



Transformational Change and the Implications of Food Safety: A Case Study of a Greek Chocolate Manufacturer

Sophia Pandi^{1*} and Derek Watson²

¹PhD Research Student, University of Sunderland, UK

²Senior Lecturer, University of Sunderland, UK

*Corresponding Author: Sophia Pandi, PhD Research Student, University of Sunderland, UK.

Received: April 27, 2018; Published: June 06, 2018

Abstract

The procedures for producing and handling chocolate in place must have adequate safety protocols. To do otherwise could have serious and potential catastrophic consequences in terms of contamination. Hence, it is important the manufacturers and food handlers to adopt good hygiene policies and procedures to improve the safety, preserve their brand and product's reputation and most importantly, the health of consumers. This paper addresses a shift in the business culture of a Greek company, producing fresh chocolate products and confectionery, resulting from a change in their underlying strategy and food safety activities. Such a transformational change in food safety contributed in making their products a 'Leader Concept' in the 'Chocolate Pastry Market' and listed them, among the most promising companies at the confectionery business in Europe.

Keywords: Food Safety Culture; Food Safety Management; Food Safety Performance; Leadership

Introduction

Organizations today are in a constant state of flux as they respond to the fast-moving often unstable external business environments. In order to survive in a rapidly change environment, firms have to adopt strategies of various types and levels to become more competitive and profitable [1]. The ability to anticipate and manage change is a core competency that all food organizations need to embrace. For instance, to improve the quality; the range of goods and services; to increase market share or enter a new market; to increase the capacity of producing goods or services; to replace outdated products, to reduce labor costs and to improve health and safety [2].

Change management is a key business process for all companies but, in the context of food safety, it is a particularly critical one that must be managed in a systematic way. Failure to do so could lead to catastrophic consequences. For instance, the 'Two Sisters' food chicken factory located in the UK, revealed poor hygiene standards [3]. The product recalls, such as the contamination scare of eggs imported to the UK between March and June from Dutch farmers in 2017, revealed a high level of chemical substance in eggs [4] that was dangerous, as affected on people's kidneys, liver and thyroid glands [5]. The former 'Peanut Corporation' caused salmonella poi-

soning to hundreds of people and unfortunately nine people lost their lives [6]. In consequence, the former president received a 28-years life sentence for putting profits before safety [7].

The Confectionery products sector in Europe

The sub-industry cocoa, chocolate and sugar confectionery includes the manufacture of cocoa, chocolate, chocolate confectionery, nuts and sugar products. The largest manufacturers of confectionary products are in Germany (20%), France (15%), Italy (15%) and Belgium (10%). Worldwide the largest confectionery producing companies are based in the USA. The European Union is a net exporter of confectionary products and the main export markets are the USA, Switzerland, Russia and Norway. In addition, the European Union imports confectionary goods mainly from Switzerland, Turkey, China and the USA [8].

The confectionery products sectors accounts for 4.6% of total turnover in the overall food and drink industry. [8]. With less than 0.5% growth, Western Europe has been one of the slowest growing regions over 2011 - 2016. That said, the market is highly saturated. With per capita spend on confectionery exceeding USD106, it has the highest spend on confectionery anywhere in the world. Consumers in Germany, Austria and the UK consume more than five times as much confectionery as the global average [9].

An overview of the chocolate confectionery segment amounts US \$84,259m. revenue in 2018. (see figure 1) The market is expected to grow annually by 1% between 2018 - 2021 [10].

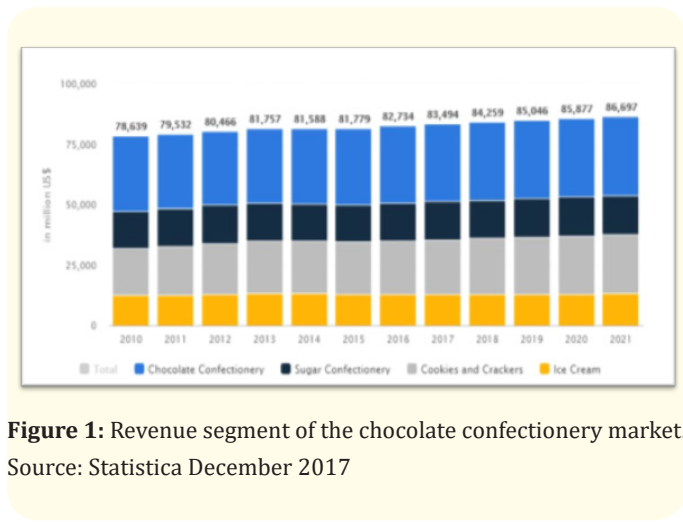


Figure 1: Revenue segment of the chocolate confectionery market. Source: Statista December 2017

The Confectionery products sector in Greece

A large number of businesses operate in the bakery and confectionery industry in Greece, but the majority of them operate individual stores. Since 2010, the economic situation of the country, as well as the decrease of consumer income, have negatively affected the industry [11]. According to a study prepared by the Department of Economic Research (ICAP Group SA), the main factors that influence the demand for bakery and pastry products is the size of the country’s population, the selling price of products together with the disposable income of consumers, the dietary habits of buyers and finally the modern lifestyle of employees [12].

Furthermore, the number of registered Greek members in the bakery and confectionery industry amounts to more than 10,000 companies, while the 60% represented by the bakery sector. The majority of enterprises are logged in the Attica region (17%) and Thessaloniki (7%) [13]. Some companies in the sector, in order to expand their branch network have expanded via franchising under a single brand [12]. Moreover, the senior consultant of ICAP group highlighted, that the market size of the bakery sector has continuously declined since 2010, at an average annual rate of reduction of 4%. Similarly, the market size of confectionery companies followed a downward trend over the same period, at an average annual rate of decline of 4.5% (see figure 2).

Max Perry Handmade Chocolates/Company Profile

The story of Max Perry had begun in 1990, when the owner of the company, started to work for a small factory that produced chocolates and distributed them door to door throughout Greece. During this period, he realized that there was a gap in the chocolate market, as many imports of chocolate were highly priced and con-

sidered a luxury food product. The owners vision was to produce and deliver affordable quality chocolate in the Greek market. He opened his first production unit/point of sale in Piraeus in 2005. Max Perry rapid growth was due to designing a production process that was visible to consumers and providing luxury chocolates at affordable prices. In 2018, Max Perry currently has 26 stores and has been labeled as one of the most promising companies in the European food industry.

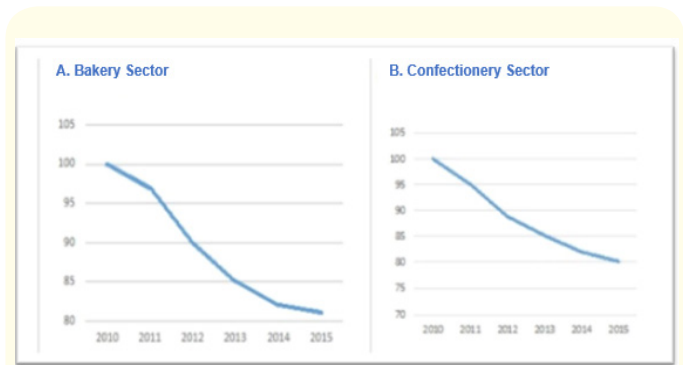


Figure 2: Ratios of bakery and confectionery companies (2010-2015).

Source: ICAP GROUP S.A.

Literature Review

The goal of any business in the food industry is to achieve its food safety goals in an effective and efficient way through planning, training, organizing, managing and controlling organizational resources. However, it remains a challenge to compel food manufacturers, distributors, retailers to adopt scientifically validated food safety quality systems. There are many breaches in such systems due failures in an organizations food safety culture. The number of definitions describing culture is vast with no apparent indication of losing its momentum. Warrick [14] ‘defined culture as “the [predominant] beliefs, values, attitudes, behaviours, and practices that are characteristics of a group of people”. When people join an organization, they bring with them the values and beliefs that they have been taught by society, which they belong. Alternatively, Deal and Kennedy [15] described culture in a very simple way as “the way we do things around here”.

While the concept of safety culture was introduced to explain failures in high-risk sociotechnical systems (e.g. nuclear power generation), the term ‘safety climate’ was already being used in reference to the organisational climate for safety and its impact on employee behaviour in organisations [16]. Over the years a number of questionnaires have been developed by various researchers Zohar [16]; Mearns, *et al.* [17]; Lee [18]; in an attempt to identify the main factors that comprise safety climate. These psychometric

surveys produce a ‘snapshot’ of the organization’s state of safety discerned through the attitudes and perceptions of the workforce. Rousseau [19], highlighted that climate is more specific as it refers to people’s description about their everyday experiences, whereas culture largely reflects prevailing social group norms - the way we do things around here.

The debates about safety have been related to climate and culture, both of which influence safety behaviour [20]. Safety climate refers to people perception’s and attitudes (i.e. the way people feel, their values) towards safety in their working environment [21]. Culture determines the efficiency and effectiveness of safety management systems [22]. However, many academics have attempted to clarify the constructs of safety culture and safety climate and to resolve definitional dilemmas. Guldenmond [23], points out that the current literature review of safety culture and safety climate is still unclear. The researchers may need to apply different interventions to address safety climate as compared to safety culture. The culture is the solid underpinning factor, which sets the potential for climate; good safety culture should lead to good safety climate, ceteris paribus, and vice versa. Safety culture is the true value and intention of the organisation towards safety, whilst safety climate can be explained to be the perceived values of an organisation towards safety [24].

In an applying work on organizational and safety culture to food safety, six factors of safety culture from other highly regulated environments, were identified (see figure 3) as applicable to studying food safety culture in relation to food safety performance [25].

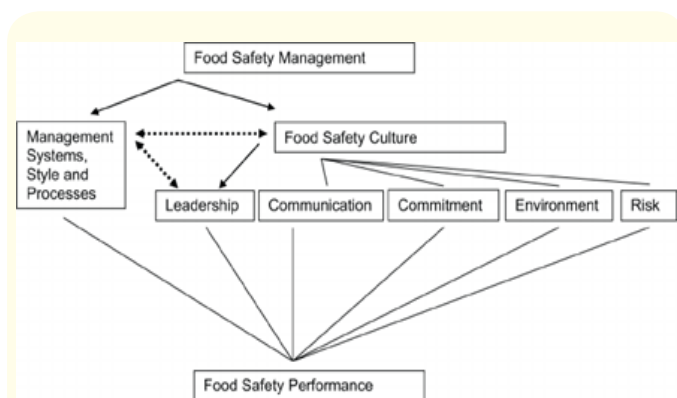


Figure 3: Factors influencing food safety performance.

- (1) management systems, style and processes
- (2) leadership
- (3) communication
- (4) commitment

- (5) environment; and
- (6) risk awareness, perception and risk-taking behavior

For, Griffith., et al. [25], food safety management is coordinated activities to direct or control food safety. The control is achieved by getting the commitment of employees, to understand any procedures or changes in the organization [26]. In terms of a systematic approach to food safety, HACCP provides process flow charts and schedules setting out monitoring, control and corrective action strategies for both food safety and quality issues [27]. However, the food industry covers a very broad spectrum of business size and sophistication [28] and it is often the case that some management systems are considered too expensive and labor intensive, specifically for small to medium enterprises (SMEs) [29]. This is obviously a high-risk strategy with significant consequences for the organization and consumers.

A fundamental part of food safety management is the extent to which managers get personally involved in food safety activities. All organizations need good leaders and better-led businesses are more productive, competitive and responsive. Leadership is a difficult concept to define, perhaps because it means so many things to different people [30]. From some individuals, a leader can be a charismatic person with strong ‘willpower’ capable of influencing other people’s attitudes towards achieving food safety. Yiannas [31] made a distinction between leadership and management and noted that in food safety, “management is often spoken about, but leadership is rarely mentioned”. Griffith., et al. [25] suggested that food safety leadership is a measure of the extent the business’s leader(s), who are able to engage staff in hygiene/safety performance and compliance to meet the business food safety standards. Fundamentally leadership is that all inspiring contribution in ensuring a positive food safety culture is developed and maintained [32].

Organizations’ endeavour to build up effective ‘communication policy’ and it is the reason for progress and development, integration and achievement of their goals. Although, they all have the same purpose: making sure that everyone is on the same page is a constant challenge. One problem is that unknowingly a business may send out wrong messages and this has been found to be the case in non-compliance with food safety requirements. For instance, the food safety culture has nurtured a perception in which food handlers believing that other things, such as saving money are more important than practicing food safety [25]. Care about good communication with employees will reduce the risk of crisis situations and will work to the benefit of the company [33]. Especially, in the food sector, informal communication (e.g. conversations in the workplace, mass meetings, briefing groups) about food safety can often have higher impact and influence the behavior of

employees than formal communications (e.g. e-mail sent to whole company) [25]. Effective communication with employees takes effort, repetition, thoughtfulness and most importantly needs to come from the heart [34]. Positive safety cultures are often characterized by employees who “feel free to discuss safety issues with supervisors” [35].

However, in a very real sense, commitment is closely linked to communication. According to [36] a number of organizational commitment models have been developed, influencing employee behavior. Within the food sector, commitment and involvement are catalysts to ensure that food safety becomes ‘everybody’s business. The basic management approaches such as job satisfaction, rewarding system, personal responsibility, recognition and employee empowerment are commonly included. Harvey, *et al.* [37] underlined that job satisfaction, is an important issue and is related in many cases with work performance. In the case that employees in the working environment are not satisfied with the task assigned to them, they feel uncertainty. Griffith, *et al.* [25] stated that employee empowerment equips and encourages them to make personal decisions and to feel that they are in charge of the outcomes of the tasks for which they have assumed responsibility and helps bond a positive food culture.

Furthermore, a wide range of psychological and situational factors can contribute to the food safety environment of organizations. Many perceived barriers have been linked to a lack of hand washing and other food handling practices or the insufficient numbers of staff to fully perform all the required safety practices in the food industry [38]. Research in the manufacturing industry found that individuals with higher perceived organizational support (POS) (e.g. financially, psychologically and emotionally) were more likely to engage in safety-related behaviors [25].

How well safety procedures and regulations are followed within an organization is considered to be influenced by the reigning food safety culture of the organization [39]. Risk awareness and risk-taking behavior are game changers in the pursuit of a positive food safety culture [37]. Risk taking behaviour is influenced by a range of variables such as personal risk, disposition, lack of control, as well as performance and feedback [25]. A variety of factors can influence employee behavior such as the ‘trust’ associated with management practices and the perceived safety values of the organization [40].

Methodology

The research based only of the network of the company. A sample size of 20 managers in different positions (operation, production) and 20 laboratory supervisors would be identified in role

title. A mixed method approach was implemented via the qualitative analysis of semi-structured interviews and focus groups. A decision was made to group the questions utilising the six factors of safety culture; (1) management systems, (2) leadership, (3) communication, (4) commitment, (5) environment and (6) risk awareness, as identified by Griffith, *et al* [25]. All the anecdotal data that collected from the research, will form part of a final report to senior management, validating key issues raised and providing recommendations.

Results and Discussion

Food Safety Management Systems

Academic studies showed smaller food businesses can experience particular difficulties complying with their legal obligations. They may not have sufficient resources (financial or technical) to understand what the law requires from them [41]. This issue, supported by most of the participants, who reported some difficulties in the procedures of the system such as quantity of documentation and the lack of knowledge in some procedures. The above issues are reflected in the statement below:

Operation Manager

We try to keep the control in the production process as the HAC-CP system has a number of outcomes. The key of success focused on the fact that the production unit in each store is operating in the front end of the store next to the customers entrance. The consumers are able to see clearly the raw materials, the process itself and the cleanliness of the working area through the glass facades. This production method keeps the staff active to avoid mistakes and to follow at least the rules of hygiene standards on food safety. However, food quality and safety level is a compromise between requirements and the consumers’ pressure for quality.

Production Manager

Food safety is the responsibility of all staff, not just those employed in the laboratory. The attitudes of employees who participated in food safety and hygiene training were significantly superior to those of employees who had never received such training.

Furthermore, they highlighted that the implementation of food safety procedures is fine during quite periods, but when staff operates under pressure the productivity takes precedence over food safety procedures. This statement increases the risk factors for food poisoning outbreaks due to the improper food handling practices in foodservice outlets and the contaminated hand contacts during preparation of food as noted by Howes, *et al* [42]. For instance:

Laboratory Supervisor

Especially in peak periods, such as Christmas, Easter or other big events we do not get enough time and flexibility to clean full the equipment as defined by the procedures'. The staff is very stressed as the demand for our products is huge and the working hours are so many.

Other difficulties were related to the non- motivated staff for quality work. The problem is focused on the weakness to have permanent numbers of well trained and experienced people. They supported that despite investment in food safety training, this is not the only factor that would lead to proper food handling as supported by the views of researchers Griffith., *et al.* [25]; Jespersen and Huffman [43]; Taylor [44]; For instance:

Production Manager

It's tough to find experience staff in our sector. We need to ensure that all employees, including young and new workers, have appropriate induction, information, instruction, task specific training and supervision to ensure work is done safely. I wouldn't lie and say it's amazing all the time, because it is a very hard sector, especially if you don't have a good sense of humor. Young workers should be closely and competently supervised.

Laboratory Supervisor

So instead of looking for experienced people in your field, go after great people. If someone is willing to work hard and is teachable, those are really the only requirements you need in most cases to find exactly the person you're looking for. Training and knowledge do not mean behavioural change.

Leadership

In the field of food safety leadership, participants emphasized that leaders have to be able to engage staff in hygiene/safety performance and compliance to meet the business food safety standards, this was supported by the views of Griffith., *et al* [25]. However, they highlighted that the culture and goals of the company determine which leadership style fits the firm best, while the personality of the leader often dictate which is most often use as noted by Griffith., *et al* [25]. Some contemporary approaches involve transactional and transformational models. Managers using the transactional leadership style receive certain tasks to perform and provide appropriate rewards to team members, when they accomplish goals. On the other hand, the transformational leadership style depends on high levels of communication from management to meet goals. Leaders focus on the big picture within an organization and delegate smaller tasks to the team to accomplish goals. Transactional styles appear to reinforce employees' safety behav-

iors when attention to monitoring has been effective at supervisory levels as suggested by Flin and Yule [45]. For instance:

Production Manager

Many times, we make tough decisions. The raw materials and ingredients that we use are very sensitive to the contamination incidents. This is not an easy task, and we are strict with the staff, but we avoid methods such as punishment or penalties. I am fair... I applause and provide reward to my team, when they accomplish the goals.

Laboratory Supervisor

I work hard... I always challenge the employees to think bigger and better and inspire them to create extraordinarily successful products.

Moreover, participants totally agreed that managers may well need to employ more than one style of leadership and change their style at different times and with different people as supported by Griffith., *et al* [25].

Operation Manager

A variety of behaviors and skills are required by leaders to ensure positive impacts on staff and therefore sustainable. For example; knowledge, experience, motivation, optimism, self-control, self-esteem, support, advice, enthusiasm, fantasy, good communicator, flexibility. Employees are watching you all the time. If you want to shape their behavior, start with your own.

Communication

Feedback from participants stated that is important to follow more than one norms of communication, in order to avoid mistakes, omissions or failures of any kind. They emphasized that managers do not use the same communication style when relating to different subordinates and an individual relationship can develop with each subordinate over time as supported by the views of Bauer and Green [46]. However, they highlighted that the communication policy can occur in some variety ways - face to face interactions in groups or individually, through print documents, through broadcast messages or increasingly online. The use of informal mechanisms (e.g. conversations in the workplace) for communicating food safety issues can often have higher impact and influence on behaviour, than formal communications (e.g. e-mail sent to whole company) as noted by Griffith., *et al* [25]. Furthermore, they called attention that without communication staff would not know their roles and responsibilities or the businesses' objectives and this includes what a food business believes, feels and wants to achieve, concerning food safety as supported by Griffith., *et al* [25]. For instance:

Operation Manager

Telling employees what to do isn't enough. Our team have to understand why it's important and be reminded on a regular basis of the consequences of poor food safety practices. We discussed with our staff daily. Effective communication with our employees can help and empower them to feel involved in the procedures, to increase their productivity.

Production Manager

It is important to remember utterances such as 'yes' and 'okay' in agreement are not indications of full understanding. For employees, it can be difficult to say 'no', and 'yes' can be used as a short cut for a break and to end a conversation.

Laboratory Supervisor

Sometimes, managers are 'good speakers' but 'poor communicators'. I am trying to keep messages short and rhyming to make them memorable. We try to find the most appropriate form for the message delivery, followed by evaluation and feedback.

Commitment

There was a common acceptance in senior management feedback, concerning the commitment and involvement approach of the employee on the food safety issue. They highlighted that commitment is an integral part of organizational culture and is seen as an important predictor of employee loyalty. Committed employees bring added value to the organization, including through their determination, proactive support, relatively high productivity and an awareness of quality. They emphasized that basic management approaches such as job satisfaction, rewarding system, recognition and employee empowerment are included as stated in literature by the perspectives of Griffith., *et al* [25]. However, they indicated that the concept of rewards for hygienic behaviour links to motivation to behave hygienically and job satisfaction, as noted by Griffith., *et al* [25]. They supported that different factors such as wages, working hours, autonomy given to employees, organizational structure and communication between employees and management, may affect job satisfaction. They highlighted that when employees receiving appropriate praise and recognition, are more likely to act hygienically and engage with their colleagues, as supported by the views of Roth and Clifton [47]. For instance:

Operation Manager

Systems and procedures are important, but the human issues are the deciding factor. We care for our people. We are trying to empower them, giving them the appropriate praise and recognition.

Production Manager

Keeping our employees happy at work is important for morale, it is staff commitment, and not staff satisfaction, that will help to maximize the bottom line performance of our company.

Laboratory Supervisor

It's a small owned business, so we've all known each other. The hours and intensity of your work in the laboratory are too much, your colleagues do truly become your family.

Environment

Participants described the issue environment as a measurement for the improvement on working conditions. They include tangible factors such as the availability and accessibility of hand wash basins or other hygiene equipment as supported by the views of Clayton., *et al* [48]. Some participants mentioned that aspects of the workplace environment and support from the management, motivated them to follow safe food handling practices. If sufficient facilities are available then there is support for food safety but also if absent then food safety is perceived not to be important as noted by Griffith., *et al* [25]. Moreover, they highlighted that improper hand washing practice was related to a lack of soap and drying towels and issues with sinks (limited number, poor functioning, small spaces) as supported by Clayton and Griffith [38]. For instance:

Production Manager

A lot of laboratories I have worked in, I have access to only a couple of sinks, some of them don't work properly, some of them a lot of times will sit stuff in the sink or block it with things in like tubs or whatever. This will make the sink completely inaccessible to you.

Operation Manager

Many people are working and busyness, could reduce the frequency of hand washing and changing of gloves

Furthermore, a few respondents were encouraged to follow procedures by putting themselves in the customer's position. For instance:

Laboratory Supervisor

If this was my dessert, I would not want anyone touching it with his/her bare hands.

Risk Awareness

Many participants indicated to the importance of risk awareness and their perceptions links closely to risk management in order to ensure an appropriate level of protection in food safety procedures and risk communication strategy, which is the stage in which information about the risks and hazards is shared among all people involved, as supported by the views of Griffith., *et al* [25]. They highlighted that in trying to get the risk message over to food handlers a personal qualitative approach, using examples and pictures of those made ill or killed by food poisoning is more practicable, than a quantitative approach using statistical data, as supported by the views of Yiannas [31]. Furthermore, they supported that the importance of trust in the source of information is vital for risk communication as noted by Frewer., *et al* [40]. People may not believe or follow information which they distrust, and this can result in ineffective risk management and potentially severe consequences. For instance:

Operation Manager

To increase the trustworthiness of an information source, it is recommended to use credible and independent scientific expertise, to be honest, and openly to address potential perceptions of promoting the interests of the source.

Production line Manager

Proper hand washing is a critical but often overlooked intervention step in the prevention of foodborne illness. The production of desserts involves many steps, and each step introduces more risk of contamination. And that's why we take our processing so seriously, to make sure that the product is unadulterated.

Laboratory Supervisor

I just think I don't want anyone to get sick

Conclusion

The results of this study were related to the factors that influence food safety performance supported by the views of Griffith., *et al* [25]. According to the literature, the views of Griffith., *et al* [25] are agreed with the views of other authors. De Boek., *et al*. [49] suggested that not only technological and managerial factors can influence the hygiene and food safety output of an organization, called 'techno-managerial route' but also 'the human route' as employees' (shared) perception of leadership, communication, commitment, resources and risk awareness, concerning food safety and hygiene within their current work organization.

The study outlined some difficulties in the process and implementation of food safety management systems. Factors such as quantity of documentation, lack of knowledge, staff pressure during peak periods, the lack of permanent well trained and motivated staff, influenced the control procedures, attitudes of employees and generally the food safety culture of the company. Part of the management role is to employees' acquisition of the requisite knowledge, skills and attitudes, needed as part of a safe food culture. Tools such as conversation at the work place, posted messages, training sessions, rewards systems, recognition, good communication, involvement of employees in the decision-making process, environment and risk awareness lies at the heart of any successful system. According to [50] it is possible for a business to have a high level of compliance by being stronger in some areas than others, what is important, is how all the components fit together to contribute to the complete or overall effective food safety culture [51,52].

The present study has its limitations, which call for further researches on this topic. The data represented only the opinions of managers. Ideally future researches should attempt to cover the opinions of workers from all departments, and the theoretical development of food safety culture should focus more on shared values, norms and attitudes of safety.

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Volume 1 Issue 7 July 2018

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