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Structural modeling of the relationship among food safety knowledge, attitude and behavior of hotel staff in Turkey

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ABSTRACT

The aim of this study is to examine the food safety knowledge, attitude and behavior of staff working in hotels in Turkey, and to investigate the effects of these determinants on each other. For this purpose, a survey is performed with 498 staff who work for different positions in the hotel. The collected data is analyzed by using descriptive statistics and structural equation modeling. As a result, it is determined that food safety knowledge has not a significant influence on food safety behavior. However, there is a high correlation between food safety attitude and behavior, and a medium correlation between food safety knowledge and attitude. As a consequence, training, profession and experience of the staff are very important factors to be paid attention for ensuring food safety in enterprises. Thus, it is necessary to determine the training needs of the staff, and to provide training and seminars taking into account the position of each staff in the hotel.

1. Introduction

Food safety is considered as a global health target because food-borne diseases are major health problem in world today (Velusamy, Arshak, Korostynska, Oliwa, & Adley, 2010). These diseases are widespread and growing public health problem for both developing and developed countries. This problem; however, has more impact on health and economy in developing countries, but no reliable data are available (Martins, Hogg, & Otero, 2012; Redmond & Griffith, 2003; WHO, 2006). The majority of the food-borne diseases are caused by the implementation of unhealthy diets and failure to avoid of the food safety risk (Chassy, 2010).

European Food Safety Authority (EFSA, 2010) stated that around 48.7% of food-borne illnesses are derived from food services in the food production premises. According to World Health Organization (WHO, 2006), only in 2005 about 1.8 million people died because of diarrheal cases which are mostly due to the contaminated food and water consumption. Especially in developing countries more than one-third of the total population in each year are affected by food-borne diseases. The reduction of these diseases is one of the main objectives of national and international food safety programmes (Notermans, Gallhof, Zweitering, & Mead, 1995). It is indicated in a study that food handlers have important role in contaminating food (Campos et al., 2009). Especially in the industrial environment; undercooked foods of animal origin, feces contaminated fruits and vegetables, shellfish including biotoxins are examples of unsafe food (WHO, 2015). Barancelli et al. (2014) highlighted the importance of using molecular techniques as preventive measures to control the microbiological hazard in the industrial food production.

The most common causes of food borne poisoning cases are reported as inadequate cooling, one or more hours between preparation and consumption, infected staff, incorrect heat treatment, inadequate cooking, inadequate heating, using contaminated material, cross contamination, inadequate cleaning of the equipment, using bad food materials and leftover food (Sanlier, 2009). Knowledge does not automatically lead to safe behavior, but the consumer gets the opportunity to choose how to act regarding food safety actions. Several studies have indicated gaps in consumer and worker knowledge, as well as in their behavior in relation to food safety (Jevšnik, Hlebec, & Raspor, 2008; Lange, Göranzon, & Marklinder, 2014; Redmond & Griffith, 2003). Unlike many consumers who were educated to at least high school level, most of the

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unhygienic food manufacturers were found to have low educational levels and not to have any formal food safety training which would greatly contribute to their poor food safety knowledge levels, attitudes and unhygienic practice (Samapundo, Cam Thanh, Xhaferi, & Devlieghere, 2016). In a study by McKay, Singh, Singh, Good and Osborne (2016), the hygienic practices of street vendors and the context of their socioeconomic and living circumstances were investigated.

Tourism is an essential source of revenue for all countries. In fact, the most important feature of tourism, which is a socio-economic phenomenon, is that the sector is based on the human element. Businesses showing the necessary care to their personnel and offering better quality service achieve their objectives much easier; otherwise, they may face the extinction over time. Experience shows that food safety is important for general public health as well as for the tourism industry of the countries. Consequently, for the future of the tourism sector, it is important to evaluate food safety knowledge, attitude and behavior of staff in the food and beverage services. It is an inevitable result for the countries which have a lack of knowledge, attitude and behavior relating to the food safety to face decline in the tourism sector and experience large-scale scandals.

As an important part of the tourism sector, hotels are one of the most common places where food is prepared and served. In a study performed by Bolton, Meally, Blair, Mcdowell and Cowan (2008), it is pointed out that business and also its customers may seriously suffer from the unsuitable hygienic conditions of the kitchens in the hotels. In order to ensure hygienic quality in the hotels, some of the measures should be taken and the hotel manager and staff should be given training in hygiene at regular intervals (Sanlier, 2009). In various studies, consumers and food industry workers have been revealed to have a lack of information and negligence in terms of food preparation safety (Badrie, Gobin, Dookeran, & Duncan, 2006; Jevšnik et al., 2008). The application errors are regarded as the most important factors in the incidence of food-borne illnesses. The necessary awareness of consumers for food safety can take place with the knowledge of food safety and ensuring necessary conditions for the health risks. Additionally, specific local and national laws for unhygienic food need to be created to protect the consumer, and continuous training of vendors could help address the lack of food quality and safety (Cortese, Veiros, Feldman, & Cavalli, 2016). Important requirements in the legislation should be followed; adequate packaging and storage of the raw material, obtaining the raw material from registered suppliers, hygiene of the handlers and adequate management of wastes produced during the activities in question are amongst the main items deserving attention (Nunes et al., 2010).

In developing regions of the world, many environmental and demographic changes lead to continuous outbreaks of food-borne pathogens. These changes vary from climatic changes, changes in microbial and other ecological systems, poor environmental sanitation, and decreasing freshwater supplies, resulting in outbreaks of diseases such as gastroenteritis, hepatitis A, and others transmitted by food and/or drinking water (Kaferstein & Abdussalam, 1999). Mass tourism and major international food trade cause food-borne pathogens spreading transnationally. Turkey is one of the most tourism-dependent regions in Middle East, Asia, Europe briefly all over the world. Thus in order to ensure a profitable hospitality industry and tourism growth, the requirements of healthy and sustainable operating systems have emerged. Therefore, the purpose of this study is to investigate the effects of the variables of food safety knowledge, attitude and behavior on each other for the hotel staff in Turkey by using structural equation modeling.

2. Material and methods

2.1. Model

Hygiene, sanitation and food safety are the most important issues that need to be paid attention for the hotel management. The fact that the necessary importance to these issues are not given during service and in the kitchen constitutes a threat to the health of staff and guests of the hotel (Gomes, Lemos, Silva, Hora, & Cruz, 2014). The aim of this study is to determine the level of food safety knowledge, attitude and behavior of hotel staff in Turkey. Moreover, the effects of these variables on each other using structural equation modeling are investigated. Based on the relationships illustrated in the research model in Fig. 1, hypotheses are formed as follows:

H_1:. Food safety knowledge has a direct effect on food safety behavior.

H_2:. Food safety attitude has a direct effect on food safety behavior.

H_3:. There is a statistically significant relationship between food safety knowledge and attitude.

2.2. Sampling plan

Because some individuals constituting the population of the study can not be reached, the way of sampling was preferred. In this study, a probabilistic sampling method was used to represent the population. A cross-sectional study of food safety was conducted over 498 people employed at hotels, from May 2015 to October 2015. The data of the research was collected through face-to-face interviews with a questionnaire.

2.3. Instrumentation

The questionnaire was piloted with 30 participants in April 2014 to confirm question clarity, identify response options, and gauge likely interview duration. Persons who agreed to participate in the study answered the questionnaire within 15 min. The revised questionnaire was divided into four sections and consisted of 66 statements:

(1) a demographic section
(2) the scale of employees' knowledge of food safety (20 questions)
(3) the scale of employees' attitudes towards food safety (20 questions)
(4) the scale of employees' behaviors towards food safety (20 questions).

In order to extract the valid items for food safety knowledge,

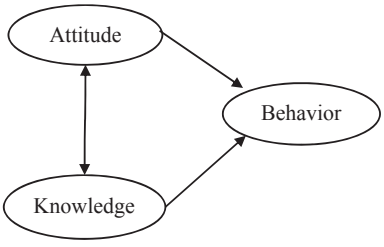

Fig. 1. Model development.