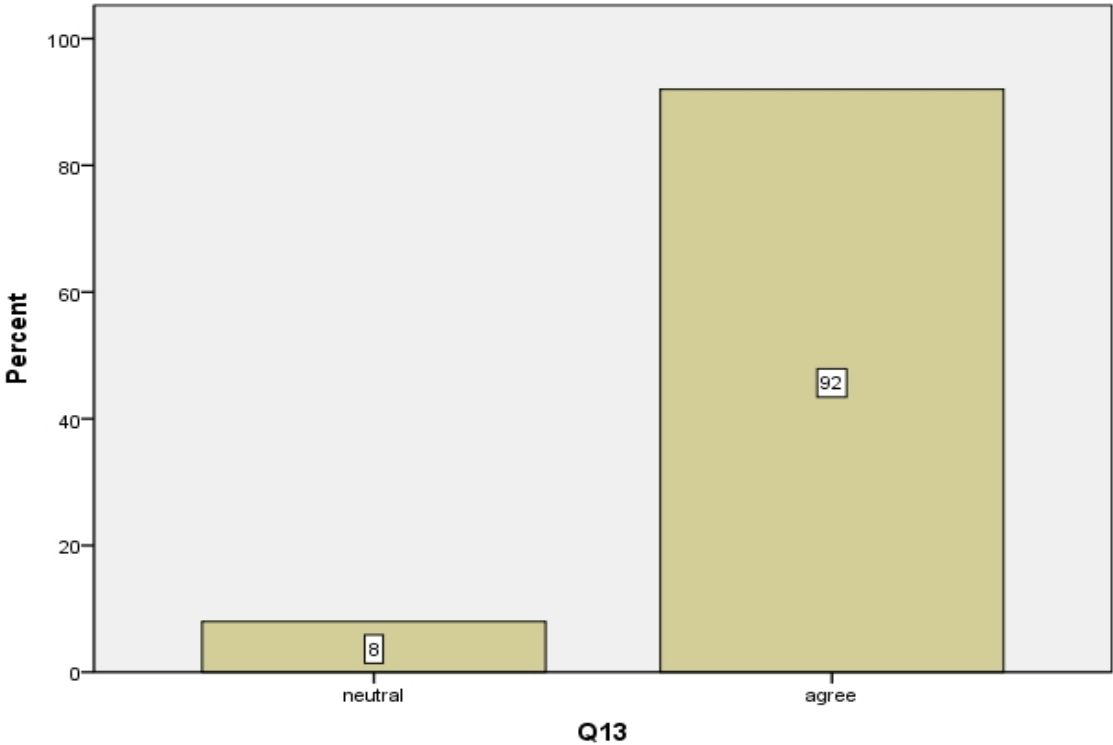
Q13: The results from the preparatory programs for operation and critical control points evaluated by someone with sufficient knowledge to assess the monitoring data.

Table (4.14): The results from the preparatory programs for operation and critical control points evaluated by someone with sufficient knowledge to assess the monitoring data

		Frequency	Percent
Valid	neutral	4	8.0
	agree	46	92.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.14): The results from the preparatory programs for operation and critical control points evaluated by someone with sufficient knowledge to assess the monitoring data

Source: prepared by researcher, using SPSS, 2016

Table (4.14) and fig. (4.14) shows that 92% of the employees agree with that the results from the preparatory programs for operation and critical control points evaluated by someone with sufficient knowledge to assess the monitoring data, and 8% are neutral.
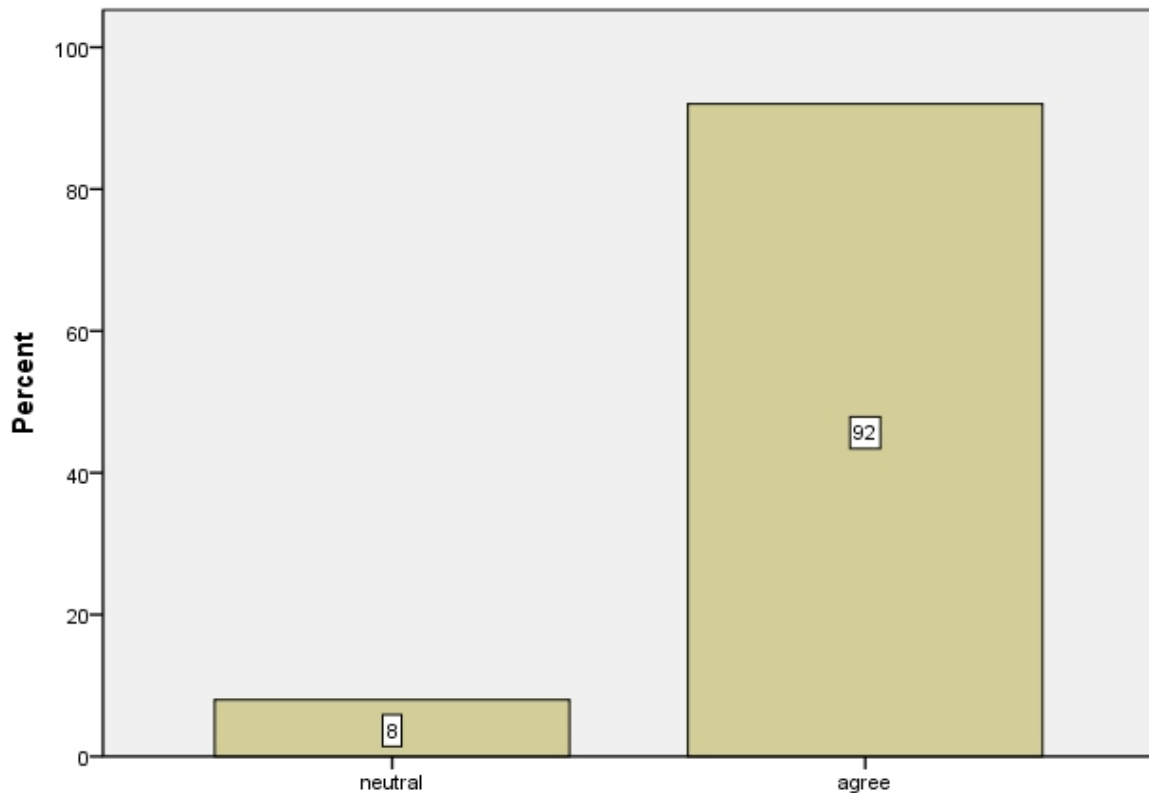
Q14:If evaluation process proven that the product cannot be launch to the market because of deep damage will be executed and waste disposal.

Table (4.15): If evaluation process proven that the product cannot be launch to the market because of deep damage will be executed and waste disposal

		Frequency	Percent
Valid	neutral	4	8.0
	agree	46	92.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.15): If evaluation process proven that the product cannot be launch to the market because of deep damage will be executed and waste disposal

Source: prepared by researcher, using SPSS, 2016

Table (4.15) and fig. (4.15) shows that 92% of the employees agree with that if evaluation process proven that the product cannot be launch to the market because of deep damage will be executed and waste disposal, and 8% are neutral.

4.1.4 Hypothesis no. (4)

There is no impact of ISO 22000 on the internal processes.

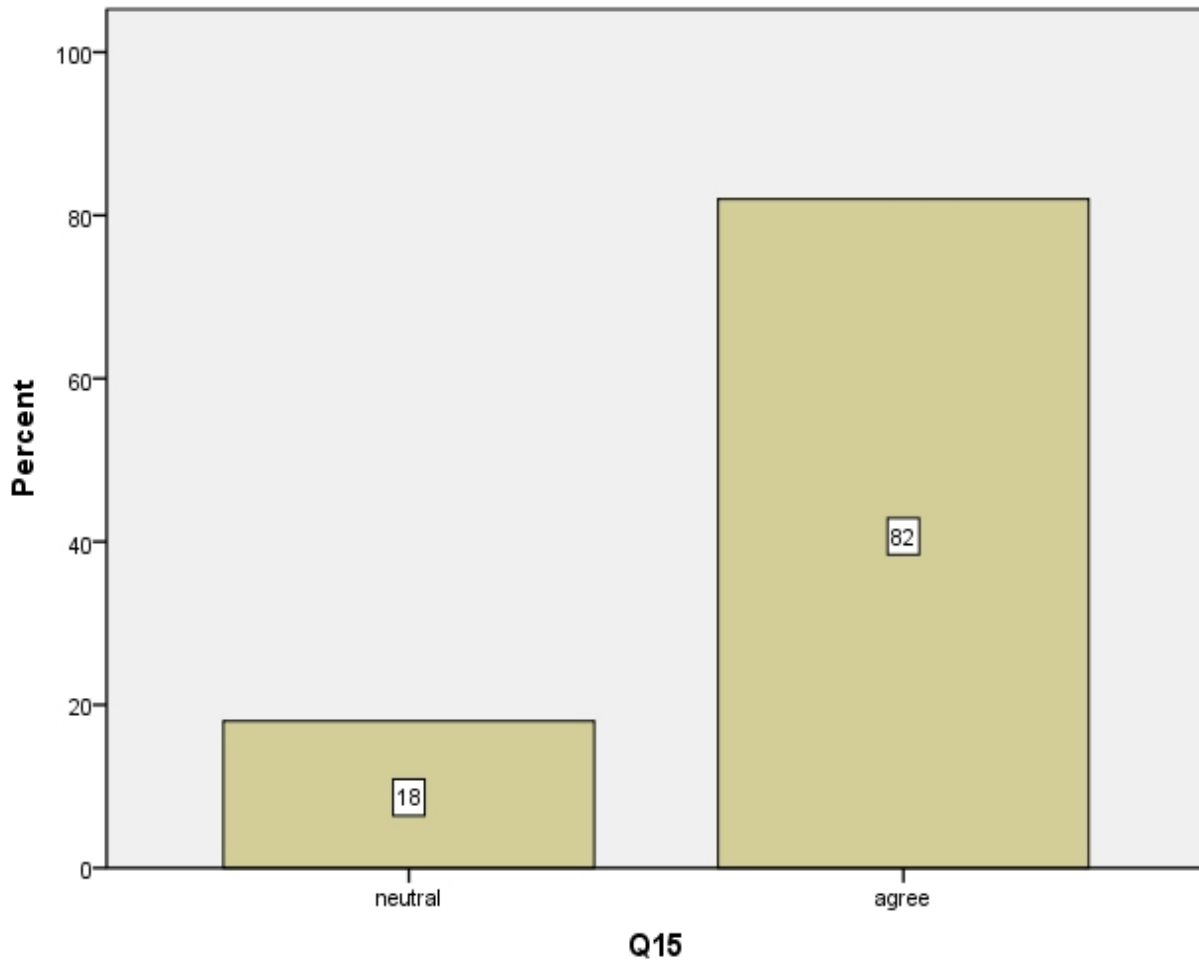Q15: The Company has a deep understanding of the food safety management system.

Table(4.16): The Company has a deep understanding of the food safety management system

		Frequency	Percent
Valid	neutral	9	18.0
	agree	41	82.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.16): The Company has a deep understanding of the food safety management system

Source: prepared by researcher, using SPSS, 2016

Table (4.16) and fig. (4.16) shows that 82% of the employees agree with that the Company has a deep understanding of the food safety management system, and 18% are neutral.
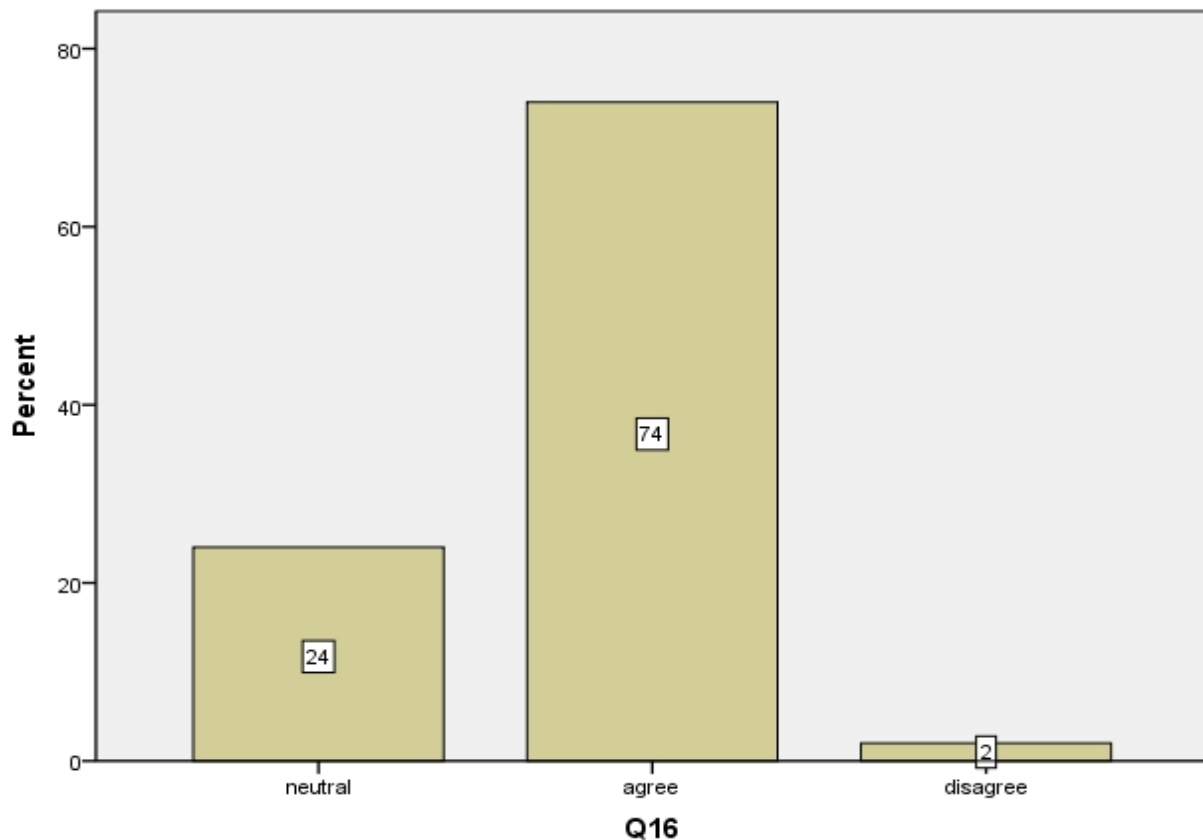
Q16: I am familiar with all the terms of the food safety management system.

Table (4.17): I am familiar with all the terms of the food safety management system

		Frequency	Percent
Valid	neutral	12	24.0
	agree	37	74.0
	disagree	1	2.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.17): I am familiar with all the terms of the food safety management system

Source: prepared by researcher, using SPSS, 2016

Table (4.17) and fig. (4.17) shows that 74% of the employees agree with that they are familiar with all the terms of the food safety management system, 24% are neutral, and 2% are disagree.
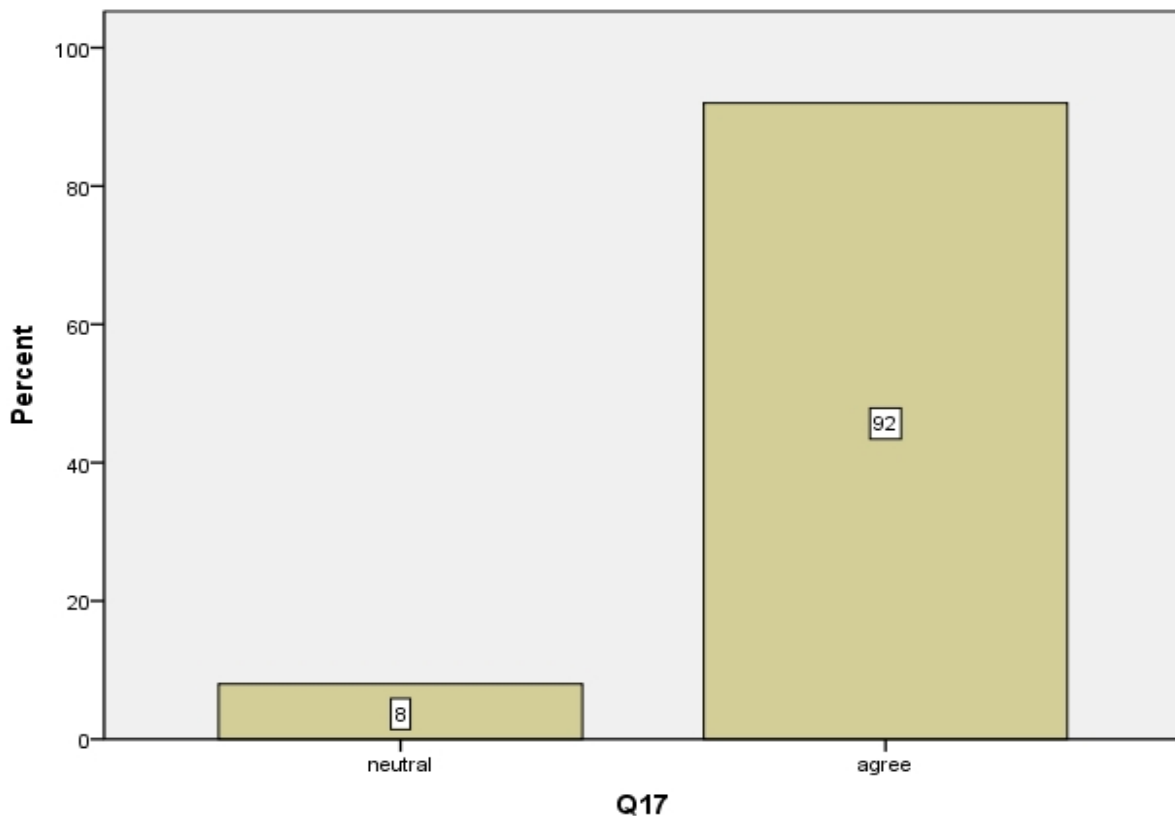
Q17: The application of food safety management system had an impact on transfer the level of the internal operations of the best.

Table (4.18): The application of food safety management system had an impact on transfer the level of the internal operations of the best

		Frequency	Percent
Valid	neutral	4	8.0
	Agree	46	92.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.18): The application of food safety management system had an impact on transfer the level of the internal operations of the best

Source: prepared by researcher, using SPSS, 2016

Table (4.18) and fig. (4.18) shows that 92% of the employees agree with that the application of food safety management system had an impact on transfer the level of the internal operations of the best, and 8% are neutral.
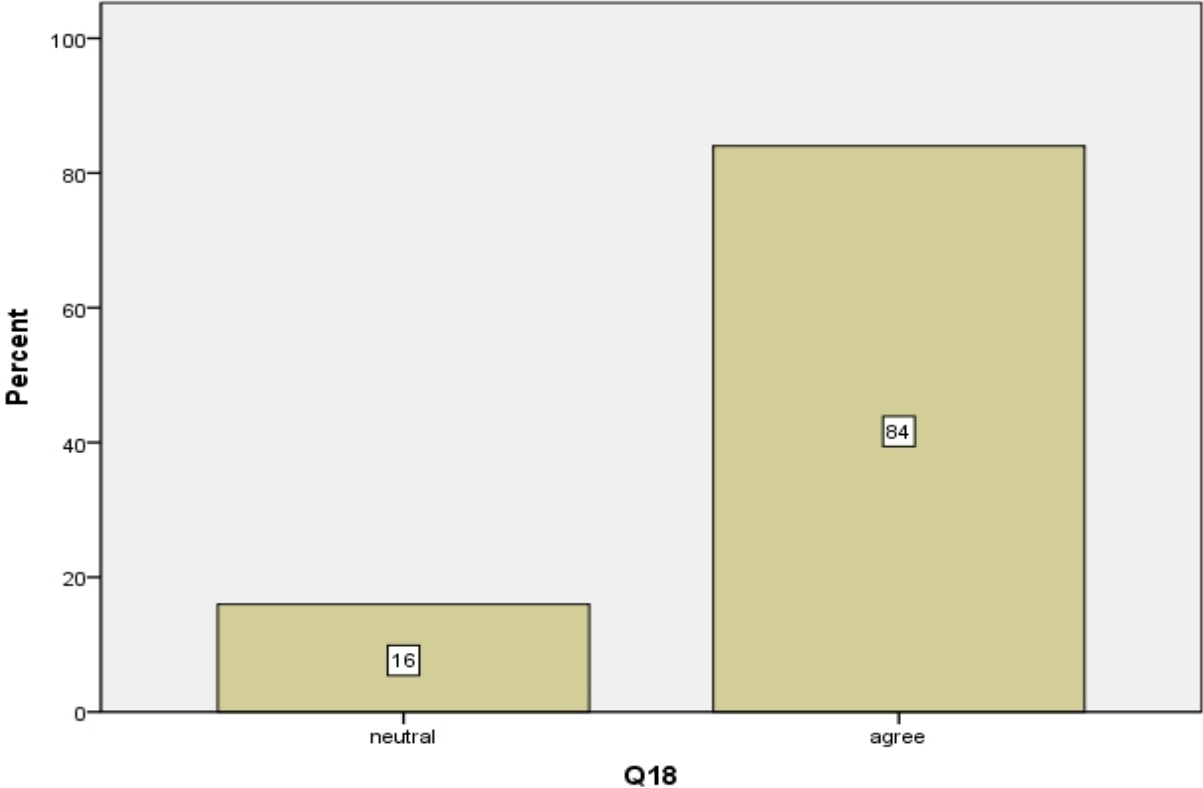
Q18: The Company's management provides computerized information network for storing information relating to the management of all the processes in the organization.

Table (4.19):The Company's management provides computerized information network for storing information relating to the management of all the processes in the organization

		Frequency	Percent
Valid	neutral	8	16.0
	agree	42	84.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.19):The Company's management provides computerized information network for storing information relating to the management of all the processes in the organization

Source: prepared by researcher, using SPSS, 2016

Table (4.19) and fig. (4.19) shows that 84% of the employees agree with that the company's management provides computerized information network for storing information relating to the management of all the processes in the organization, and 16% are neutral.
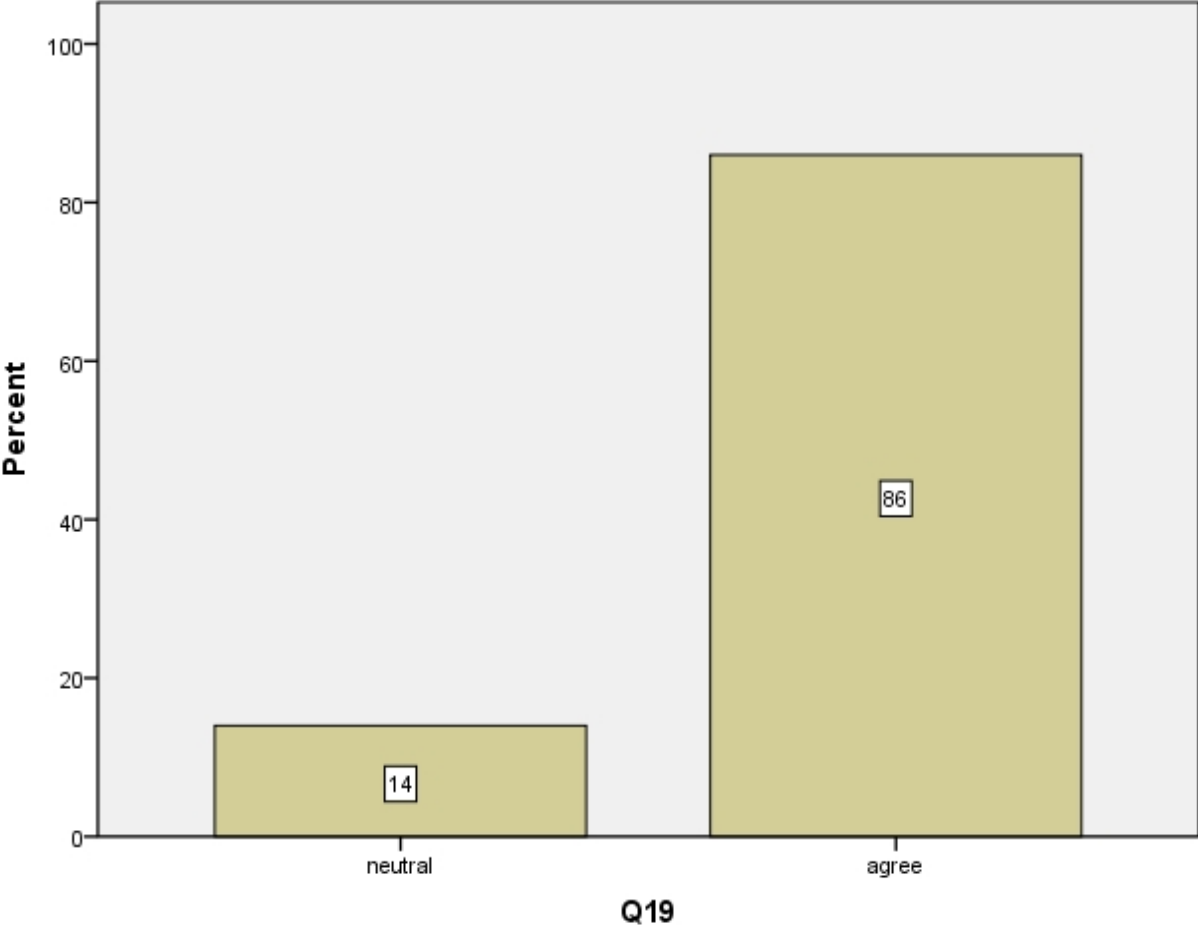
Q19: The Company provides management capabilities necessary to manage the business that lead to the quality of its services.

Table (4.20): The Company provides management capabilities necessary to manage the business that lead to the quality of its services

		Frequency	Percent
Valid	neutral	7	14.0
	agree	43	86.0
	Total	50	100.0

Source: prepared by researcher, using SPSS, 2016

Fig.(4.20): The Company provides management capabilities necessary to manage the business that lead to the quality of its services

Source: prepared by researcher, using SPSS, 2016

Table (4.20) and fig. (4.20) shows that 86% of the employees agree with that the Company provides management capabilities necessary to manage the business that lead to the quality of its services, and 14% are neutral.

CHAPTER FIVE
DISCUSSIONS, CONCLUSIONS & RECOMNDATIONS

Discussions, Conclusions and Recommendations

5.1 Discussions

In this chapter, discussion and recommendations will be present based on the research findings, to affirm whether the purpose of the research have been achieved or not and how the findings deviates or resonates with aim of research.

5.1.1 Research Objectives

The research aims to achieve the following:

1 To measure the impact of implementation of ISO 22000 on marketing.

2 To measure the impact of implementation of ISO 22000 on customer satisfaction.

3 To insure whether the implementation of ISO 22000 improve the quality of products.

4 To insure whether the implementation of ISO 22000 improve the internal processes.

5.1.2Research Hypotheses

1 There is no relationship between ISO 22000 and marketing.

2 There is no impact of ISO 22000 on customer satisfaction.

3 There is no impact of ISO 22000 on the quality of products.

4 There is no impact of ISO 22000 on the internal processes.

5.2 Conclusions

The solution of the problem statement, and the achievement of the purpose of the research have been arrived at through the process of finding relevant literature, collecting and analyzing of data as seen from the previous stages of the study.

Based on the literature reviewed and findings of analysis, this study ended by several conclusions as follow:

- Implementation of ISO 22000 have positive impact on marketing, where the market share of the company has increased and the demand of the products increased.
- Implementation of ISO 22000 have positive impact on customer satisfaction, and an evidence for that is the decrease of customers complaints, also company's management keening to solve the existing ones.
- Implementation of ISO 22000 have positive impact on quality of products and the situation of the company between other beverage companies where it is on the top of them, and there market share shows that.
- Implementation of ISO 22000 have positive impact on internal processes, from the first step of handling the raw materials and throw all steps of production until preparing the final product, ISO 22000 had helped in these processes improvement.

5.3 Recommendations

A. The findings of this study increase the insight of managers and owners about the effects of Implementation of ISO 22000 in order to lead their efforts to successful implementation, accordingly my recommendations are:

- All the employees must know much better about ISO 22000 and all its principles for better work environment and better products.
- Top management have to commit every decision and everything leading to improve the work at both wide and small scope.
- Annual training must be established, so that everyone inside the company will know the latest updates in the ISO 22000 and gain more knowledge necessary to improve the work.
- More focus on customer's complaints helps improving products (customer's complaint is a gift).
- Studies in other organizations should be conducted to ensure the reliability of the results obtained.

- From the results of this research the advantages of ISO 22000 appeared very clear, so researcher recommended that other companies in the field of food production need to implement ISO 22000.

B. Suggested research topics for future:
There are other areas related to this research scope, but due to the limited time and finance available to the researcherto continue on searching, so that he recommended other researchers to cover topics like:
1. Comparison between the cost and the utility of implementing food safety management system ISO 22000.
2. Barriers of implementing food safety management system ISO 22000.
3. The impact of implementing food safety management system ISO 22000 on customer satisfaction based on customers opinions.

CHAPTER SIX

REFERENCES& APPENDIX

6.1 References

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6.2 Appendix

السادة موظفو قسم الجودة وقسم المبيعات بشركة كوكاكولا الكرام،،،

يهدف هذا الاستبيان (والذي هو جزء من البحث التكميلي لنيل درجة الماجستير في إدارة الجودة والتميز) إلى الوقوف على وضع المؤسسات المطبقة لنظام جودة وسلامة الأغذية (ISO 22000) وتسويق المنتجاتوالذي سيتيح لنا قياس مدى وعي العملاء بأنظمة الجودة وإقبالهم على المؤسسات المطبقة لها وأثر ذلكلدفع عجلة النمو الاقتصاديوالاجتماعي في السودان، نرجو من سيادتكم الإجابة بدقة على الأسئلة الآتية حيث ستشكل إجاباتكم حجر أساس فهمنا للوضع الراهن للعملاء ومدى استفادتكم من تطبيق نظام جودة وسلامة الأغذية بشكل عام، جميع المعلومات التي ستقدمونها سيتم التعامل معها بسرية تامة ولن يتم ذكر أي من بياناتكم الخاصةشاكرين لسيادتكم الوقت والاهتمام.

الجزء الأول

ضع علامة (√) أمام الإجابة المناسبة

الجنس:

ذكر (   )   أنثى (   )

المسمى الوظيفي:

....

المؤهل العلمي:

بكالوريوس (   )   ماجستير (   )   دكتوراه (   )

عدد سنوات الخبرة:

أقل من ٥ سنوات (   )   من ٥-١٠ سنوات (   )   أكثر من ١٠ سنوات (   )

الجزء الثاني

لا أوافق	محايد	أوافق		
			المبحث الأول: أثر تطبيق المواصفة على التسويق	
			سبب إقبال أغلب الزبائن على منتجات الشركة هو تطبيقها لنظام جودةوسلامة الأغذية ISO 22000	١
			زاد إقبال الزبائن على منتجات الشركة بعد تطبيق نظام جودة وسلامة الأغذية	٢
			بعد تطبيق نظام جودة وسلامة الأغذية زادت نسبة مبيعات منتجات الشركة	٣
			هنالك مناطق معينة زاد الطلب فيها على منتجات الشركة مما يدل على وعي الزبائن فيها	4
			المبحث الثاني:أثر تطبيق المواصفة على رضاء الزبائن	
			رضاء الزبائن يمثل قيمة أساسية للشركة وكل الموظفين	٥
			تحرص إدارة الشركة على تقديم خدمات جيدة للعملاء الداخليين (الموظفين)	٦
			تعمل إدارة الشركة على إجراء الدراسات المسحية للتعرف على حاجات الزبائن	٧
			قلت شكاوى الزبائن بعد تطبيق نظام جودة وسلامة الأغذية	٨
			تحرص إدارة الشركة على الاستماع لمشكلات الزبائن وتعمل على معالجتها	٩
			المبحث الثالث:أثر تطبيق المواصفة على تحسين جودة المنتجات	
			ساعد نظام جودة وسلامة الأغذية في تحسين المنتجات التي تنتجها الشركة	١٠
			تصدر الشركة نظام لتتبع المنتج تتيح بسهولة عملية رصد المنتجات والمواد الخام القادمة من الموردين بغرض سحبه من السوق عند حدوث مشكلة بالمنتج	١١
			يتوقف خط الإنتاج عند حدوث خطا ما مثل تجاوز الحدود الحرجة عند أي نقطة سيطرة حرجة	١٢

			يتم تقييم البيانات الناتجة من مراقبة البرامج التحضيرية للتشغيل ونقاط السيطرة الحرجة بواسطة شخص يتمتع بالمعرفة الكافية	١٣
			إذا أثبتت عملية التقييم عدم إمكانية طرح المنتج للتداول لضرر بالغ يتم إعدامه والتخلص منه كنفايات	١٤
			المبحث الرابع:أثر تطبيق المواصفة على تحسين العمليات الداخلية	
			لدى إدارة الشركة فهم عميق لنظام جودة وسلامة الأغذية	١٥
			أنا على دراية بكل بنود المواصفة القياسية الدولية لجودة وسلامة الغذاء	١٦
			تطبيق نظام جودة وسلامة الأغذية كان له الأثر في نقل مستوى العمليات الداخلية للأفضل	١٧
			توفر إدارة الشركة شبكة معلومات محوسبة لتخزين المعلومات المتعلقة بإدارة كافة العمليات في المؤسسة	١٨
			توفر إدارة الشركة الإمكانيات اللازمة لإدارة الاعمال التي تؤدي الى جودة خدماتها	١٩

تقبلوا فائق احترامي وشكري على زمنكم وتمنياتي لكم بدوام التقدم والتطور كما

هو معهود عنكم من تقدمكم لركب مؤسسات الصناعات الغذائية في السودان...

رامي أحمد علي

ماجستير إدارة الجودة والتميز ـ جامعة السودان