

Exploring the culture of food safety: The role of organizational influencers in motivating employees' safe food handling practices

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**EXPLORING THE CULTURE OF FOOD SAFETY: THE ROLE OF
ORGANIZATIONAL INFLUENCERS IN MOTIVATING EMPLOYEES' SAFE FOOD
HANDLING PRACTICES**

ABSTRACT

The role of organizational influencers on foodservice employees' motivation to follow safe handling practices was explored. Data were collected from 311 employees with no supervisory responsibilities working in commercial and non-commercial foodservices. Employees identified level of agreement with eight organizational influencers that motivate them to follow safe food handling practices. Data were analyzed to determine if differences in motivation by influencers existed among employees with different demographic characteristics. Age, years of foodservice experience and work status impacted motivations of both commercial and non-commercial employees. Future research could test a comprehensive measure of organizational influencers on employees' safe food handling practices.

KEYWORDS organization, motivation, safe food handling practices, foodservice, commercial and non-commercial operation.

INTRODUCTION

Safety is an important quality attribute of food served in retail foodservices. Food production requires an effective food safety management system coupled with an appropriate culture to ensure the quality of food served (Griffith, Livesey, & Clayton, 2010b). Recently, researchers have identified the important role the organization plays in influencing employees' safe food handling practices. Undesirable food handling practices are often deeply rooted in the work environment and not easily changed, even by the most imaginative training programs (Sheppard, Kipps, & Thompson, 1990). Mitchell, Fraser, and Bearon (2007) claimed that food safety interventions in the foodservice environment were more likely to be effective if the organizational context was taken into consideration. Exploring employees' safety perceptions about their work environments in greater depth may be beneficial to encourage improved food safety behaviors, and therefore food quality (Clayton & Griffith, 2008). Yiannas (2008) argued that the importance of organizational factors in improving workers' safety behaviors has been proven in occupational and health fields, thus the foodservice industry could follow similar steps to ensure safety of food.

Studies in the area of industrial manufacturing have revealed that organizational and cultural factors are underlying causes of accidents (Brown, Willis, & Prussia, 2000; Cox & Cheyne, 2000). Employees' perceptions regarding various organizational factors have been associated with accident rates. One study, conducted in healthcare organizations, showed that one significant predictor of adherence to hand washing precautions among healthcare workers was active involvement and commitment by administration (Larson, Early, Cloonan, Surgue, & Parides, 2000). Studies have indicated a link between employees' perceptions of work environments and individual behaviors within these work environments. Previous research has

identified various organizational aspects that affect employee behavior. Researchers found four themes that appeared relatively persistent: 1) management/supervision (e.g. perceived commitment to safety), 2) system (e.g. procedures, practices, and equipment), 3) risk (e.g. attitudes toward risk taking), and 4) work pressure (e.g. work pace) (Flin, 2007; Guldenmund, 2000). In addition, the influences of organizations vary not only across different organizations, but also between different units, groups and department levels (Zohar, 2003).

The notion of a work place food safety culture has recently become a topic of interest in food safety management and quality control. Organizational food safety culture has been viewed as an important risk factor to predict foodborne illness outbreaks in foodservice industries; one study found that more than 40% of non-compliance with safe food handling practices was due to poor organizational food safety culture (Clayton & Griffith, 2008). Powell, Jacob and Chapman (2011) evaluated causes of reported foodborne outbreaks in organizations such as John Tudor & Son in 2005, Maple Leaf Foods, Inc. in 2008, and Peanut Corporation of America in 2009, and found evidence of poor food safety cultures. The critical roles that foodservice employees play and their responsibilities for preventing foodborne illness outbreaks have been reported (Howells et al., 2008). Human error is a major contributing factor in foodborne illnesses; poor personal hygiene, time and temperature abuse, and cross contamination have been identified as the most common underlying causes of foodborne illnesses in retail foodservice (Clayton & Griffith, 2008; FDA, 2000). As such, employees are one of the key elements in the success of food safety outcomes. Education and training have been the usual means of preventing and reducing foodborne outbreaks in foodservices (Mitchell et al., 2007). Yet, many hospitality organizations pay scant attention in trying to understand their employees' motivations to follow food safety procedures. It is known that an employee's work environment is considered to be one of the

primary determinants of employee motivation as it relates to productivity (Sledge, 2008).

Researchers have shown that employee motivation is the result of an individual's background and the organizational environment in which the employee works (Crewson, 1997; Jurkiewicz, 2000; Kacmar, Carlson, & Brymer, 1999; Griffith & Neal, 2000). Employees' motivations are linked to how employees regarded their organizations (Sledge, 2008).

Although awareness is increasing about the role the organization plays in employees' safe food handling practices, empirical work examining the influence of the organization in ensuring food quality, specifically safe food, is lacking. Hence, this exploratory study investigated the perceived role of the organization in motivating employees to follow safe food handling practices in the foodservice industry. More specifically, this study explored the following questions:

- 1) What are commercial and non-commercial foodservice employees' self-reported levels of agreement with how their organizations motivated them to follow safe food handling practices?
- 2) What are the variations in how organizations motivated employees of different demographic characteristics (i.e. age, years of foodservice experience, employment status) to follow safe food handling practices in commercial and non-commercial foodservices?

LITERATURE REVIEW

Organizational culture and employee safe food handling practices

The influence of workplaces on employees' work performances has been widely explored in the organizational culture research. Guldenmund (2000) defined organizational culture as "a relatively stable, multidimensional, holistic construct shared by a group of organizational

members that supplies a frame of reference and which gives meaning to and or is typically revealed in certain practices” (p. 225). Organizational culture represents a common perception held by members of the organization. It is viewed as a system of shared meaning that distinguishes one organization from another. Furthermore, employees’ shared beliefs, attitudes, and values about their organization, its function and purpose can vary from division to division, department to department, workgroup to workgroup, and from individual to individual (William, Dobson, & Walters, 1989). The concept of organizational culture served as the underpinning to study a specific area of organization and employee performance. Safety culture is one of the most widely researched topics in the occupational and health field and has been found relevant if applied to the food safety area (Griffith, Livesey & Clayton, 2010a; Yiannis, 2008). It is also important to note that the term safety culture is often used interchangeably with the term safety climate in the literature. A number of researchers have proposed that safety climate provides a surface assessment of employees’ attitudes toward safety at a given point in time based on specific criterion; this could represent a snapshot of the prevailing safety culture (Flin, 2007; Guldenmund, 2000). Culture is difficult to measure, whereas safety climate can be tracked (Griffin & Neal, 2000).

The concept of safety culture emphasizes ways of improving and enhancing safer work practices. Initiatives to measure safety culture in healthcare organizations proliferated when this was identified as a key determinant of the ability to address and reduce risks to patients (McCarthy & Blumenthal, 2006). Recognition of the critical need to assess culture and the impact of innovative interventions aimed at improving the culture has led to the development of surveys designed to measure safety culture (Singer et al., 2007). Similarly, the predictive ability of industrial safety culture measures on employees’ safety behaviors has been widely researched

(Clarke, 2000; Zohar, 2003). Safety culture is a context-specific concept; therefore various instruments have been developed to measure safety culture for a particular industry.

Adaptation of safety culture concepts into food safety culture has been recently proposed in managing food safety and improving compliance with safe food handling practices having the overall goal of providing quality food and preventing foodborne illnesses. Researchers asserted that the importance of safety culture in improving workers' safety behaviors in occupational and health fields is an analogous concept that can be applied to the foodservice industry (Griffith et al., 2010b; Yiannas, 2008). Food safety culture has been defined as "the aggregation of the prevailing, relatively constant, learned, shared attitudes, values and beliefs contributing to the hygiene behaviors used within a particular food handling environment" (Griffith, 2010a, p.435). It has been suggested that organizations measure and manage their food safety cultures. Organizations can evaluate current food safety performance and prevent food poisoning outbreaks by continuously assessing the prevailing culture.

Organizational culture and motivation to follow safe food handling

Despite the variability in what constitutes safety culture measures in safety science studies, there is increasing evidence that the safety culture may play a key role in organizational safety performance outcomes (Gershon, et al. 2000). Various safety performance indicators to evaluate organizational safety culture have been used. In the healthcare setting, exposure incident history, occupational injuries, rate of incidents reporting (Gershon, et al. 2000), as well as self-reported safety practices and compliance (Griffin & Neal, 2000) have been utilized. Outcome measures such as accident rates, near misses, and errors incidents have been used to measure safety performance.

Previously, researchers studied motivation as an indicator of safety performance, which has been identified as a determinant of safety performance among employees (Neal, Griffin, & Hart, 2000). For instance, a study in healthcare settings reported a significant effect of safety culture on nurses' motivation toward patient safety (Kudo et al., 2009). Nurses' motivation to prevent medical mistakes was found to be significantly influenced by three important organizational factors related to communication, workload, and reporting system. Other studies have also found that employees' motivation mediate the influence of safety culture on employees' safety performance. Neal et al. (2000) suggested that in the healthcare sector, the safety culture influenced motivation to comply with safety practices. This study concluded that motivation is one of the significant determinants of safety performance, thus organizations need to motivate employees if improvements in the safety culture are to have any impact on safety performance.

Previous work on employees' motivation to follow safe food handling practices has reported varying influences of employees' demographic characteristics as to what was perceived as motivating their practices (Ellis, Arendt, Strohbehn, Meyer, & Paez, 2010). The role of four motivational factors to follow safe food handling practices: internal motivation, communication, reward-punishment, and resources varied across employees of different ages, genders, years of foodservice experience, place of employment, and job status. Studies have also shown that work motivation is dependent, not only on the sector of employment, but also on employees' demographic characteristic such as age, gender and education (Crewson, 1997; Jurkiewicz, 2000; Kacmar, Carlson, & Brymer, 1999). Thus, it is postulated that employees' food safety practices differ based on their motivations, which are influenced by demographic characteristics and organizational culture.

METHOD

Sample and data collection

The sample for this study consisted of employees without supervisory responsibilities from commercial (e.g. restaurant) and non-commercial (e.g. schools, universities, and hospitals) foodservice organizations. The sample was selected using convenience sampling; questionnaires were distributed by managers to employees at foodservice operations in the Midwest area and to attendees of foodservice trade shows at state and national meetings. Foodservice operations were contacted prior to questionnaire distribution. Researchers explained the project and the research procedures to managers to help improve participation rates by employees. Managers distributed questionnaires that could be completed at will by employees and returned with postage pre-paid. Researchers attending trade shows, held in conjunction with state and national professional meetings, asked prospective participants if they had any supervisory responsibilities. If the answer was negative, participants were asked to complete the questionnaire, and provided a “thank you” gift for doing so.

Measurement

This study employed a questionnaire measuring influencers to follow safe food handling practices developed from a study conducted by Ellis et al. (2010). The questionnaire consisted of eight items measuring workplace influencers in motivating respondents to follow safe food handling practices. Respondents were asked to rate their level of agreement with each of the influencers using a 5-point Likert-type scale (ranging from 1 = strongly disagree to 5 = strongly agree). The items included on the questionnaire and terms used were: 1) organization provided the needed things to practice food safety (facilities); 2) organization had policies and procedures on food safety (policy and procedure); 3) organization trained me about safe food handling

(trained employee); 4) organization trained my supervisor about food safety (trained supervisor); 5) organization explained what was expected of me with regards to food safety (communication); 6) organization valued food safety (value); 7) organization made food safety fun (fun); and 8) organization continued doing what they are doing (common practices).

Data Analyses

Researchers sorted the completed questionnaires into useable and unusable ones according to respondent's current job position. Data from respondents with supervisory responsibilities were excluded from analysis. Descriptive statistical analysis was conducted on mean agreement scores for each variable based on type of foodservice operation.

Correspondence analysis (CA) was performed to evaluate the relationship between organizational influencer mean scores and respondents' ages, years of foodservice experience, and work status. CA is a multivariate analytical tool used for exploratory purposes that requires no assumptions underlying the structure of data (Greenacre & Blasius, 1994). It is a versatile statistical method that gives a powerful representation of the association between categorical variables by providing a comprehensive view of the data for effective interpretation. CA requires categorical data and is based on the analysis of the contingency table through the row and column profiles (Clausen, 1998). The purpose of using CA is to map the relative frequencies in terms of the distance between individual row and column profiles in a two-dimensional space (Greenacre, 2007). CA scales the rows and columns in corresponding units so that each can be displayed graphically in the same two-dimensional space. The approach taken by Chen (2000, 2001) in applying CA technique on continuous data was adapted. Table 1 provides an example of the contingency table produced from this approach. The scale of 4 (agree) and 5 (strongly agree) were recoded as "agree", and the scale of 1 (strongly disagree), 2 (disagree) and 3 (neutral) were

grouped as “disagree”. All eight organizational influencer scores were transformed into 8 x 4 contingency tables. Row profiles correspond to the relative frequencies of respondents who agreed and disagreed within each organizational influencer. Analogously, column profiles represent the relative frequencies of the different organizational influencer within each respondent’s work status (Table 1). Dimension 1 is represented by the horizontal axis; dimension 2, the vertical axis.

TABLE 1 Contingency Table of Organizational Influencers and Respondent’s Work Status

Organizational influencers	G1	G2	G3	G4
Facilities	52	78	9	15
Policy and procedure	54	82	7	12
Trained employee	50	77	11	17
Trained supervisor	49	73	12	20
Communication	53	75	8	18
Value	50	79	11	14
Fun	40	72	21	22
Common practice	50	66	11	27

Note. G1 = Full-time respondents who expressed agreement, G2 = Part-time respondents who expressed agreement, G3 = Full-time respondents who expressed disagreement, G4 = Part-time respondents who expressed disagreement.

The results of CA can be interpreted in terms of the proximity between organizational influencers and respondents’ characteristics in the joint space display. Variables that are close together in the display suggest association between corresponding categories (Greenacre, 2007). Although distances between categories of respondent demographic and organizational influencers are not mathematically defined, their degree of “clustering” or closeness of points on the map with regard to their points in the same quadrant can be used as guidelines to interpret relationships between row and column variables (Higgs, 1991). Clusters of points provide additional information beyond the simple statement that a statistically significant association

exists between organizational influencers and respondent’s demographics. The clusters allow us to visualize how the organizational influencers and respondents’ demographics are related.

RESULTS

Respondents’ Profile

A total of 311 foodservice employees without supervisory responsibility completed the questionnaires out of 517 distributed (60% response rate). Table 2 provides the demographic characteristics of respondents from commercial and non-commercial foodservice operations. Respondents from commercial foodservice operations, typically restaurants, consisted of 61% female employees. A majority (75%) was less than 30 years old and slightly more than half (59%) were full-time workers. About half of the commercial workers (55%) had less than 3 years of foodservice experience. The majority of the respondents (66%) had completed a food safety course, and about half of them (51%) reported they held food safety certification through a program approved by the Conference for Food Protection (e.g. ServSafe®).

TABLE 2 Demographic Characteristics of Respondents

Characteristics	<i>n</i> (percentage)	
	Commercial Foodservice	Non-commercial Foodservice
Gender		
Female	89 (61%)	120 (77%)
Male	57 (39%)	35 (23%)
Age		
18-20 years old	52 (36%)	38 (25%)
21-29 years old	57 (39%)	23 (15%)
30-49 years old	28 (19%)	46 (29%)
Over 50 years old	9 (6%)	49 (31%)
Work Status		
Part-time	60 (41%)	94 (61%)
Full-time	86 (59%)	61 (39%)
Years of foodservice experience		
Less than 3 years	81(55%)	52 (34%)
4-12 years	55 (38%)	54 (35%)
Over 13 years	14 (7%)	45 (31%)

Completion of food safety course		
Yes	96 (66%)	111 (73%)
No	50 (34%)	40 (27%)
Food safety certification		
Yes	74 (51%)	93 (64%)
No	72 (49%)	56 (36%)

About two-thirds of the respondents from non-commercial foodservices, typically schools, were female (77%) and more than half (60%) of them were older than 30 years of age. More than half (61%) indicated they were part-time workers. About one-third (34%) had less than 3 years foodservice experience. Employees who had completed a food safety course represented 73% of the non-commercial foodservice sample and 64% have food safety certification. Overall, demographic characteristics of respondents from commercial and non-commercial operations were significantly different with regard to gender ($\chi^2 = 9.735$, $p = 0.002$), age ($\chi^2 = 49.144$, $p = 0.00$), years of foodservice experience ($\chi^2 = 22.618$, $p = 0.000$), and employment status ($\chi^2 = 13.294$, $p = 0.000$).

Organizational Influencer and Type of Foodservice Operation

Figure 1 illustrates the mean agreement scores on organizational influencers that motivate commercial and noncommercial employees to follow safe food handling practices and assure quality food. In general, the mean agreement scores were higher among the commercial than the non-commercial employees. The exception was for common practices; the commercial employees had a lower mean agreement score ($M = 3.94$, $SD = 1.062$) than the non-commercial ($M = 4.11$, $SD = 1.085$). Essentially, employees responded that whatever the organization was currently doing was motivating for them; in other words, no changes were perceived as needed. The mean agreement scores were nearly identical in both types of operations for influencers pertaining to policy and procedure (i.e. organization had policies and procedures) and fun (i.e. making food safety fun).

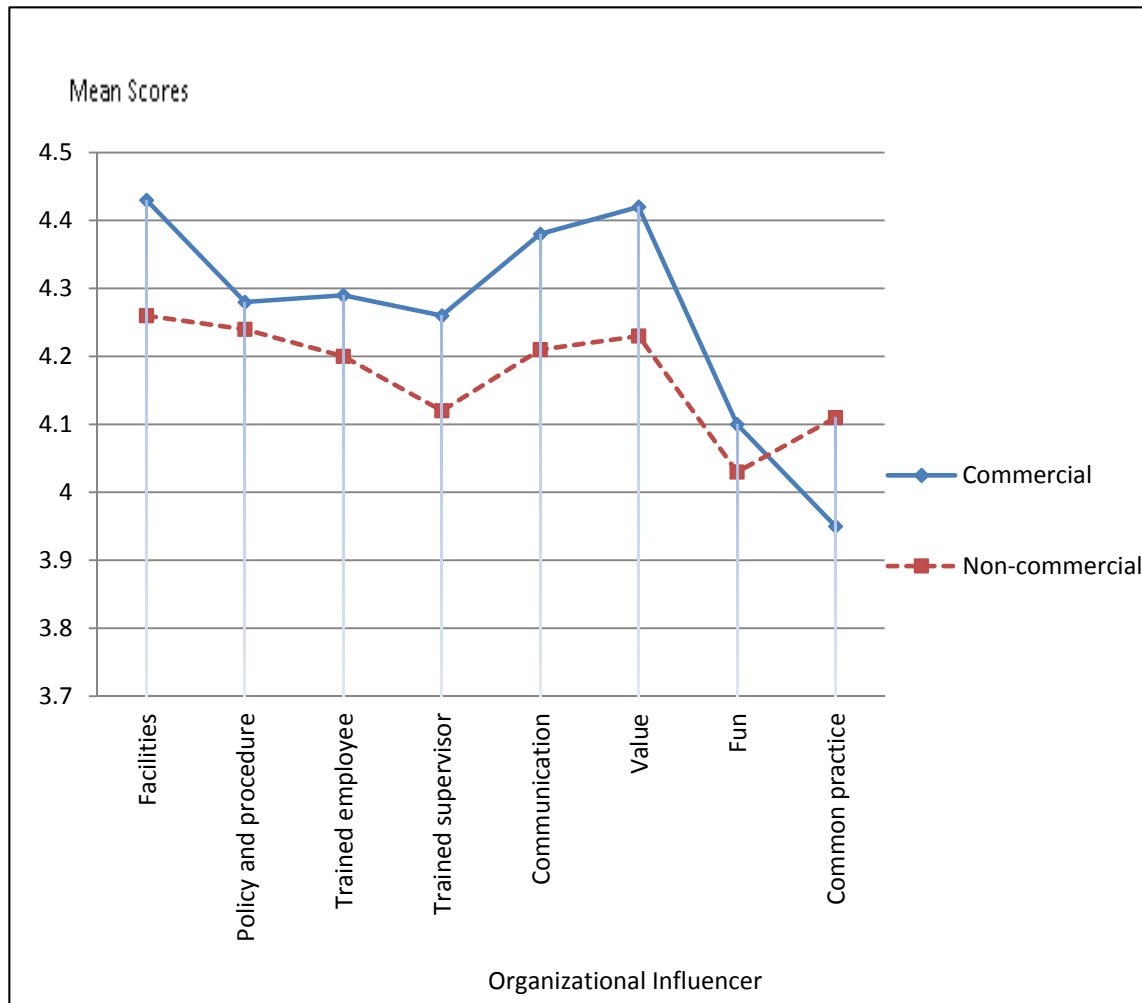


FIGURE 1 Mean Agreement Ratings for Organizational Influencers that Motivate Employee to Follow Safe Food Handling Practices

Note: Mean score based on a 5-point scale (1 = Strongly disagree and 5 = Strongly agree). Facilities - Organization provided the needed things to practice food safety, Policy and procedure - Organization had policies and procedures on food safety, Trained employee- Organization trained me about safe food handling, Trained supervisor - Organization trained my supervisor about food safety, Communication - Organization explained what was expected of me with regards to food safety, Value - Organization valued food safety, Fun - Organization made food safety fun, Common practices - Organization continued doing what they are doing.

Both types of foodservice employees indicated the highest agreement ($M = 4.25$, $SD = 0.823$ for noncommercial and $M = 4.55$, $SD = 1.034$ for commercial) that facilities (provision of needed resources and tools) was an influencer in motivating them to follow safe food handling practices. In commercial foodservices, organizational influencers related to value (placing value on food safety) and communication (communicating expectations regarding food safety) were

among other influencers with higher agreement scores. Similarly, value was an important motivating influencer for non-commercial foodservice employees in addition to the policies and procedures. The lowest agreement score for commercial foodservice employees was related to common practices ($M = 3.95$, $SD = 1.06$). Whereas in non-commercial foodservice, the lowest agreement score was for the influencer fun ($M = 4.03$, $SD = 1.13$).

Differences of Organizational Influencers across Age, Years of Foodservice Experience, and Work Status

CA of the eight organizational influencers was undertaken to further interpret their relationships with respondent's age, years of foodservice experience and work status in the commercial and non-commercial foodservice operations. To understand the organizational influencers motivating safe food handling for different age groups, CA was performed separately on commercial and non-commercial foodservice operations. There were differences found between commercial and non-commercial in terms of relationship between employees' age and influencers for following safe food handling practices. Figure 2 illustrates the relationship between age and organizational influencers for commercial operations. The CA results revealed that respondents in commercial operations between the ages of 18 and 49 years old (G1, G2, G3) tended to agree that facilities, policy and procedure, value, communication, and trained employee motivate them to follow safe food handling practices, while they were in disagreement (G5, G6, G7) with the influencers fun and trained supervisor as motivators. Respondents who were over 50 years old (G4) agreed common practices motivate their safe food handling, while there was no distinct influencer disagreed upon by this age group (G8).

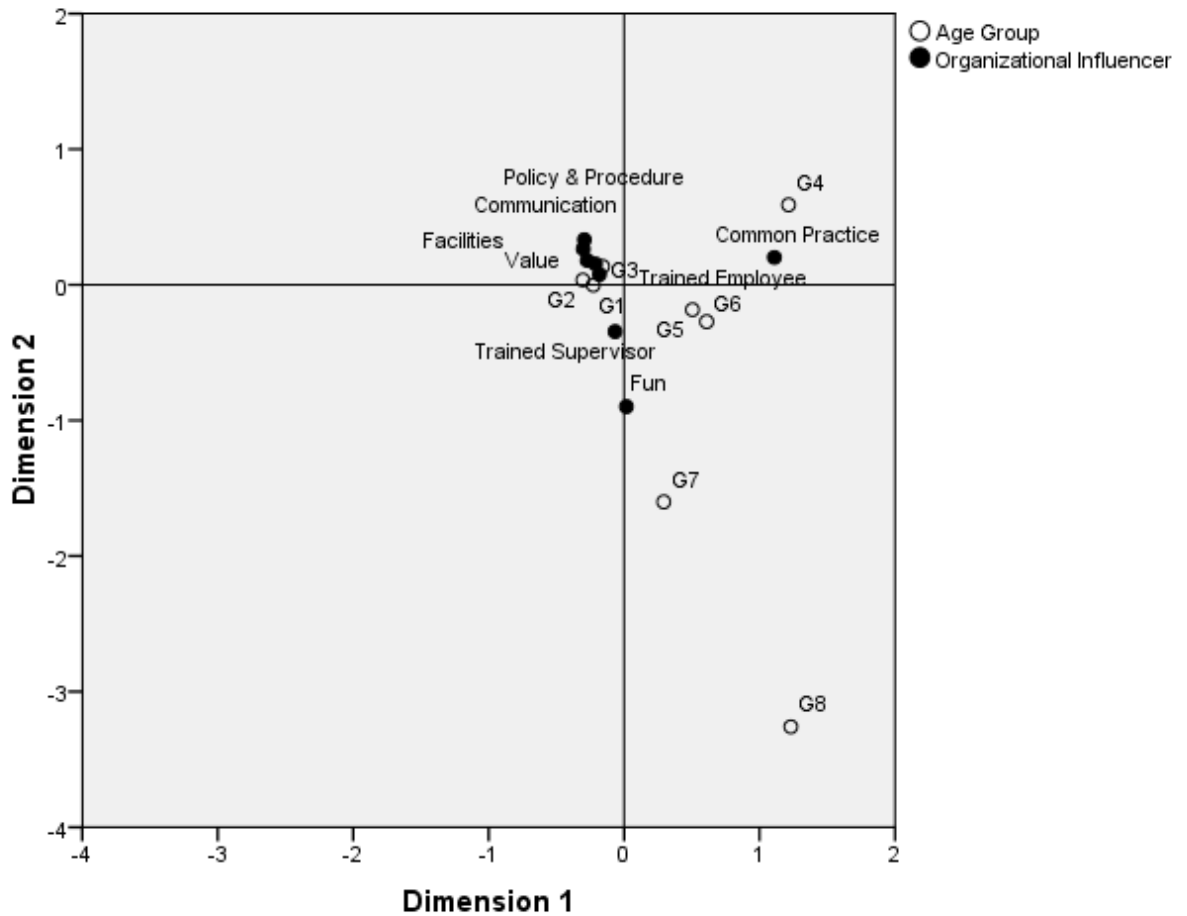


FIGURE 2 Correspondence Analysis between Organizational Influencers and Age for Commercial Operation
 Note: G1 = 18-20 years old/Agree, G2 = 21-29 years old/Agree, G3 = 30-49 years old/Agree, G4 = Over 50 years old/Agree, G5 = 18-20 years old/ Disagree, G6 = 21-29 years old/ Disagree, G7 = 30-49 years old/ Disagree, G8 = Over 50 years old/ Disagree

On the other hand, slightly different factors were found to be influencing non-commercial employees' safe food handling practices based on their ages. Figure 3 illustrates the relationship between employees' ages and the influencers considered important in safe food handling for non-commercial operation. It was found that policy and procedure, facilities, communication, and trained supervisor were important influencers to respondents in non-commercial foodservices who were between the age of 18 and 29 years old (G1, G2), whereas respondents

over 30 years old (G3, G4) agreed that value and trained employee motivate their safe food handling. Respondents between the age of 30 and 49 years old (G7) disagreed that fun and common practice influenced their safe food handling while other age groups (G5, G6, G8) did not have a distinct influencer with which they disagreed.

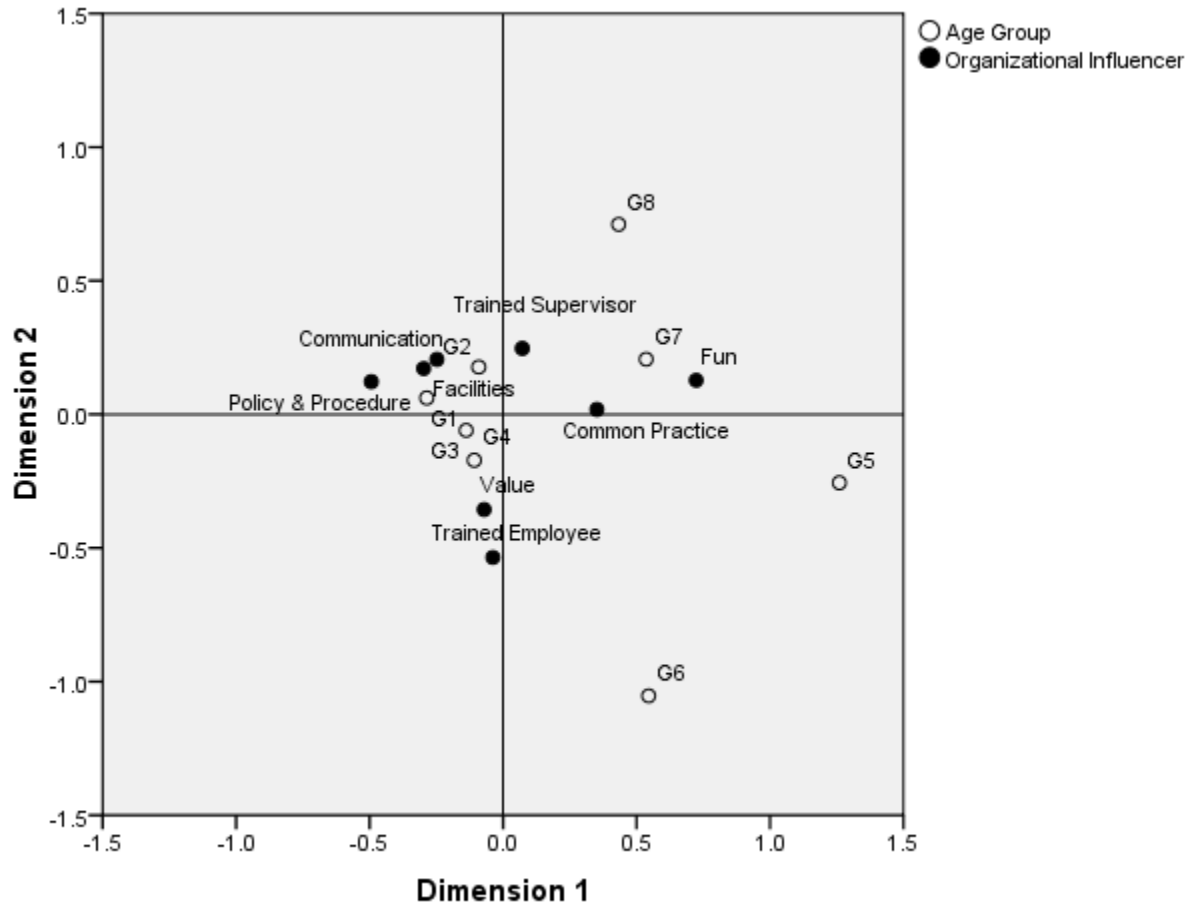


FIGURE 3 Correspondence Analysis between Organizational Influencers and Age for Non-commercial Operation
 Note: G1 = 18-20 years old/Agree, G2 = 21-29 years old/Agree, G3 = 30-49 years old/Agree, G4 = Over 50 years old/Agree, G5 = 18-20 years old/Disagree, G6 = 21-29 years old/Disagree, G7 = 30-49 years old/ Disagree, G8 = Over 50 years old/Disagree

As depicted in Figure 4, trained employee, value, facilities, communication and policy and procedure were organizational influencers agreed upon by the three groups of respondents’ foodservice experience (G1, G2, G3) in commercial operations. However, respondents who had

less than three years foodservice experience (G4) were in disagreement that common practices in the organization motivate their safe food handling practices. Fun was not considered an influencer among respondents who had between 4 to 12 years foodservice experience (G5) while there was no distinct influencer for respondents with greater experience (G6).

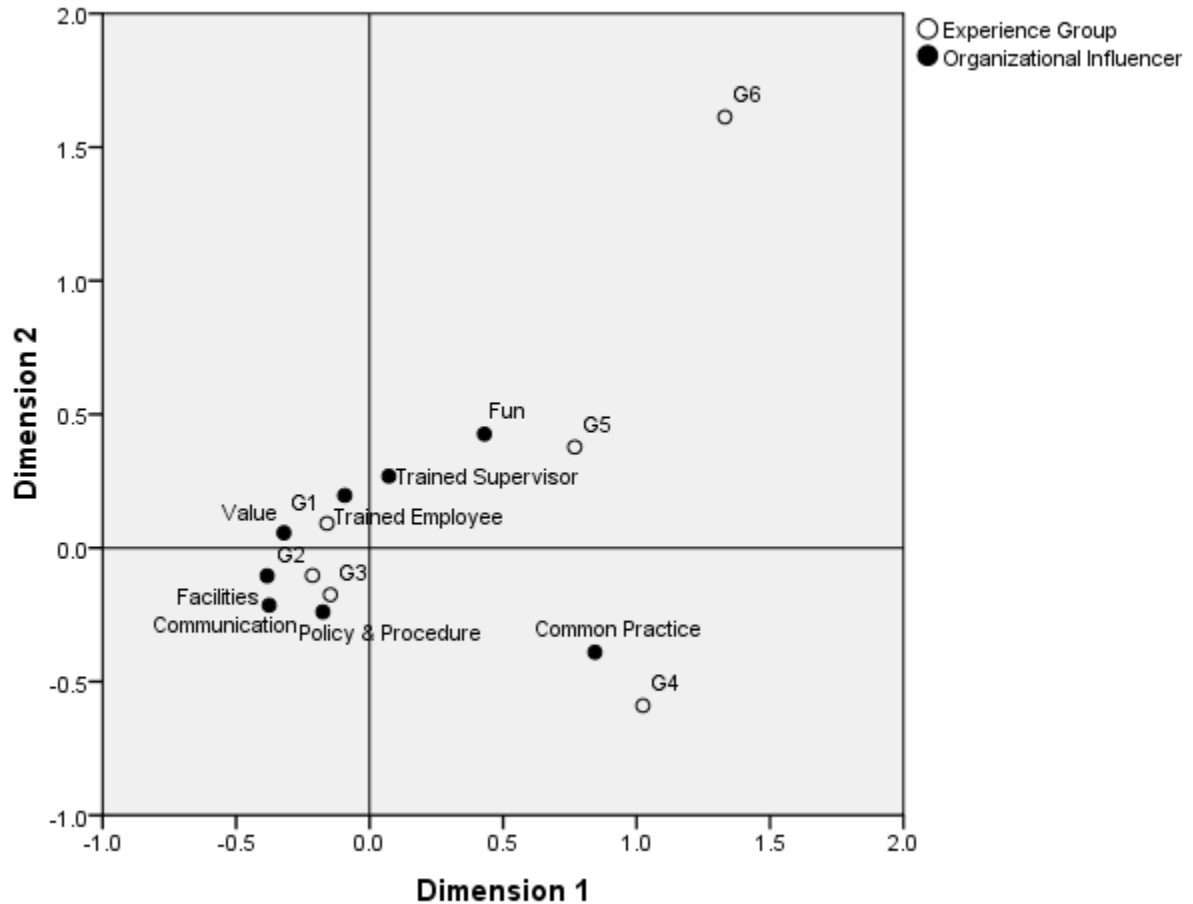


FIGURE 4 Correspondence Analysis between Organizational Influencers and Work Experience for Commercial Operation

Note: G1 = Less than 3 years/Agree, G2 = 4-12 years/Agree, G3 = Over 13 years/Agree, G4 = Less than 3 years/Disagree, G5 = 4-12 years /Disagree, G6 = Over 13 years/Disagree

These relationships, however, were different for non-commercial operations (Figure 5). Respondents with less than 12 years foodservice experience (G1, G2) perceived that only facilities and communication motivate their safe food handling practices. These groups of employees (G4, G5) were in disagreement that their practices were influenced by fun.

Experienced respondents (G3) from non-commercial operations considered value and trained employee influencers to safe food handling and there was no distinct influencer disagreed upon by this group of respondents (G6).

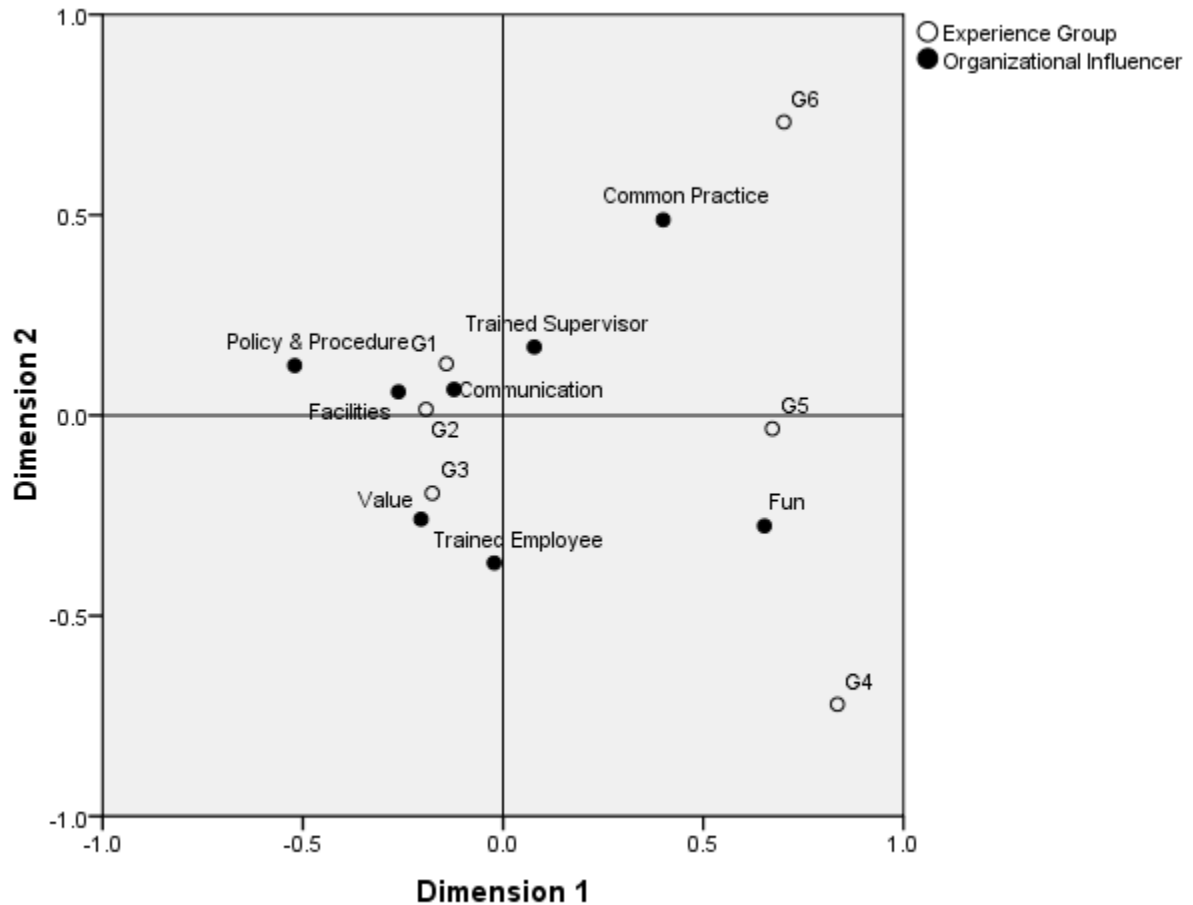


FIGURE 5 Correspondence Analysis between Organizational Influencers and Work Experience for Non-Commercial Operation

Note: G1 = Less than 3 years/Agree, G2 = 4-12 years/Agree, G3 = Over 13 years/Agree, G4 = Less than 3 years/Disagree, G5 = 4-12 years/Disagree, G6 = Over 13 years/Disagree

Finally, CA was conducted to further interpret the relationship between agreeable and disagreeable organizational influencers across respondents' work status for commercial and non-commercial operations. As depicted in Figure 6, respondents with full-time work status (G1) were inclined to agree that trained supervisor, fun, policy and procedure, and communication influenced their safe food handling practices. Part-time respondents (G2) agreed they tended to

be motivated by facilities and trained employee. On the other hand, value did not influence both groups of respondents (G3, G4)

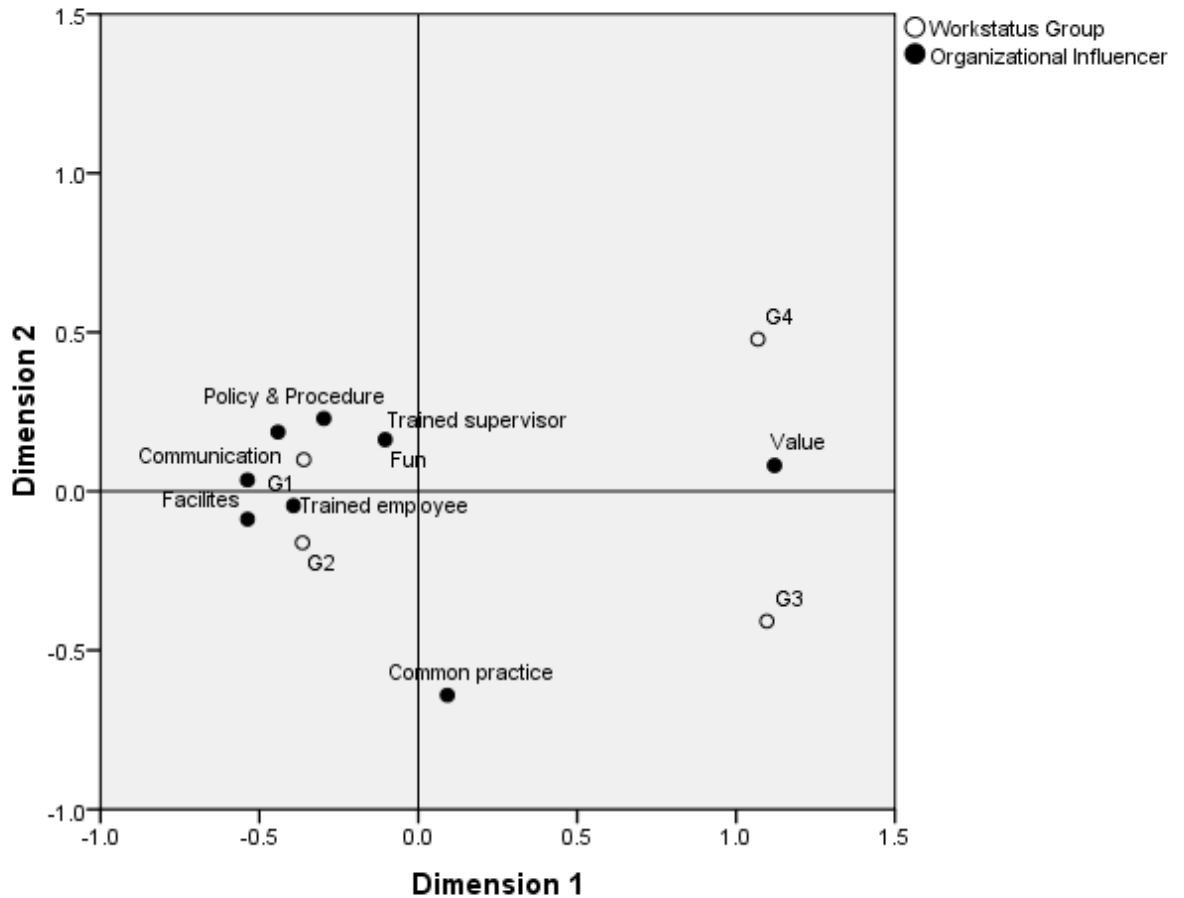


FIGURE 6 Correspondence Analysis between Organizational Influencers and Work Status for Commercial Operation

Note: G1 - Full-time/Agree, G2 – Part-time/Agree, G3 – Full-time/Disagree, G4 – Part-time/Disagree

In contrast, more influencers were found motivating to part-time respondents in non-commercial compared to commercial operations. Figure 7 illustrates the relationship between organizational influencers of safe food handling practices and work status for noncommercial operation employees. Part-time (G2) respondents’ safe food handling practices were influenced by facilities, policy and procedure, trained employee, and value. This group of respondents (G4)

was in disagreement that common practices motivate their practices. Full-time respondents (G1) agreed that communication influenced them to follow safe food handling practices. Fun was not considered an influencer for this group of respondents (G3).

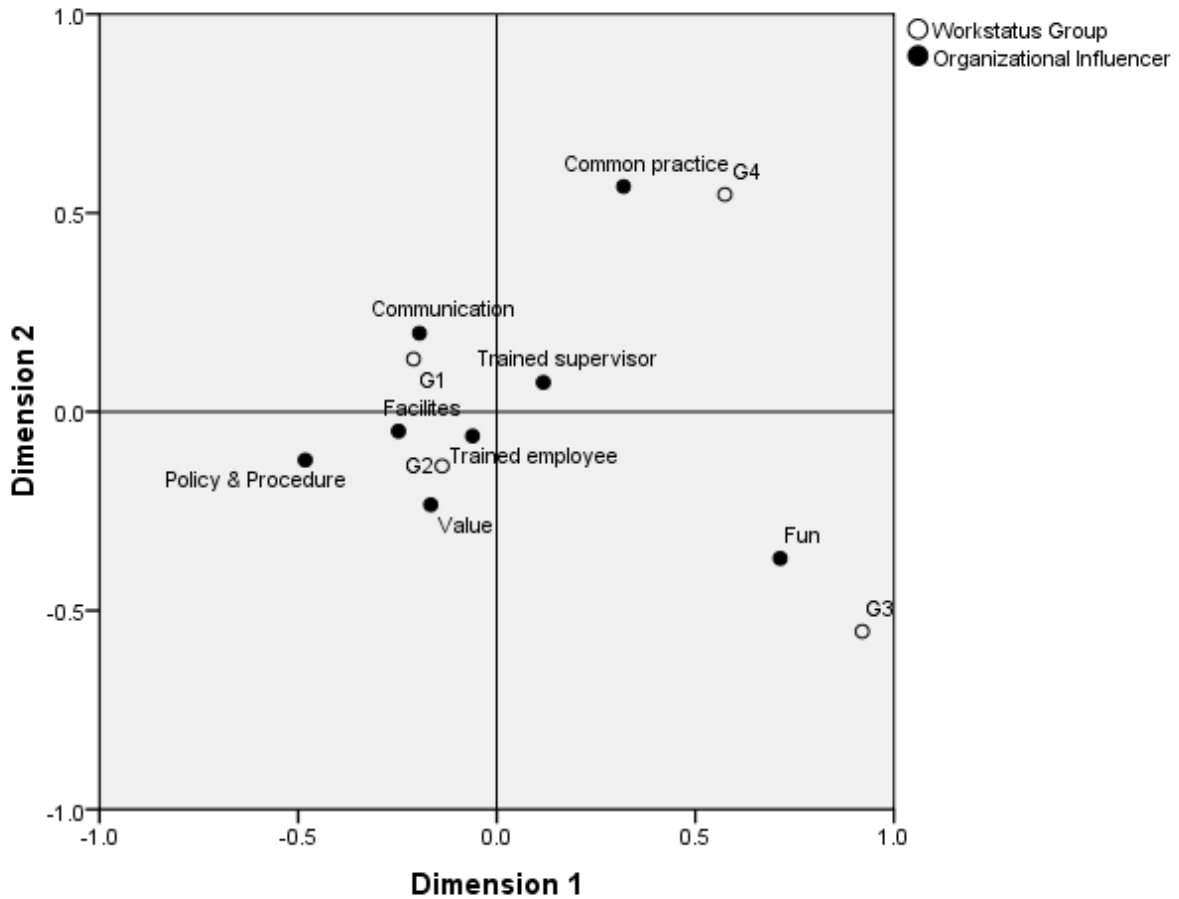


FIGURE 7 Correspondence Analysis between Organizational Influencers and Work Status for Non-Commercial Operation
 Note: G1 – Full-time/Agree, G2 – Part-time/Agree, G3 – Full-time/Disagree, G4 – Part-time/ Disagree

DISCUSSION

The present study explored the role of the organization in motivating employees to perform safe food handling, one means to ensuring quality food. Results indicated that the sample of respondents in the commercial operations is relatively similar to the current population of

foodservice employees in terms of gender, age, and foodservice experience. According to the National Restaurant Association's report on the workforce profile, employees in foodservice establishments are typically female (54%), under the age of 30 years old (54%), high school graduate or less (62%) and a part-time worker (24.7 hours per week on average) (NRA, 2008). The distribution of non-commercial respondents' demographics is more difficult to compare with the overall population due to the variety of sectors within noncommercial foodservices. The demographic composition of these study participants was not consistent with some previous works in non-commercial foodservice establishments such as K-12 school settings, college and university dining, or healthcare venues; participants in those studies were usually experienced and had full-time work status (Bright, Kwon, Bednar, & Newcomer, 2009; Lin & Sneed, 2004).

This study indicated that most of the organizational influencers appeared to motivate non-commercial foodservice employees less than commercial, given the lower mean agreement scores. Only common practice was rated higher in non-commercial than commercial operations. One possible reason accounting for this is that many non-commercial employees were experienced and may no longer be motivated by influencers such as facilities, communication, trained supervisor, and/or trained employee as they have been in the industry for a long period of time. Also, potentially there are other elements of culture that influence safe food handling practices among non-commercial employees besides common practice. Researchers have proposed various other culture elements affecting safety behavior in safety science studies; these could be adapted to food safety performance and include leadership (Griffith et al., 2010b; Yiannis, 2008), management commitment (Griffith et al., 2010b; Yiannis, 2008), management system and style (Griffith et al., 2010b), and risk perception (Griffith et al., 2010b). To date, none of these elements have been empirically tested for application in foodservice sectors. Future

research should evaluate the extent to which these cultural elements influence employees' safe food handling practices in non-commercial operations. Additionally, the lines are blurring between what is considered a commercial or a non-commercial operation with the need for auxiliary units to fully fund themselves, and in some cases, contribute to the organizational budget. Non-commercial operations are being encouraged to operate more like profit-centers rather than cost-centers. This shift from cost-center to profit-center makes it more difficult to segment the two sectors.

When operations were compared by ranking of mean scores for the influencers, a slightly different pattern was found between the two sectors. Although facilities had the greatest influence on employees' likelihood to perform safe food handling practices in both types of operations, policy and procedure was more prominent in non-commercial compared to commercial. In contrast, value was placed as a more important influencer in commercial than non-commercial. Organizations tend to emphasize certain cultural facets, while leaving behind other important components or strategies of a positive culture. Such findings are consistent with a previous study that suggested the influence of the organization is highly correlated with contextual factors (Zohar, 2003). A number of studies related to organizational culture reported that culture varies significantly within organization, unit, or department (Rentsch, 1990; Zohar, 2003) or among different organizations (Sheridan, 1992). A possible explanation of the above could be the specific goal or activity of each organization. The current study's findings imply that policies and procedures have a stronger influence on employees' motivation in non-commercial than commercial operations, although both sectors have them in place. Employees in non-commercial operations were more influenced by having policies and procedures on food safety, which help to protect their customers. These operations are more likely to be serving

vulnerable populations (those at the highest risk for a foodborne illness such as young children, elderly people, or individuals with compromised immune systems) than commercial foodservices. Thus, policies and procedures might have shaped the culture to ensure the safety of food served to the target group of customers. Additionally, the influence of policy and procedure may be more dominant in non-commercial operations because this sector is likely to have more structures in place compared to commercial operations. Structure provides a framework for organizational vision and mechanisms for communications to employees about expectations. For example, the K-12 school setting is required by federal mandate to have a food safety plan based on HACCP principles (Child Nutrition and WIC Reauthorization Act of 2004). However, the perceived value that the organization placed on food safety played a more important role in motivating employees to follow safe food handling in commercial than in non-commercial foodservices. Food safety might be viewed as an important component of product quality, which is likely, more clearly viewed as the organization's priority in commercial foodservices.

Another possible explanation for the differences in patterns of organizational influencers could be the differences in employees' profiles. This study revealed that the demographic characteristics of respondents from commercial and non-commercial operations were significantly different with regard to gender, age, years of foodservice experience, and employment status. The non-commercial employees comprised more women than the commercial. Younger employees (age below 30 years old) worked in commercial foodservices and the majority of them had less than three years of experience. A larger proportion of non-commercial workers than commercial employees were over 50 years old and very few of them had less than three years foodservice experience. Additionally, more of the non-commercial employees had part-time work status. Motivation to follow safe food handling practices among

employees of different demographic characteristics was influenced by distinct organizational influencers. This finding resonates with previous work that suggested an employee's motivation to follow food safety procedure is influenced by varying demographic factors including age, years of foodservice experience and work employment status (Ellis et al., 2010). Other studies have shown that work motivation is dependent, not only on the sector of employment, but also on demographic characteristic such as age, gender or education (Crewson, 1997; Jurkiewicz, 2000; Kacmar, Carlson, & Brymer, 1999).

The current study has identified the impact of an employee's age, work status, and years of foodservice experience on how they perceived the role of the organization in motivating their food safety practices. A relationship was found between employees' age and organizational influencers in both types of foodservice operations. In commercial operations, distinct influencers motivate older employees (over 50 years old) as compared to younger ones. Similarly, employees between the age of 18 to 29, 30 to 49, and over 50 years old indicated different influencers motivate their safe food handling in non-commercial establishments. These results suggest that employees' age affects what motivates them to conduct proper food handling procedures. The effect of generational differences is a reasonable explanation for this finding. Employees of different generational age groups do not always share similar work expectations and values. Younger employees have different work motivations and work ethics, as well as different knowledge and skill sets compared to mature workers. For instance, younger employees in this study were less motivated by value and common practices, possibly because their knowledge and experience did not encourage them to appreciate the value that the organization attached to food safety. Abbot, Byrd-Bredbenner, Schaffner, Bruhn, and Blalock (2009), in their study of young adults' food safety behaviors, suggested that young adults may not have an

adequate knowledge base or motivation to apply the knowledge to handle food safely. Lord (2004) studied older and more knowledgeable workers and found this group of employees remained active in the workforce because they enjoyed working, derived satisfaction from using their skills, gained a sense of accomplishment from the jobs they performed, and enjoyed the chance to be creative. Potentially, as results from the current study suggest, older employees' knowledge about food safety highly motivated them to comply with safe food handling practices.

The relationship between employees' foodservice experiences and what motivate them to follow food safety procedures was revealed particularly in the non-commercial operation. Experienced employees were motivated by value and training whereas those with less than 12 years foodservice experience were more influenced by facilities and communication. It would seem from this finding that the role of organization on employees' motivation is determined by their work experiences. A previous study indicated that employees who have foodservice experience and have had formal food safety training tended to appreciate and were more aware of the importance of food safety practices (Brannon, York, Roberts, Shanklin, & Howells, 2009). In line with previous findings, employees in the current study who had more foodservice experience (i.e. more than 13 years) and had completed a food safety course were more motivated to follow safe food handling by value compared to those with less experience. According to Brannon et al. (2009), employees' foodservice experiences and formal food safety training could help them recognize various issues associated with performing food safety practices (e.g. advantages, disadvantages, and difficulties), which subsequently influence their intentions to follow safe food handling.

Findings from this study indicated that employees of different work status were influenced by different organizational factors. In commercial operations, full-time employees

were motivated to follow safe food handling by the influence of trained supervisor, fun, policy and procedure and communication. Part-time employees, on the other hand, were motivated by facilities and trained employees. Some of the differences between full-time and part-time employees in this study are consistent with those in earlier work on part-time employees' work attitudes. For example, the finding that part-time employees were not motivated by the organizational influencer of fun could possibly be due to their limited involvement in the organization, thereby not allowing them to experience fun at the workplace. Ferber and Waldfogel (1998) found that many part-time workers intentionally choose and prefer less involvement in their exchange relationship with their organization because of other interests or demands of their time. Interestingly, findings from the current study demonstrated that fun was not considered an influencer for full-time employees in non-commercial operation while various influencers motivated part-time employees including facilities, policy and procedure, trained employees, and value. Given that customers served at the non-commercial foodservice include at risk populations, a possible reason might be elements of communication and policy and procedure were more prevailing in encouraging the culture of food safety among employees in these types of operations.

CONCLUSION

The present study revealed the extent to which elements of organizational influencers motivate employees to follow safe food handling in commercial and noncommercial operations. A broad implication of the present research findings is that various organizational factors play an important role in motivating employees to follow safe handling practices. That is, if the organizational culture is not supportive, as perceived by employees, then intervention at the individual level may not be sufficient. To enhance employees' safe food handling practices in the

workplace, the present findings suggest that the organization would benefit from providing the needed resources to practice food safety and instill values attached to food safety. A positive organizational culture should be built on a strong foundation of a clearly defined organizational value (Yiannis, 2008). This commitment to food safety is reflected in policies and procedures, another organizational influencer rated highly by respondents. The extent to which these organizational influencers have been incorporated to motivate employees could then be used to measure progress in strengthening an organization's food safety culture and in turn, assure quality food.

Findings of this study also provide understanding about how specific demographic characteristic influence what motivates employees to follow safe food handling practices. Knowing this information is useful to inculcate food safety culture in an organization. Different elements of organizational culture could be used to motivate safe food handling among employees of different demographic characteristics. Managers could tailor their efforts to build a positive food safety culture based on the composition of employees in their operations. Specific demographic groups could be motivated to follow safe food handling practice using appropriate organizational supports. For instance, commercial operations would benefit from providing adequate facilities and employees training if most employees in the organization work on a part-time status. This approach would engage employees in food safety and strengthen an organization's food safety culture. As the foodservice workforce continues to reflect wide diversification, this strategy of customization could be useful in preventing foodborne illness outbreaks. Customization of an organization's intervention strategy should also be an integrated approach and target multiple elements of culture. Taylor (2011) suggested that the elements of culture supporting positive food safety culture are interconnected and should not be handled in

isolation; thus, producing substantial and enduring food safety outcomes. Findings of the current study can help managers identify what aspects of the organization need to be integrated into the intervention systems and customize them based on current employees profiles, which could be distinct from one operation to another.

The current study is not without limitations. It must be mentioned that correspondence analysis is purely an exploratory technique and that statistical significance of relationships should not be assumed (Hair, Anderson, Tatham, & Black, 1998). It is recommended that future research develop a more comprehensive measurement of organizational influencers and use robust statistical techniques to further investigate the role of organization on employees' safe food handling practices. The convenience sampling methods employed could limit the generalization of findings to the overall population. The use of a sample from foodservice tradeshows and operations with managers' willingness to participate may result in bias because of respondents' potential stronger interest in food safety compared to the population. Future research could apply a random sampling technique to obtain a representative picture of the current industry.

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