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Cultural Behaviours and Practices of Food Handlers in Hospitality: Examining the Influence of Individualism and Collectivism as Cultural Dimensions

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Abstract

The study investigates the relationship between food handlers' practices and the Individualism/ Collectivism (I/C) cultural dimension. Through a quantitative design, a scaling technique was used to collect data from all population subjects, including 296 food handlers working in five-star hotels in Petra, Jordan. Cronbach's alpha confirmed the reliability of the scale. Results of the Standard Multiple Regression revealed that food handlers' practices were positively associated with Individualism and negatively associated with Collectivism. Thus, the relationship between I/C and the practices of food handlers was established. Furthermore, the effects of a group of managerial dimensions on the I/C cultural behaviour of food handlers were examined. Several managerial implications were drawn, among which were the suggestions to recruit more individualistic food handlers in hospitality organisations. Also, these organisations were recommended to enhance individualistic characteristics through training to ensure better commitment to good food handling practices.

Keywords Individualism; collectivism; food handlers; hotel industry; Jordan

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Introduction

Nowadays, the world faces a critical paradox regarding food, the most crucial resource for human beings. On one hand, food must be available for a large number of people efficiently through mass production; on the other hand, there is increasing interest in food safety and its impact on public well-being (Uyttendaele et al., 2016). Unfortunately, many countries fail to manage this paradox optimally, leading to foodborne outbreaks (Grace, 2015). These outbreaks are a major constraint on countries' social and economic development and a key cause of mortality; it is estimated that 10% of people worldwide suffer from a foodborne disease (World Health Organization (WHO), 2022). Foodborne diseases negatively affect people's health and well-being (Akabanda et al., 2017). However, developing countries' foodborne outbreaks are more prevalent (Stratev et al., 2017). In low-middle income countries, food contamination costs around 110 billion US dollars each year in medical expenditure and productivity loss (WHO, 2022). In Jordan, as in other countries, many foodborne incidents have been reported (Al-Lahham et al., 1990; Khuri-Bulos et al., 1994; Kiswani & Nsour, 2007), most of which were triggered by Salmonella infection (Abdel-Dayem et al., 2014). A major issue that increases the difficulty of addressing the food safety challenge is the risk of food hazards that can occur at various steps in the food supply chain (McIntyre et al., 2013). A key source of these hazards is food handlers, due to their continuous direct contact with food throughout all stages of food production (Harakeh et al., 2005). Food handling malpractices are a major contributor to foodborne diseases worldwide (WHO, 2015). The majority of foodborne outbreaks are due to food handling malpractices in institutional food services (Kunadu et al., 2016). Consequently, food handlers should be the steppingstone for foodborne disease control. On the other hand, food handlers enhance food safety by playing a crucial role in the prevention of foodborne diseases (Sagoo et al., 2003). It has been established that food safety issues have a behavioural component in addition to their microbiological nature (Griffith & Redmond, 2009). Clayton & Griffith (2004) attributed food infection risk to infrequent and/or inadequate adherence to good food handling practices. For example, in their observational study, only 14% of food handlers were adequately washing their hands. However, the researchers also considered culture as a potential factor that may influence food handlers' efforts in controlling food safety. To investigate this, the current research examines the influence of culture on food handlers' practices, with a focus on the role of one of the national cultural dimensions: individualism vs. collectivism. Accordingly, the current study sheds more light on the practices of food handlers working in five-star hotels in Petra, Jordan. In general, catering services (including hotels) are responsible for a significant percentage of foodborne outbreaks (Griffith & Redmond, 2009). However, hotels are an essential component of the tourism industry, which plays a momentous role in the economies of developing countries (Aziri & Nedelea, 2013). In this context, any research that aims at improving any aspect of tourism product quality (such as food safety) will likely enhance tourism sustainability and its contribution to the economy. Ultimately, this is expected to improve the competitiveness of tourism destinations. This is truthfully significant for Jordan, where the tourism industry contributes 14% to the country's economy (USAID, 2017).

Literature review

The word 'culture' is rooted in its Latin origin "cultura" meaning agriculture. As time progressed, the word's meaning expanded to include all distinguishing symbols of nations (Hofstede & Hofstede, 2005). Nevertheless, different notions of culture consider

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it as a "social mechanism" that guides individuals' beliefs and values and controls their practices (Pizam, 1993). The culture's impact on individuals' behaviours has been confirmed by many studies on various practices including consumer behaviour (e.g., Nyamukapa & Kurebwa, 2022), service encounter (e.g., Ahmed et al., 2016), tourist behaviour (e.g. Chien-Chiang et al., 2022), management and leadership (e.g. Janicijevic, 2019) and food handlers' practices (e.g. Habiballah et al., 2017). One of the key aspects of health-related behaviours affected by culture is our beliefs and understanding of health and disease. As cited by MacLachlan (1997), a survey by Murdock (1980), which covered 189 cultures, revealed that different cultures have different beliefs about the causes of illness. In other words, culture is connected to the type and frequency of disease incidents in each society. For example, it has been proposed that collective cultures influence illness in a prophylactic manner, depending on the harmony within supportive groups (MacLachlan, 1997). Differences in people's understanding of illness and health may ultimately affect their practices in preventing and treating diseases, as confirmed in a study by Sulaiman et al. (2007), which was conducted on 52 Arabic and Turkish-speaking individuals in Australia. The study attributed the differences in understanding diabetes risk and its reduction opportunities to marginalisation and cultural factors. Accordingly, the researchers recommended considering these factors in any attempt to improve individuals' practices toward healthier behaviours. Similarly, a relationship is expected to exist between culture and food handlers' practices. "There is no culture without food". Food conveys several meanings, including being a taboo, medicine, and a source of security, all of which are localised within a nation's culture. In turn, culture influences different food habits, such as the types of food consumed, beliefs about what is safe to eat, food safety practices, and the ways adopted to control food hazards (Nordstrom et al., 2013: 358). These habits are believed to influence people's nutrition and the development of diseases (Aranceta, 2003). A clear example is street food vending, which is one of the cultural food habits that may threaten food safety. This was confirmed in a study by Joomun & Subratty (2000), which was carried out on 100 street food vendors in Mauritius. Another key cultural element for any nation that may influence food quality, security, and safety is the indigenous knowledge of any culture. An example of this knowledge is the African traditional techniques applied in producing palm wine and preserving cassava (Oniang'o et al., 2004). Hence, the facts about culture can help in understanding peoples' food-related practices and they must be considered in any interventions to control and/or improve these practices (Gittelsohn & Vastine, 2003).

Since culture affects society members' perception of food handling and safety, it is also expected to influence food handlers' practices. This was empirically confirmed by the study of Toh & Birchenough (2000), who examined 100 hawkers from various ethnic groups in Malaysia: Malay, Indian, and Chinese; researchers found differences in attitudes and knowledge about food safety amongst different ethnicities. In a more recent study by Habiballah et al. (2017), a significant variance in food handling practices was found among 250 restaurant employees based on differences in their nationalities. In general, controlling food safety relies on all food handlers within the food supply chain making the proper decision/action. However, these decisions are highly influenced by each individual's culture; therefore, different stakeholders within the global food industry believe that culture plays a more powerful role in controlling food handlers' practices than rules and regulations (Global Food Safety Initiative (GFSI), 2015). The previous discussion concludes that there is sufficient evidence indicating culture's influence on food handlers' practices. In Jordan, some studies have investigated factors affecting food handlers' practices (e.g., Osaili et al., 2011; Osaili et al., 2013; Habiballah et al., 2018; Osaili et al., 2021; Osaili et al., 2022); most of which focus on the Knowledge, Attitude, and Practices (KAP) model elements and their relationship with food handlers' practices. To the researchers' knowledge, only one study has empirically supported the aforementioned rationale (Habiballah et al., 2017) confirming the impact of different layers of culture (including the national one) on food handlers' practices. Researchers have been called for more specific studies on the relationship between food safety and culture, which is still not deeply comprehended by many in the food industry (Griffith et al., 2010). The current study, however, takes a more explicit approach to investigating the influence of national culture on food handlers' practices. It examines the relationship between one of the key national culture dimensions (Individualism & Collectivism) and food handlers' commitment to good food handling practices. Culture is defined as "a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein, 1992: 12). This definition highlights that culture consists of a set of shared solutions/assumptions among groups of people for addressing problems of external adaptation and internal integration. Scholars have sought to describe common problems shared by members of different societies. Each of them was composed of a cultural dimension that is defined as "an aspect of culture that can be measured relative to other cultures" (Hofstede & Hofstede, 2005: 23). According to Pizam (1993), over the past five decades, many social psychologists, sociologists, and anthropologists have developed numerous national cultural dimensions. These dimensions were created to deepen the understanding of culture and to facilitate the study of cultural differences between nations (Hofstede & Hofstede, 2005).

In a study by Søndergaard (1994), it was found that Hofestede's national cultural dimensions were the most adopted ones in different disciplines. The use of Hofestede's dimensions has continued to proliferate (e.g. Humphreys, 1996; Harvey, 1997; Furrer et al., 2000; Robbins & Stylianou, 2001; Kanousi, 2005; Chang, 2003; Cozna, 2011; Castle et al., 2021) which confirms the reliability and validity of these dimensions as an informative tool for analysing national cultures. Hofstede (1980, 1991, 2001) empirically identified a set of national cultural dimensions based on data collected from 116,000 questionnaires administered in more than 50 countries. These dimensions include: Power Distance (PD), which describes the emotional distance and dependency among individuals with different power levels; Individualism vs. Collectivism (I/C): where in individualistic societies, it is expected that each member looks after themselves and their immediate family, whereas in collectivist societies members from birth are integrated into cohesive, strong in-groups that offer protection throughout their

lives in exchange for unquestioning loyalty; Masculinity vs. Femininity (M/F): where in masculine societies, members are tough, assertive and concerned with material success, while their counterparts in feminine societies are modest, caring and focus on quality of life; Uncertainty Avoidance (UA) which relates to the degree to which society's members feel threatened by unknown and/or ambiguous situations (Hofstede & Hofstede, 2005). Hofstede (1991), argued that among these cultural dimensions, UA and PD, in particular, affect perceptions about organisations; additionally, they are connected to an organisation's members' motivation. On the contrary, M/F and I/C influence the way we think about individuals rather than organisations. Cultural and behavioural theories significantly consider the explanation of opposing beliefs (such as I/C dimensions) for the variance of individuals' voluntary compliance behaviour (such as health-related practices) (Baskozos et al., 2020). Hence, the employment of these beliefs in research was regarded as the most valid and appropriate methodology for explaining pathogen prevalence variance and infection control effectiveness across societies (Webster et al., 2021).

Nevertheless, even though some previous studies have investigated food handlers' practices in relation to their cultural differences, they were restricted to one layer of culture (national, organisational, or occupational), and none applied national cultural dimensions. The current research fills this gap by examining the predictability of I/C dimension on food handlers' practices. Factually, great attention was given in anthropology to the I/C dimension's predictability regarding society's membership effects on individuals' practices. The I/C dimension distinguishes people into segments based on their cognitive attributes rather than their demographic and/or physical characteristics (Singelis, 1994). The explanatory ability of the I/C dimension for people's behaviours was clearly established in health-related practices (Triandis et al., 1988). MacLachlan (1997) argued that members of collectivist societies tend to practice health behaviours towards people who belong to their group only and not towards individuals from other groups. Hence, it is expected that collectivist food handlers will tend to behave negatively towards the health of others (such as their customers) outside their in-group. Accordingly, a relationship is expected between the I/C dimension and the practices of food handlers; thus, two hypotheses were developed in this research to examine this relationship:

H1: The individual cultural traits of food handlers can predict the variance in their food handling practices.
H2: the Collectivism cultural traits of food handlers can predict the variance in their food handling practices.

In addition, many factors have been associated with the variance in individualism and collectivism scores across different societies. Among others, modernisation and the availability of resources were linked to individualism. Furthermore, individualistic cultures served as the primary source for most of the management and training methods applied worldwide, with claims that these methods were developed based on the values of such cultures. Moreover, in Hofestede's IBM study, it was observed that, in addition to countries, the variance in the individualism and collectivism dimension was associated with the type of occupation (Hofestede & Hofestede, 2005). Additionally, review of resources on this topic revealed a few factors identified in a theoretical context, including leadership style, organisational structure, communication style, performance measurement and reward system, and employee diversity (Monteiro, 2024). However, to the researchers' best knowledge, these factors have not been tested empirically. A few studies have minimally linked some of these factors, such as examining leadership styles in the context of organisational citizenships, with I/C to moderate this relationship (Kececi, 2017). On the other hand, employee diversity is one of the practices of human resources management that affects employee performance with a moderate effect of the cultural dimensions (individualism/collectivism) according to Triguero-Sánchez et al. (2018). Accordingly, based on the aforementioned discussion, the current study extends the understanding of the influence of the Individualism/Collectivism dimension on food handlers' practices by interpreting organisational factors that affect individuals' inclination toward this cultural dimension. These factors include the level of training received, the type of management (local or international), the type of occupation (food production or food service), and hotel classification. Hence, the following hypotheses were developed:

H3: There is a significant difference in the level of Individualism vs. Collectivism of food handlers who work in hotels of different classifications.
H4: There is a significant difference in the level of Individualism vs. Collectivism of food handlers' behaviour with the levels of training received.
H5: There is a significant difference in the level of Individualism vs. Collectivism of Jordanian and Non-Jordanian hotel food handlers.
H6: There is a significant difference in the level of Individualism vs. Collectivism among food handlers working in food service and those working in the kitchen.

Methods

The current study aimed to study the relationship between I/C dimensions and practices of food handlers empirically, using a survey research strategy. As part of this strategy, food handlers in five-star hotels in Petra were approached, including all employees working in food production and service areas (e.g., cooks, stewards, waiters ... etc.). In Petra, 549 employees work in six five-star hotels (Jordanian Ministry of Tourism & Antiques JMTA, 2022). Unfortunately, no specific statistics were available regarding food handlers in these hotels; therefore, the entire population was targeted in the data collection stage.

To collect primary data, a self-administered questionnaire was employed, comprising three sections of measures. The first section included ten items designed to evaluate how frequently food handlers follow safe food handling practices, using a five-

point scale (1= Never; 2= Occasionally; 3= Sometimes; 4= Frequently; 5= Whenever it is necessary); these items were developed based on the guidelines of safe food handling practices established by the Food and Agriculture Organization (FAO), Pan American Health Organization (PAHO) and World Health Organization (WHO) (FAO et al., 2017). The second part of the questionnaire was designed to identify respondents' cultural characteristics based on the I/C dimension established by Hofstede (1980). However. This section was divided into two subsections that measure the I/C dimension as two separate constructs (Individualism & Collectivism), rather than treating it as a single continuum with two extremes. This approach was adopted because the study assesses the I/C cultural dimension at the individual level (study subjects) rather than at the societal level (Hofstede & Hofstede, 2005). According to Cozna (2011), the I/C dimension has been reconceptualised by many researchers for individual analysis to explain varying cultural patterns. Consequently, the questionnaire included two groups of scaled questions, measuring Collectivism and Individualism separately. These questions were developed using the dimensions of Allocentrism and Idiocentrism, which represent the psychological aspects of the Collectivism and Individualism dimensions, respectively. Furthermore, these attributes are useful when measuring the Individualism and Collectivism dimensions at the individual level the unit of analysis; where Allocentrism's attributes relate to the Collectivism dimension and Idiocentrism's attributes relate to the Individualism (Triandis, 1994). The measures (attributes) were set up following a five-point Likert scale (where 1= 'strongly disagree' & 5= 'strongly agree). Finally, the questionnaire's third part was designed to collect respondents' demographics information using three nominal-scale questions about nationality, gender, and age. After developing the questionnaire, it was pilot-tested, and fortunately, no major amendments were necessary. Subsequently, the questionnaire was distributed to all food handlers in five-star hotels in Petra city, resulting in 296 collected responses, with a good response rate of 84%. The reliability of the questionnaire was assessed using Cronbach's alpha analysis, which indicated a strong internal consistency, with a value above 0.7 (Cavana et al., 2000). The sample was profiled based on descriptive statistics, and continuous descriptive statistics were used to describe the study's variables. Finally, Standard Multiple Regression was applied to test the hypotheses.

Results

Sample profile

Most of this study's participants (86.5%) were male, aligning with the gender distribution for the five-star hotel workforce in Petra, where 98.1% of employees are male (JMTA, 2022), confirming the study's sample representativeness to its population. According to Hegab, as cited by Atiyyah (1997), Jordanians who are strongly committed to their tribal traditions, often believe that a woman's ideal role is within the home. Furthermore, 90.9% of the participating employees were Jordanians, a percentage closely mirroring the population distribution, where 97.2% are Jordanians (JMTA, 2022). The sample also leaned toward younger workers, with 82.8% of participants under 35 years old.

Descriptive measures of research variables

The first and second sections of the questionnaire were designed to collect data on the research variables using a five-point Likert scale. The data collected from these sections were analysed using descriptive statistics for continuous variables, including mean and standard deviation, as presented in Tables 1 and 2.

Food handlers' practices

The results presented in Table 1 indicate that food handlers demonstrated a moderate overall commitment to good food handling practices, with a mean score of 3.45.

Table 1. Descriptive statistics of food handlers' practices scale

No.	Item	Mean	SD
1.	Prepare foods at a temperature that is enough to control food poisoning	3.48	1.38
2.	Monitor refrigerators and food holding equipment's temperature to ensure that food is kept safe	3.22	1.39
3.	Keep cooked foods away from uncooked foods	3.28	1.43
4.	Not use the same utensils to handle cooked foods and uncooked foods	3.21	1.44
5.	Prepare food half an hour before its consumption.	3.07	1.25
6.	Wash and dry hands adequately	3.77	1.19
7.	I wash & sanitise vegetables & fruits properly before using them for preparing food.	3.58	1.38
8.	I wear clean & proper clothes (such as a hat or net) that prevent my hair from falling to food.	3.35	1.41
9.	I remove all jewellery & other accessories from my hands before handling food.	3.36	1.44
10.	I smoke outside the place of food handling.	3.13	1.36
Overall mean		3.45	

The results above also indicate that most of the facets measuring food handlers' practices were strongly agreed upon. Among these measures, proper washing and drying of hands before handling food scored the highest mean (item 6: M=3.77; SD=1.19) whereas the lowest means were for food handlers' commitment to smoke outside the food handling area (Item10: M =3.13; SD=1.36) and their commitment to preparing food on the right time close to its consumption (Item 5: M =3.07; SD=1.25).

Individualism and collectivism dimensions

As shown in Table 2, food handlers working in five-star hotels in Petra city exhibit a stronger tendency toward collectivism (M=3.30) than individualism (M=3.07). The results also revealed that some of the collectivism aspects were distinguished, including the attribution of good practices to cooperation with others in the workplace (item 17: M=3.52, SD=1.22) and the differentiation of individual's behaviour within the family context from that at the workplace (item 18: M=3.38, SD=1.38). On

the other hand, the most distinct aspect of individualism was the association between an individual's effort for the benefit of their community and the expectation of payment in return (item 14: M=3.40, SD=1.12).

Table 2. Descriptive statistics of individualism and collectivism dimensions

No.	Item	Mean	SD
	Individualism		
11.	It is better to leave it and work alone if the group is slowing me down,	2.81	1.2
12.	It annoys me when others perform better than I do	2.99	1.2
13.	My happiness is unrelated to the well-being of my co-workers	3.09	1.15
14.	I believe people should not be expected to do anything for the community unless they are paid for it	3.40	1.12
	Overall mean	3.07	
	Collectivism (Allocentrism)		
15.	It takes me a long time to establish a friendship, but my friendships are close long-lasting friendships	3.15	1.19
16.	I have a stronger relationship with my family/relatives than with my work colleagues	3.13	1.27
17.	If there is a failure in performance, this will be due to the lack of cooperation among colleagues in the workplace	3.52	1.22
18.	My behaviour differs when I am with my family/relatives from this within the workplace	3.38	1.38
	Overall mean	3.30	

Study's hypothesis testing

To examine the study's hypotheses, a standard multiple regression analysis was conducted. Prior to performing the regression analysis, key assumptions were verified. First, multicollinearity was assessed by testing the correlation between the study's variables. Both independent variables (Individualism & Collectivism) showed substantial correlations with food handlers' practices (r = 0.756 & r = -0.483 respectively) while not correlating excessively with each other (r = -0.42). Also, the results of the Tolerance test, all above 0.10, and the Variance Inflation Factor (VIF) values, all below 10, confirmed that the multicollinearity assumption was no violated. Second, outliers were assessed using Mahalanobis distances. the critical value for comparison in the alpha level of 0.001 and a level of freedom of 2 equals 13.82 (Tabachnick & Fidell, 2001); after checking the data file, no case was found that exceeds the critical value of Mahalanobis distance; in other words, no outlier case was found in this research data. Thereupon regression analysis has proceeded, its results are presented in Table (3).

Table 3. Multiple regression coefficient values of I/V

Variable	Standardized coefficient "Beta"	Sig.	$(PCC*)^2$
Collectivism	- 0.2	0.000	0.0331
Individualism	0.672	0.000	0.370
R square	60.5%		
Sig	0.000		

The statistical results presented in the table above indicate that the study model (composed of 2 variables: Collectivism & Individualism) significantly predicts food handlers' commitment to good practices in handling food. This model explains 60.5% ($P \leq 0.001$) of the variance in food handlers' practices. Moreover, the results indicate that all independent variables of the current study (Individualism and Collectivism) contribute significantly to the explanation of variance in food handlers' practices. Of these constructs, Individualism makes the largest unique contribution ($\beta = 0.672$, $P \leq 0.001$). based on these findings, it was decided to accept the study's hypotheses. In addition, a look at the sign of Beta values for the model's constructs indicates that each variable affects food handlers' practices differently. More specifically, the present study found that Individualism has a positive association/effect on food handlers' practices, while Collectivism has a negative effect. To assess the factors influencing food handlers' inclination toward the individualism versus collectivism dimension, differences in their individualism and collectivism scores were measured across various groups of food handlers. These groups were formed based on organisational variables proposed in the study's hypotheses. Tests of variance, including one-way ANOVA and independent sample t-test were applied to analyse the significance and magnitude of differences in food handlers' scores of individualism versus collectivism as discussed below. To assess the impact of hotel classification and training on food handlers' inclinations toward both ends of the I/C dimension, a One-way ANOVA was employed to test hypotheses 3 and 4.

Table 4. One-way ANOVA test for hotel classification and training

Variable	Group	N	Mean	SD	F	df	p	Eta sq.
	Individualism							
Hotel classification	One star hotel	50	2.33	0.84	39.501	4	0.000	0.351
	Two stars hotel	50	2.19	0.77				
	Three stars hotel	59	3.13	0.87				
	Four stars hotel	61	3.55	0.97				
	Five stars hotel	76	3.70	0.72				
Training	No training	108	2.30	0.81	72.232	2	0.000	0.33
	Informal training	76	3.34	0.97				
	Formal training	112	3.62	0.78				
	Collectivism							
Hotel classification	One star hotel	50	2.98	0.59	17.377	4	0.000	0.192
	Two stars hotel	50	2.76	0.68				
	Three stars hotel	59	3.08	0.63				
	Four stars hotel	61	2.44	0.93				
	Five stars hotel	76	2.10	0.88				
Training	No training	108	2.89	0.64	24.656	2	0.000	0.144
	Informal training	76	2.87	0.75				
	Formal training	112	2.21	0.94				

As provided in Table 4, the results demonstrate that there are statistically significant differences in the scores of individualism and collectivism amongst hotel classifications: F(4,291)= 39.501, F(4,291)= 17.377, for collectivism; training level:

F(2,293)=72.232. Accordingly, hypotheses 3 and 4 are accepted. However, although these results imply that hotel classification and food handlers' training level affect both ends of the I/C dimension significantly, the results reveal that the direction of the aforementioned effects is different for each end; This is clearly illustrated in the plot charts below.

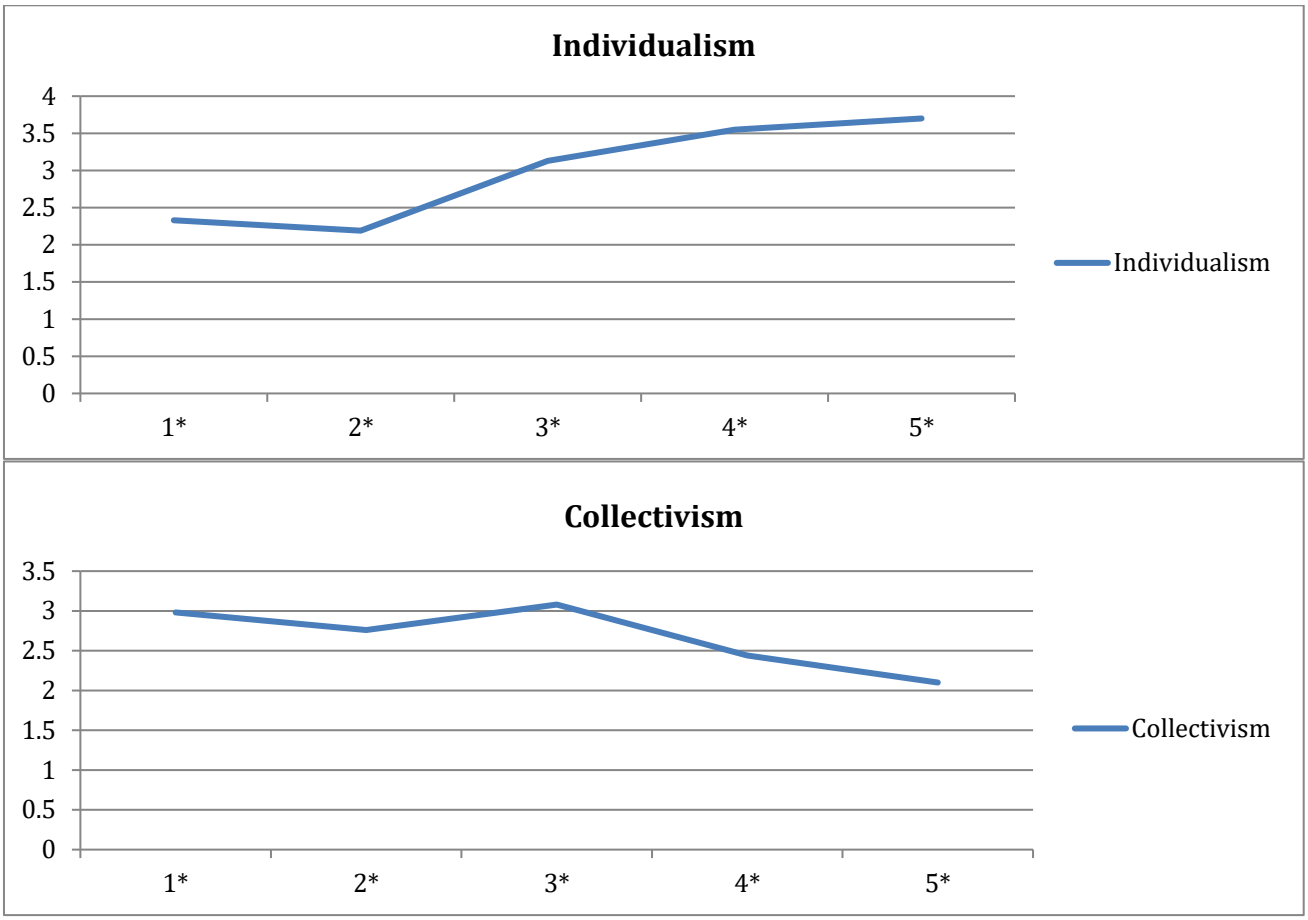
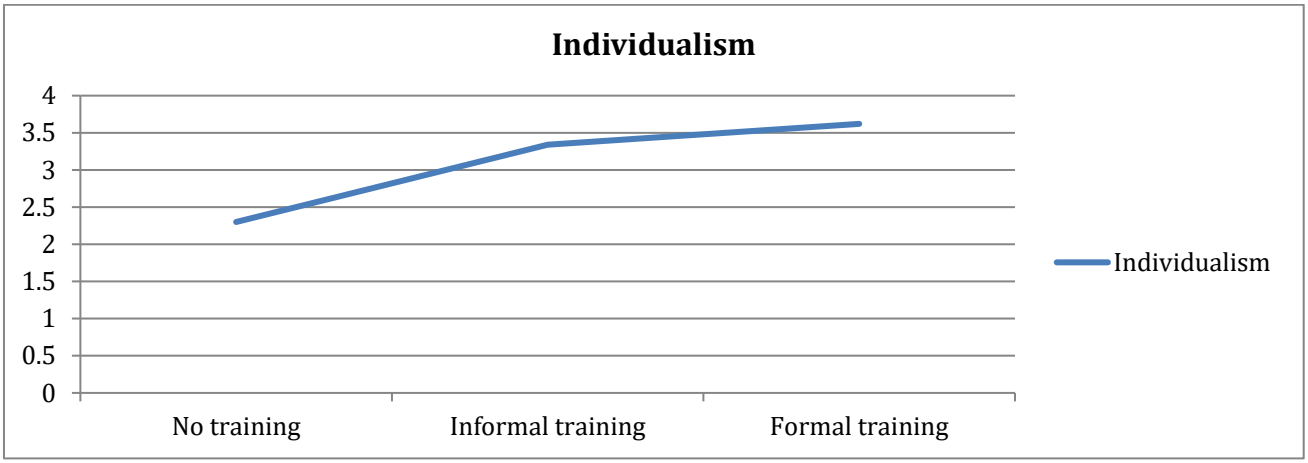


Figure 1. Means plots for hotel classification effects on individualism vs. collectivism

As illustrated in the charts above, the higher the hotel's classification, the greater its impact on hotel employees' tendency toward individualism. This was expected since hotel classification in general is established based on the size of investment (in terms of size of buildings, available facilities etc.); so, the increase of hotel classification brings a richer workplace environment with more modern technology and more resources. Such an environment is usually associated with individualistic attitudes and behaviour. Likewise, charts in Figure 2 demonstrate another distinction in the form of effect caused by training on food handlers' tendency toward individualism versus collectivism. As shown in the charts below, the increase in food handlers' level of training is associated with higher scores of individualism and lower scores of collectivism. The highest means of individualism were observed among food handlers who received formal training. In formal training, modern methods are typically used, which were originally developed in individualistic cultures and were based on their individualistic values.



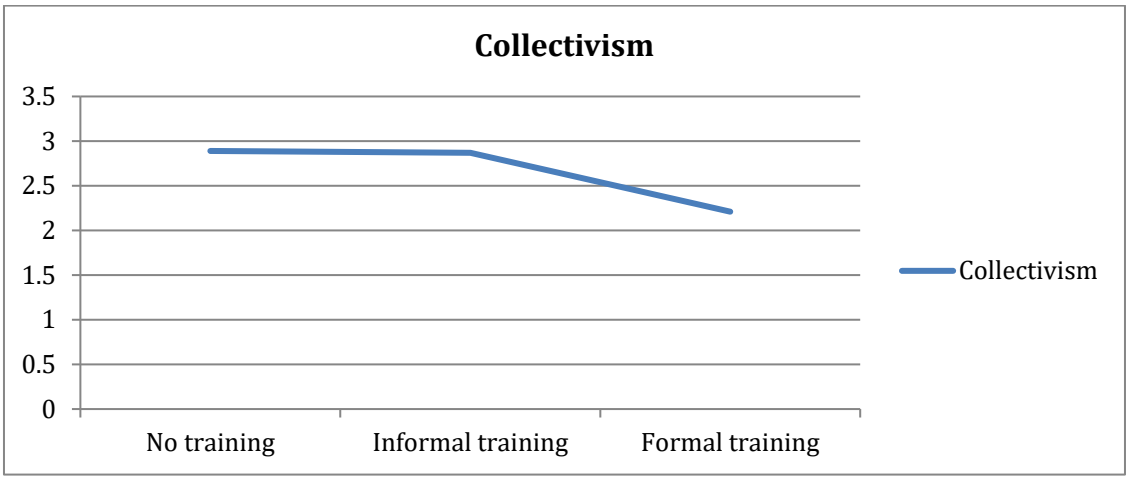


Figure 2. Means plots for training effects on individualism vs. collectivism

In addition, hypotheses 5 and 6 were tested to explore the impact of food handlers' job type (kitchen vs. food service) and hotel management type (Jordanian vs. Non-Jordanian) on their individualism versus collectivism scores, using independent sample t-test analysis.

Table 5. **Independent sample t-tests for nationality and place of work**

Variable	Group	N	Mean	SD	T	p	Eta
Individualism							
Type of management	Jordanian	80	2.19	0.85	10.58	0.000	0.273
	Non-Jordanian	216	3.39	0.89			
Place of work	Foodservice	87	2.31	0.91	9.28	0.000	0.226
	Kitchen	209	3.38	0.9			
Collectivism							
Type of management	Jordanian	80	2.99	0.59	-5.59	0.000	0.096
	Non-Jordanian	216	2.49	0.89			
Place of work	Foodservice	87	2.94	0.67	-4.66	0.000	0.068
	Kitchen	209	2.5	0.89			

The results presented in Table (5) reveal highly significant differences in individualism between food handlers working in hotels managed by non-Jordanian companies (Mean=3.39, SD=0.89) and those in Jordanian hotels (Mean=2.19, SD=0.85); t(296)=-10.58, p=0.000; also, significant differences were found in collectivism between food handlers working in non-Jordanian hotels (Mean=2.49, SD= 0.89) and in Jordanian ones (Mean= 2.99, SD= 0.59); t(296)= 5.59, p= 0.000 confirming the impact of organization management on employees attitude toward individualism versus collectivism dimension. Furthermore, the results in the table above show a statistically significant difference in individualism t(296)=-9.28, p=0.000 between foodservice employees (M=2.31, SD=0.91) and those working in the kitchen (M=3.38, SD=0.9); also, the results reveal a significant difference in collectivism between foodservice employees (M=2.94, SD=0.67) and kitchen staff (M=2.5, SD=0.89); t(296)=4.66, p=0.000. Accordingly, hypotheses 5 and 6 are accepted. Observing the magnitude of effect for different variables through the Eta squared values (Table 4 & 5) reveals that all examined factors influenced a moderate-to-large effect size (6.8%-35.1%). Among these factors, hotel classification and type of hotel management have the largest percentages of explanation for the variance of individualism vs. Collectivism dimension. Furthermore, the Eta squared values for the examined factors (hotel classification, management, occupation & training) were higher for individualism than for collectivism. In other words, these factors appear to play a stronger role in fostering individualism among employees.

Discussion

Many scholars (e.g., Hall & Hall, 1990; Hofstede & Hofstede, 2005) have asserted that culture plays a significant role in shaping individuals' behaviours. However, existing studies investigating the association between food handlers' practices and culture (e.g., Toh & Birchenough, 2000 & Habiballah et al., 2017), have limited their discussion to the superficial impact of national culture on food safety practices. The present study delved deeper into the research by focusing on one of the key national culture dimensions (I/C) to explore the concealed reality of national culture influence on food handlers' practices, revealing that 'individualist' food handlers commit more to safe food handling practices than 'collectivist' ones. The findings of this study provide empirical evidence about the explanation of the I/C dimensions to food handlers' behaviour as an example of health behaviour. The results demonstrate that collectivist individuals exhibit less safe food handling practices than their individualist counterparts, contradicting arguments put forward by some authors (cf. Naroll, 1983 & Triandis et al., 1988), that collectivistic communities are generally healthier than individualistic ones. Nevertheless, the superiority of collectivist communities' health was ascribed to the strong support, sharing, and harmony that individuals receive from their in-groups, such as their neighbours and extended family, rather than to better practices within these communities. However, this contradiction is justified due to the present study's adoption of individuals as a unit of analysis instead of society in its investigation of health behaviour (food handlers' practices). From another point of view, the findings of the present study are aligned with the established view that collectivists tend to behave in a healthy manner only toward in-group members, rather than towards individuals outside their

group (Hofstede & Hofstede, 2005). In addition to the aforementioned discussion, there are several factors associated with food handlers' cultural behaviour to I/C in the workplace according to the literature, and that is established in the current study's findings. Management of different types of restaurants/hotels (e.g., international or local, corporate-owned or individual-owned) influence food safety practices and attitudes among employees (Faour-Klingbeil et al., 2015). On the other hand, and to stress culture and other factors related to food handling practices, a study by Who et al. (2016) found that migrant food handlers' knowledge and practices showed differences when it is analyzed by nationality, attendance of training, and educational level. Furthermore, within individualist cultures, there are differences in individuals' behaviours; the same thing applies to collectivist cultures (Triandis et al. 1988). Hence, it is important that such differences can be bridged with proper training (Triandis et al. 1988; Perez-Floriano, 2001). It is established, though, that training in cultural differences, as well as training on handling different cultural aspects when performing job duties, is essential. Accordingly, the cultural background of food handlers, plus the level of training they receive has an impact on their food handling behaviour. Therefore, and based on the majority of studies on cultures, that referred to nationality and ethnic groups to study cultural differences, nationality is one of the major determinants of cultural behaviour. In addition to that, Larson (2021) explored food safety responsibilities as a comparison among four countries, claiming that preferences varied by country and among food handling groups (farmers, transporters/distributors, retailer grocery stores/restaurants, and consumers), which indicates that the role of food handler in the food handling cycle may be affected based on the cultural group they belong to. This discussion is particularly applicable to food handlers working in commercial food service establishments (such as hotels), and who handle food for members out of their groups (customers). In addition, Sirias et al. (2007) proposed an interesting finding consistent with the current study regarding I/C teams. They stressed that team-building strategies should encourage individual identity and personal values among the group, which means that each member of the team is encouraged to be individualistic in behaviour to be a successful member of a group. In other words, it can be concluded that individualist food handlers handle food more safely than those who are collectivists.

Conclusion

The present study identified a positive effect of Individualism and a negative effect of Collectivism on food handlers' practices. It is suggested that public authorities should take these findings into consideration whenever laws, regulations, or policies related to culture are handled. Authorities can use some national culture aspects to encourage healthy practices (such as good food handling practices) in their societies. For example, governments can enhance the individualism of society's members in relation to job-related practices by using tools such as media and public education. However, in societies like Jordan, where tribal traditions rule some aspects of life, it may be difficult to change their members' cultural beliefs; instead, traditional methods of communication (such as tribal gatherings) could be used to encourage society's members to perceive out-group members (such as visitors or customers) as relatives in a larger group which is humanity. Furthermore, authorities' communication messages can remind society's members that malpractices towards others out of their groups may have negative reflections on the whole society's members from all groups; for example, if a food-borne disease takes place in a certain society, its microbes will not distinguish between in-group or out-group members. In addition, as business implications, recruitment procedures should take into consideration assessing the individualistic/collectivistic characteristics of potential job candidates. Food handlers need to be more individualistic, even if they are in a collectivist society. Also, human resource management needs to identify individualistic aspects and work on enhancing them for better commitment to good practices. Among the ways to enhance this are: creating awareness, training, team building based on common characteristics, and rewarding best practices. One more issue to consider here is creating policy guidelines that encourage competition, reward personal achievement, and enhance self-learning. Finally, training is a valuable tool for addressing various challenges in the hospitality industry, one of which is the safety and health of food customers. Accordingly, training can be employed to enhance food handlers' commitment to good food handling practices. Training programs for food handlers may involve a cultural oriented course(s) that enhance some individualism psychological values to improve trainees' sensitivity toward the health of others (such as customers) from other social groups.

Limitations and further research

The present research succeeded in establishing a relationship between I/C and food handlers' practices. This suggests that exploring other national cultural dimensions in relation to food handling practices could be a fruitful area of research. It is suggested that a wider range of aspects of national culture be explored in order to gain a broader understanding of food handlers' behaviour. Furthermore, the study's findings showed that the concepts were reliable and valid measures of the I/C dimension for food handlers working in the hotel industry. Future research can therefore apply these scales to explore the predictability of the I/C dimension for different health-related practices in different service sector contexts. The present study employed only four researchers as fieldworkers due to financial constraints. If more fieldworkers were available, a wider range of food industries could be targeted, and the research could be extended to cover a larger population, or to compare different cultural groups, which in turn enhances the study findings' generalisation and the validity of its model. Accordingly, more research is recommended to validate this study's model in other food industries, particularly those in which human activities are highly involved in food handling to better understand food safety behaviour.

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