The Effect of Training Effectiveness, Attitude, Commitment, and Employee Trust on Food Safety Behaviour in Home-Based Businesses

" دراسة تأثير وفعالية التدريب والموقف والولاء وثقة الموظفين في سلوك سلامة الغذاء على العاملين في مشاريع الاعمال المنزلية ".

by

SHATHA ALI AL MUALLA

A thesis submitted in fulfilment

of the requirements for the degree of

PROFESSIONAL DOCTORATE IN BUSINESS ADMINISTRATION

at

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Dr. Bader Yousef
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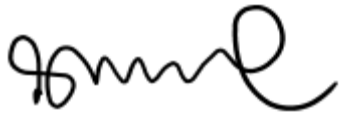

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ABSTRACT

Food safety behaviour in the United Arab Emirates (UAE) has received much academic and practitioner attention because of the significance of home-based businesses (HBBs) in food safety management. Food safety behaviour in HBBs is vital because many entrepreneurs are increasingly seeking HBB growth and development via innovation. Many food safety guidelines regulate HBB food safety practices. However, prior studies on the impact of managerial variables that affect safety practices at HBB examine a few variables and factors, warranting further studies on other variables that may affect food handlers' behaviour. Thus, this study develops a model to examine how employee trust, attitudes, commitment, and training effectiveness influence HBB food safety.

The study uses a quantitative research design in a deductive approach to test the model variables and their impact on HBBs in the UAE regarding food safety behaviour. Questionnaires were used to collect data, yielding a sample of 183 respondents, after which Statistical Package for the Social Sciences (SPSS) and AMOS was employed for data analysis and hypotheses testing. Accordingly, food safety behaviour, training effectiveness, commitment, attitude, and employee trust (except for the continuance commitment) factors showed significant correlations, influencing employee food safety behaviour in HBBs. Hence, employers should note the role the four variables and their factors play in employee food safety behaviour. They should implement an effective training programme to promote food safety behaviour. Moreover, the findings can help develop food safety practices critical to achieving high levels of preparedness for foodborne disease outbreaks. It can help stakeholders provide information on reducing food poisoning incidents at HBBs by requiring food handlers to assume managerial responsibilities.

Keywords: Food Safety Behaviour, Training Effectiveness, Attitude, Commitment, Employee Trust

ملخص البحث

حظي سلوك سلامة الغذاء في الإمارات العربية المتحدة باهتمام كبير من الأكاديميين والممارسين بسبب الدور الذي يلعبه HBB في إدارة سلامة الأغذية. يعتبر سلوك سلامة الغذاء في الأعمال التجارية المنزلية (HBB) ضروريًا لأن عددًا متزايدًا من رواد الأعمال يبحثون عن نمو وتطوير HBB من خلال الأفكار المبتكرة حيث تم تطبيق عدد من إرشادات السلامة الخاصة بالأغذية للمساعدة في تنظيم ممارسات سلامة الأغذية في دولة الامارات. ومع ذلك، فإن الأبحاث السابقة حول تأثير المتغيرات الإدارية التي تؤثر على ممارسات السلامة في HBB قد اقتصرت على عدد قليل من المتغيرات والعوامل، وهناك حاجة إلى مزيد من البحث لمعالجة المتغيرات الحاسمة الأخرى التي قد تؤثر على سلوك متداولي الأغذية. وفقًا لذلك، طورت الدراسة الحالية نموذجًا لفحص كيفية تأثير ثقة الموظفين ومواقفهم وولائهم وفعالية التدريب على ممارسات سلامة الأغذية في HBB.

من أجل تحقيق الغرض من الدراسة، تم تطبيق تصميم بحث كمي ونهج استنتاجي لاختبار النموذج ومتغير البحث وتأثيرهما على HBBs داخل دولة الإمارات العربية المتحدة في مجال سلوك سلامة الغذاء. تكونت العينة من 268 مستجيباً، وجمعت البيانات باستخدام استبيان. تم تحليل البيانات باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS) وAMOS لاختبار فرضيات البحث. باستثناء عامل الولاء المستمر، أظهرت نتائج البحث وجود ارتباطات كبيرة بين عوامل سلوك سلامة الغذاء، وعوامل فعالية التدريب، وعوامل الولاء، وعوامل السلوك، وثقة الموظفين، وقد أثرت هذه العوامل على سلوك سلامة الغذاء للموظفين في الأعمال المنزلية . بناء على ذلك، يجب أن يكون أصحاب العمل على دراية بالدور الذي تلعبه هذه المتغيرات الأربعة وعواملها في سلوك سلامة الغذاء للموظفين وتنفيذ برنامج تدريبي فعال لتعزيز سلوك سلامة الغذاء. بالإضافة إلى ذلك، ستساعد الدراسة أيضًا في تطوير ممارسات سلامة الأغذية المهمة لتحقيق مستويات عالية من الاستعداد لتفشي الأمراض المنقولة بالغذاء. من المتوقع أن تكون نتائج هذه الدراسة ذات قيمة لأصحاب المصلحة لأنهم سيقدمون معلومات حول كيفية الحد من حوادث التسمم الغذائي في الأعمال المنزلية من خلال مطالبة متداولي الأغذية بتولي مسؤولياتهم الإدارية.

الكلمات المفتاحية: سلوك سلامة الغذاء، فعالية التدريب، الموقف، الولاء، ثقة الموظفين، المشاريع المنزلية.

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This work was completed following the advice and support of many individuals and organisations. I would wish to thank all of them.

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Lastly, I wish to thank all my close and loved ones for their inspiration and best wishes.

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List of Abbreviations

CAC	Codex Alimentarius Commission
CDC	Centers for Disease Control and Prevention
FAO	Food and Agriculture Organisation
FCSA	Federal Competitiveness and Statistics Authority
FDA	Food and Drug Administration
FS	Food Safety
FSISA	Food Safety and Inspection Service agencies
FSM	Food Safety Management
HBB	Home-Based Business
AED	Arab Emirates Dirham
PRP	Prerequisite Programmes
UAE	United Arab Emirates
WHO	World Health Organisation
AMOS	Analysis of Moment Structures
CFA	Confirmatory Factor Analysis
CMV	Common Method Variance
TLI	Tucker Lewis Index
CFI	Comparative Fit Index
GFI	Goodness of Fit Analysis
EFA	Exploratory Factor Analysis

AVE	Average Variances Extracted
CR	Composite Reliability
ANOVA	Analysis of Variance
VIF	Variation Inflation Factor

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Chapter One: Introduction

Home-based businesses (HBBs) are businesses run from home, as opposed to one that is operated in a commercial setting. There is no precise definition of a home business, but it can be generally described as a business that is operated from the comfort and convenience of the home owner's residence rather than from a traditional office or retail space (Abd Razak et al., 2022). Home businesses range in size from one-person operations to businesses with dozens of employees. Some home businesses are quite small, while others are larger and more complex (Reuschke and Domecka, 2018). There is usually no frontage for home-based businesses, no parking for customers, and no street advertising. Recently, HBBs have increased dramatically in the United Arab Emirates (UAE) (Vracheva et al., 2019), particularly in food production. The Federal Competitiveness and Statistics Authority (FCSA) indicates that HBBs increased from 284 in 2015 to 301 in 2019 (FCSA, 2019). Due to this, attitudes, commitment, trust, and training are becoming increasingly significant in this sector (Lam, 2020, Redmond and Walker, 2010). There has been insufficient attention given to the evaluation of practices and standardisation of food safety behaviour, and few studies have examined businesses that may operate with low levels of food safety (Al Khaja et al., 2015).

The rationale of this study is that FSB is a critical issue for both consumers and businesses (Galati et al., 2019). HBBs may be particularly at risk for food safety violations because these businesses often do not have the same level of training and resources as larger businesses. HBBs performing food production are prone to irreversible food contamination compared to other kinds of products (Chen, 2017). Certain improper practices in food preparation at home, such as improper cooking practices, reheating, undercooking, cooling of food, incorrect preparation, cross-contamination, inadequate processing, and poor hygiene, contribute to foodborne diseases (Limon, 2021).

Therefore, the selection of food safety behaviour in small businesses is much more critical as contamination cases are more severe than other types of losses.

HBBs are developing into competitive businesses toward improving food safety and preventing contamination. Workers' training, attitudes, and degree of commitment are aspects critical to successful strategy implementation. Competitive markets are challenging, and several dynamic methods help achieve company success. Nevertheless, educating inexperienced food handlers is critical to ensuring successful operations and must not be ignored. Food handlers must have food safety knowledge, as such knowledge significantly impacts their actions (Ovca et al., 2018). Thus, business success hinges on improving employee skills because employees form a company.

1.1 Background

This thesis focuses on four factors integrated with HBBS: training effectiveness, attitude, commitement, and employee trust. The effect of information, skills, and attitudes from training and organisational variables affecting training outcomes must be noted and measured to understand training effectiveness. A better understanding of how well training methods and procedures are developed and tested is useful in determining the value of training programmes (Kodwani and Prashar, 2019). The criteria for measuring training effectiveness in this study are trainee reaction, learning behaviour, and business results. An organisation can, thus, evaluate its training programme (Mollahoseini and Farjad, 2012). According to Xue et al. (2018), the measurement of training effectiveness by the Kirkpatrick model gives an indicator of the criteria to measure, such as how to evaluate training effectiveness (learning), quantify the improvement of the trainee's ability after training (behaviour), and ensure the quality of training (knowledge) (Rahman and Bhuiyan, 2019).

Attitude is the second variable in this study, as it is important in any business. Attitudes comprise three components: cognition is the beliefs about the attitude object; affect is the feeling elicited; and cognition is the directed behaviour (Kircher and Fox, 2019). Moreover, all components are psychological and characterised by stereotypes (beliefs), prejudices (feelings), and discrimination (behaviour). Food safety knowledge positively affects the behaviour and attitudes of food handlers, given that attitude (positive or negative) may influence behaviour (Moreaux et al., 2018). The last variable is commitment; which is a multidimensional construct that comprises affective commitment, normative commitment and continuance commitment (Allen and Meyer, 1990, Iglesias et al., 2019). It contributes to increased job satisfaction, inducing improved business performance. Thus, highly committed employees contribute actions that produce organizationally valued outcomes (Mahto et al., 2020).

Importantly, the National Food Safety Committee (NFSC) comprises several ministries and locality members to propose UAE-approved standards. Moreover, the UAE hinges on Gulf Cooperation Council (GCC) norms. Accordingly, given the heightened emphasis on food quality by customers, food management has seen many changes and advancements. Thus, the government introduced the From Farm to Fork initiative.

The UAE have strong food safety laws. They define food handling, preparation, and storage better, avoiding foodborne disease and cross-contamination. Food safety behaviour laws are critical to public health, and these regulations lay forth many food and hygiene requirements (Taha et al., 2021). Food safety is vital, and its advocates believe their proposed method benefits may help maintain and enhance food safety across the supply chain. The UAE provides training to food workers on food safety, cleanliness, and basic personal hygiene (Taha et al., 2020a), as many classes require courses on developing food safety knowledge.

Most nations employ the Hazard Analysis Critical Control Point (HACCP) and Food Safety Management System (FSMS) to manage the risk of food safety hazards. The EU introduced laws requiring food companies to adopt HACCP systems; each HACCP plan stage is an independent plan that may be created in many forms and models (Dzwolak, 2019). However, some nations adopt this approach partially. For instance, in 2005, Canada employed HACCPs for the meat and poultry industries but not in other industries such as honey, eggs, and dairy (Scott et al., 2009). Recently, business intervention in the prevention of foodborne illness has gained widespread acceptance (de Arruda Santos and Alves, 2021).

Thus, strategic planning and food safety management (FSM) are essential for a secure food supply chain. Their essential part is the prerequisite programmes (PRP), which sets the framework for the food safety behaviour policy before beginning any food-handling activity. Food safety behaviour in the UAE is the best in the Arab area, ranked 23rd out of 109 nations worldwide, mostly given its excellent food safety behaviour, quality, and cleanliness (Taha, 2018).

Skills intensity via training correlates with firm performance. Ongoing corporate training enables continuance growth, particularly in a highly competitive world of rapid changes (Jonny, 2016). Prior studies focus on several critical considerations for building an instructional environment, such as motivation and learning, which may boost training performance. It is also vital to design excellent training programmes for learners to effectively translate their training to work-life (Mohanty et al., 2019). A training course evaluates various implementation variables to inform trainers on focus areas (Jubayer et al., 2020). Human capital investment helps people improve performance and organisation success, influenced by anything from physical fitness to intellectual growth. Moreover, training improves skill development and human capital, which may be useful to employees, especially when employees want to increase their skillset (Lee et al., 2017).

Notably, food handlers' job experience helps achieve effective food-handling procedures. Further, every training session must finish with a short exam to properly assess comprehension (Sahni, 2020). Knowledge is vital in how food handlers' attitudes and behaviours impact their results. For instance, people educated about handling food have a better sense of responsibility (Malavi et al., 2021). Training success is another important factor; it improves workers' capabilities and abilities (da Cunha et al., 2014a). HBBs need competent personnel who must have sufficient education to be certified as an operator. However, food businesses in risky areas can expect to encounter a lack of qualified employees (Clements and Bihn, 2019).

Through the Administrative Order for the Emirate of Dubai in 2010 from the Dubai Municipality Food Control Department (DM FCD) and its industrial guidance document (DM FCD 2011b), the UAE established a policy framework that set regulatory requirements for all food businesses in Dubai. In this line, a study conducted by Osaili et al. (2022) has the following recommendations. First, all such businesses must have personnel in charge (PIC) trained and qualified in food safety. The PIC gives the business owner or designated personnel (e.g. a shift leader or kitchen manager) directive, control, and supervisory authority over employees who engage in food storage, preparation, display, and handling activities and remain consistently present and involved in the work area. Second, all food businesses must ensure the effective implementation of good hygiene practices. Retail, food service, and manufacturing firms must also institute an FSMS based on Codex HACCP principles (Al-Awadhi, 2011). However, this study did not gather evidence from broader food industry players, nor was it limited to Dubai. Instead, the study identified a specific target population: HBBs dealing with food within the broader UAE setting.

Moreover, it primarily identified the impact of training, attitude, commitment, and employee trust on food safety behaviour in HBB. The study used appropriate sampling tools to attain a relevant

population sample, yielding predictably generalisable results to the overall contextual population. The HBB food domain is unique, emerging as an expanding dimension in the restaurant and hotel sector. Given the food sensitivities, the domain of food safety is critical for study. The results are vital because attaining interrelationship results highlights industrial behaviour that mitigates food safety behaviour-related risks such as poisoning. Thus, the study employs data from food HBBs in the UAE.

The training effectiveness is gauged by ascertaining whether new behaviours emerge and if structural adjustments are required. Firms should measure effectiveness, seeking information and feedback to ascertain whether the training programme meets its objectives, identify problems, and understand how training improves performance. The study recommends evaluating factors such as training environment, assessment, and amount to enhance its effectiveness. Trainees must know the training duration, policy, and process given the factors influencing learners and learning activities.

Further, a food-safety attitude refers to a sensation or belief about food safety. Managers must understand the factors affecting employees' food-safety attitudes to facilitate the development of safe food. Food-safety attitudes affect one's work performance and job satisfaction. The study recommends that managers should be aware of workers' attitudes towards their work because they may not perform their duties satisfactorily if they have negative feelings about the tasks assigned to them.

Commitment, in turn, involves the willingness of employees to take action to produce safe food. The study asserts that managers should understand their level of commitment to food safety. High commitment leads workers to display positive work behaviours and have high trust in leaders.

Supervisors should avoid work pressures or poor working conditions because they can negatively affect commitment toward safe food practices.

Ultimately, trust in managers and peers is the factor that determines a worker's attitude towards food safety. The study opines that when employees trust each other, there are no problems in expressing negative or positive feelings about safer food practices at work. Thus, when supervisors keep their promises, workers tend to trust their leaders and are more willing to implement safe food practices at home.

1.2 Research Problem

Food safety is a major concern worldwide, as millions each year are hospitalised or die from contaminated food (Bou-Mitri et al., 2018). HBBs in the food industry in the UAE are increasing at incredible speed (Al Khaja et al., 2015), revealing challenges such as a lack of proper business practices and unfavourable attitudes toward food safety. Moreover, the inconsistent HBB rules and regulations across the UAE are a problem. In other words, some emirates poorly enforce food safety regulations, especially in HBBs; others do not have any regulations (Saeed et al., 2021, Henson and Caswell, 1999). However, the process of implementing food safety measures relies on revising regulations and establishing more rules to avoid business mishandling (Lin and Roberts, 2020). Therefore, it is essential to enforce strict regulations for HBBs that produce food to protect consumers.

In spite of the fact that many efforts have been made to improve food safety, the number of product recalls, food poisoning and low food safety inspection scores continue to be on the rise, and food handlers continue to use unsanitary food preparation practices (Taha et al., 2020, Saeed et al., 2021). Thus, the businesses manager should take responsibility by putting more effort into

increasing their employees' capabilities and motivation to adhere to food hygiene practices within the business (Taha et al., 2021). Numerous studies indicate that human capital matters as much as technical factors and government regulations to increase food safety behaviour in the food manufacturing industry (Faour-Klingbeil et al., 2015, Jubayer et al., 2020). In essence, management practices in handling food safety can be measured by analysing their employees' perceptions, such as effective training and evaluating their attitudes, commitment, and trust as key factors influencing their willingness to apply a food hygiene handling behaviour (Lee and Seo, 2020, Aquino et al., 2021).

Previous studies have indicated that food safety training can reduce foodborne illness incidences by increasing employees' motivation, attitudes, and usage of appropriate food handling practices (Soon and Baines, 2012, Malavi et al., 2021). Malavi et al. (2021) advocated food safety training as a method to improve food handling practices. A study by Webb and Morancie (2015) recommended that food safety training be planned, implemented, monitored, and evaluated with careful attention to ensure that handlers are aware of food safety practices. In UAE, HBBs face more significant challenges in implementing training programmes such as food safety programmes, and some do not always have the resources and necessary expertise on-site (Osaili et al., 2022).

Choosing the most appropriate employee training is crucial to improving the skills of both skilled and unskilled food handlers (Milhem et al., 2014). Further, proper training in food safety is essential to reducing incidences and outbreaks of foodborne illnesses. Even though most HBBs should train their food handler employees about appropriate food safety, this training is not always offered or effective (McFarland et al., 2019). Moreover, earlier studies suggested that increased

food safety training may not necessarily result in improved attitudes and practices related to food safety (Pilling et al., 2008, Adesokan et al., 2015, Malavi et al., 2021). The present study opines that the provision of regular refresher training and training effectiveness for food handlers can increase the likelihood of improved behaviour.

On the other hand, management literature advocates using training effectiveness and not just one-time training (Hsu and Chen, 2021). Evaluation of training effectiveness is generally defined as a systematic process that collects the results of a training outcome to ascertain whether or not the training is effective while also enhancing its quality (McFarland et al., 2019). Although several studies have been conducted to investigate the impact of training on food handlers' safety behaviour (Malavi et al., 2021, Jubayer et al., 2020), few have addressed the effect of training effectiveness on it (McFarland et al., 2019, Adesokan et al., 2015).

Likewise, employees have the potential to contribute their experiences and attitudes related to food safety and the organisation, as well as dispositions such as conscientiousness (De Boeck et al., 2017). They may affect motivation, knowledge, and behaviour at work as well as how individuals perceive the value of safety in their organisation (Neal and Griffin, 2004). Ovca et al. (2018) show that the attitude of food handlers is vital because misapplying knowledge may affect behaviour and practice and induce bad safety practices like inadequate handwashing and cross-contamination of ready-to-eat-food, which are the most frequent errors by food handlers (Burton et al., 2020). Ko (2013) reported that food handlers' attitudes play an essential role in determining the effect of training on food handlers' practices. According to the literature, training can only affect food handlers' practices if it changes their attitudes and motivation (Pacholewicz et al., 2016). Food

handlers must therefore be encouraged to adopt a more conscientious attitude (Sanlier and Baser, 2020).

Furthermore, commitment is considered to be of prime importance to human capital and strategic decision-making (Chen et al., 2016). Commitment is a measure of the employees' obligations, dedication, and identification with the goals and objectives of the organisation in which they work as well as their attachment to it (Cao et al., 2020). Furthermore, commitment can help employees achieve their goals, contingent on positive attitudes as behavioural drivers, such as adhering to hazardous waste guidelines and handwashing before, during, and after preparing food (Nyarugwe et al., 2018). According to Taha et al. (2021), food safety commitment may improve food safety performance. For example, compliance with food safety standards could reduce the risk of food poisoning. In literature, some studies have examined commitment to safety awareness, but none has explored safety commitment among HBBs food handlers.

As one of the most critical conditions influencing workers, trust plays a vital role in employee behaviour in organisations. Trust is created through the provision of information, openness, consistency and other contributions (Kazemi et al., 2018). Trust is viewed in the workplace as faith and confidence in peers (that is, confidence in coworkers) and confidence in management (that is, confidence in supervisors and top management) (Oh and Park, 2011). While trust has been studied in the related management literature (Bulińska-Stangrecka and Bagieńska, 2018, Kipkosgei et al., 2020) as an influencing factor in achieving better performance, no study has evaluated its impact on food handlers' safety behaviour.

Based on the above-mentioned discussion, there is a need for research to understand the relationship between the three constructs, namely employees' attitudes, commitment and

interpersonal trust and food safety behaviour in HBBs as well as the influence of training effectiveness on it. By understanding these relationships, it would be possible to explore different factors affecting food handlers' food safety behaviour in HBBs. Therefore, the research question under investigation is if there is a relationship between food handlers' attitudes, commitment and trust in their food safety behaviour in HBBs; and how these factors influence the food safety behaviour of HBB food handlers. Additionally, how training effectiveness can improve human capital toward and increased compliance with food safety behaviour in HBBs in UAE.

1.2 Research Questions

Thus, to address the noted research problem, this study answers the following research questions:

Question 1: How does employees' training effectiveness impact food safety behaviour?

Question 2: How does food safety attitudes influence food safety behaviour?

Question 3: What is the effect of employee commitment on food safety behaviour?

Question 4: What is the impact of employee trust on food safety behaviour?

1.3 Aim and Objectives of the Study

Based on literature gaps and practical problems of the current study, it is necessary to fill this void and contribute to the practice of HBBS in the UAE. Hence, the present study investigates the impact of training effectiveness on food safety behaviour and determines whether there is a relationship between food handlers' attitudes, commitment, and trust in their food safety behaviour.

1) To investigate the impact of employees' training effectiveness on food safety behaviour.
2) To examine the impact of food safety attitudes on food safety behaviour.

3) To examine the impact of employee commitment on food safety behaviour.

4) To investigate the impact of employee trust on food safety behaviour.

1.4 Significance of the Study

This study is the first to consider how food safety behaviour may improve by focusing on training effectiveness, attitude, commitment, and trust. The study plans to outline the proper techniques for handling food and safer food-handling practices to prevent foodborne diseases and contamination for firm owners and customers. The study also intends to offer an improved training approach to develop workers' ability to handle food. Also, it will provide insight into the impacts of commitment and attitudes on food handling behaviour. These data allow for gauging training effectiveness in improving food handlers' perceptions of and adherence to acceptable behaviour, thereby enhancing commitment (Anglim et al., 2019). The study intends to improve food-handling behaviour among HBB workers, emphasising owner conduct. It boosts the ability of HBB owners in the community, ensuring that food handlers are correctly managed in different organisations. In addition, the study plans to help identify effective interventions and strategies that can be used to improve food safety performance in these businesses.

1.5 Flow of the Study

This study is structured as follows (see Figure 1.1). Chapter one introduces the background, the research problem, objectives, and structure of the study. A second chapter reviews the literature related to the research topic by various researchers. The relevant studies include philosophical, research-based, structure-based, and foundational studies. A research model and hypotheses are presented in this chapter. The third chapter discusses the study's methodology, such as research design, population, sampling techniques and tools, and data collection methods. The fourth chapter presents the study findings and hypotheses testing along with analyses of statistical tools and

results and discusses these results. Finally, the fifth chapter presents the conclusions, recommendations and limitations of the current study based on the discussion of study findings and research models.

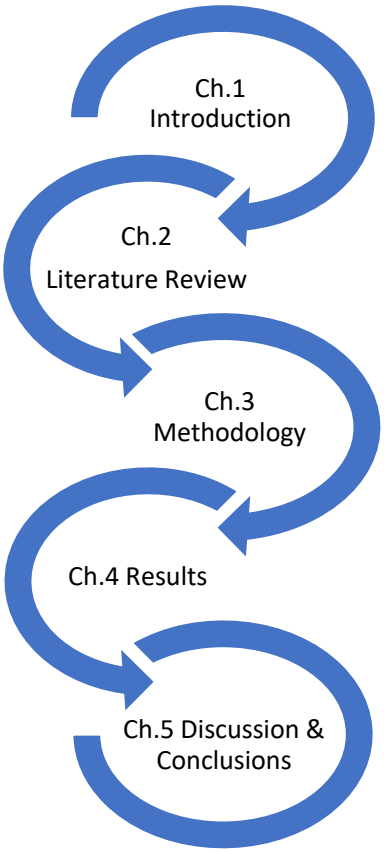


Figure 1.1: The flow of the thesis

Chapter Two: Literature Review

This chapter reviews the literature relevant to the variables used in this study. The study variables include food safety behaviours, training effectiveness, employee attitudes, commitment, and trust. Food safety behaviour is the dependent variable; the others and their dimensions are independent variables. First, the chapter provides conceptual definitions. Second, the study hypotheses are proposed based on the literature review. Third, a conceptual model of the study is developed. Finally, the relevant literature is summarised to highlight the gaps and study motivation.

2.1 The Concept of Food Safety

Food safety behaviour is a new and emerging topic that is becoming increasingly important in the food industry. Food safety behaviour is the actions and behaviours of individuals who work in food-related businesses, such as chefs, cooks, waiters and waitresses (Lange et al., 2018). These individuals must take appropriate measures to protect themselves and their customers from health risks associated with foodborne illness (da Silva Farias et al., 2019). There are many specific factors of food safety behaviour, namely personal hygiene, proper food preparation, and environmental hygiene (Young et al., 2015).

Personal hygiene is one of the most important factors affecting food safety behaviour, as it would prevent contamination of food through personal contact. This is particularly true for waitresses and waiters as they handle raw, ready-to-eat foods (Lange et al., 2018). Personal hygiene includes washing hands, gloves, and food preparation, which are important for food safety (da Silva Farias et al., 2019). Proper personal hygiene is essential to keep the risk of cross-contamination limited to a low level to prevent contamination of food products.

Food hygiene is a set of practices which must be undertaken to ensure that foods are safe for human consumption (Young et al., 2015). There are many specific food hygiene practices, including washing hands and utensils, hygienically preparing fruits and vegetables, avoiding cross-contamination, and proper food storage (da Silva Farias et al., 2019).

Environmental Hygiene is another fundamental factor in food safety performance (Lange et al., 2018). Food businesses are complex, and it is challenging to control all the possible sources of contamination. Factors such as the deterioration of food due to improper storage, cross-contamination from other foods and surfaces, inappropriate temperature control, etc., may all cause foodborne illness risk to be elevated (da Silva Farias et al., 2019).

Food handling is the duty of each individual engaged in food administration activities. General mistakes in food handling and serving poorly cooked foods are problems (Aziz and Dahan, 2013). These blunders may contaminate food. Numerous studies have distinguished the requirement for proper food preparation, instructing food-handling employees on cleanliness, the importance of storing food in fridges, explaining microbiological food perils, and cross-contamination (Worsfold and Griffith, 2010, Byrd-Bredbenner et al., 2013, Al-Kandari et al., 2019). Even so, some studies show no contrasts between trained and non-trained staff (Afifi and Abushelaibi, 2012, Almanza et al., 2007). Thobaben (2010) and Campos et al. (2009) similar show that even though training may offer sanitation information, it may not revise food-handling employees' behaviour on food safety.

Numerous food cleanliness instructional classes depend intensely on the arrangement of data and current representative information (Egan et al., 2007), given the information, perspectives, and practices model (Ehiri et al., 1997). Despite its broad acknowledgement, the model is condemned because it expects people to proactively change their practices once furnished with appropriate information and materials (Ehiri et al., 1997). Inadequate information cannot trigger preventive

practices. Utilising self-revealed practices of Brazilian food overseers from various food firms, Da Cunha et al. (2014b) show that information-based preparation did not improve representatives' sanitation perspectives and practices. Likewise, Powell et al. (2011) find that the number of food hygiene infringements increased during supper administration times, although representatives had led food-handling preparations. Accordingly, expanding sanitation information may not prompt better food hygiene practices, particularly during feast administration.

Many studies reveal that food safety behaviours are the basic cause of foodborne illnesses when food contamination occurs (Taha et al., 2020a, Taha et al., 2021, Byrd-Bredbenner et al., 2013). Food contamination usually occurs when preparing or serving. Food safety employees must have better training to ensure efficacy in handling food to avoid foodborne diseases from contamination. Prior studies show that the lack of proper hygiene is the main reason for problems regarding food safety (Kassa et al., 2010). Olsen (2012) examine the training of operatives in food handling and shows that food contamination often occurs at the handling stage, infecting consumers. The lack of proper food preparation at the right temperatures and poor personal hygiene of handlers is the main reason for food contamination and the spread of foodborne diseases. Moreaux et al. (2018) present possible prevention procedures that food safety employees in HBBs should primarily use to improve food handling.

In the handling process, active personnel must wash their hands for a minimum of 20s with cleaning soap. The water temperature should be at least 100 °F. Therefore, food safety employees should wash their hands thoroughly before processing food, which is especially essential for personnel who have direct contact with food (Akabanda et al., 2017).

The department's proviso is that any food-handling practitioner should wash their hands properly when absent from the food-handling area (e.g. non-food-handling activities such as visiting the

washroom, smoking, chewing tobacco, drinking, and eating). Improper handling and hygiene present the need for adequate food safety training in handling food (Harrison et al., 2016).

Cross-contamination transfers bacteria from one object to another and occurs directly from food to food or indirectly from hands and work surfaces. Direct contamination is when the source of the bacteria contacts the food directly, such as when raw meat touches high-risk food. Indirect contamination relies on a transfer medium (Young et al., 2020). For example, when raw meat is prepared on a chopping board with utensils, it is considered a high-risk food (Taylor, 2011). A variety of food hazards can be caused by contamination, cross-contamination, and physical agents, including biological and chemical agents.

Biological contamination includes pathogenic macroparasites and microorganisms. In addition to bacteria, microbial hazards in food include various eukaryotic microorganisms such as fungi, protozoa (e.g. Toxoplasma, Sarcocystis species, Cyclospora, Giardia, and Cryptosporidium), viruses, and prions (Untermann, 1998). Viruses are present in raw food of animal origin, such as meat, or brought into the food via contamination. They can multiply with conditions necessary for growth. Viruses for which foods can serve as vectors include poliovirus, hepatovirus (hepatitis A), and various gastroenteritis viruses (e.g., rotavirus, astrovirus, and caliciviruses, such as Norwalk and Norwalk-like viruses). Food can either be contaminated directly by humans or indirectly via contaminated water (Untermann, 1998). Such hazards cause the most foodborne illness outbreaks and are of the greatest concern to foodservice managers and health inspectors in contamination cases with toxic metals and dioxins.

Further, chemical contamination can occur through the intentional use of various chemicals such as pesticides, veterinary drugs, other agrochemicals, and adulterants (Kassa et al., 2010). Beyond illness, the accidental or intentional addition of toxic chemicals can cause death. Occasionally,

contamination occurs during the maintenance of the equipment used for preparing food during sanitising, cleaning, or controlling insects or rodents. Chemicals must be used per manufacturers' instructions, and, beyond contaminating food, no poisonous or toxic materials should be a hazard to employees or consumers (Neal and Sirsat, 2015). Physical contamination includes objects outside the food; for example, any hard or sharp objects that can cause injuries, such as glass, hair, jewellery, and cigarette butts, entering a food product at any stage of production and cause damage to the intestine or cuts to the mouth or throat. Health Canada considers anything larger than 2.0 mm a physical hazard; thus, the routine inspection of equipment and maintenance is a good means of avoiding physical hazards (Tegegne and Phyo, 2017).

2.2 Food Safety Practices in UAE

The UAE is among the most important GCC countries, given its numerous nationalities and diverse backgrounds, conventions, and values, affecting food safety standards and behaviours (Afifi and Abushelaibi, 2012). In the UAE, food safety is a top priority, and health officials are always working to make the community aware of best eating practices. Since regulatory authorities have little control over the safety of food prepared at home (Saeed et al., 2021), it is imperative to educate food handlers about food safety and foodborne diseases. In Abu Dhabi, the government has launched an ambitious programme to establish and improve 'social norms' in food handling. Using international research and best practices, the project has developed novel and successful strategies with food handlers in more than 150 languages, many with poor literacy skills and very different cultural standards (Al Yousuf and Taylor, 2011).

Few studies explore the situation from a consumer or food handler perspective (Al Yousuf and Taylor, 2011, Saeed et al., 2021, Taha et al., 2020a, Taha et al., 2020b, Afifi and Abushelaibi, 2012). Even though recent studies explore factors that may lead to better safety food behaviour,

such as attitude, commitment, risk perception, training and knowledge (Afifi and Abushelaibi, 2012, Taha et al., 2020a, Taha et al., 2020b), they show insufficient evidence for practical use. Regarding factors affecting food safety behaviour, the literature lacks in-depth exploration of managerial factors such as training effectiveness and employee trust that considerably impact employee perceptions and behaviour. Thus, the current situation is still unclear in the UAE, given the lack of knowledge on foodborne diseases and personal hygiene habits and behaviour.

2.3 Food Safety Behaviour

Good hygiene practices are a critical concept when discussing food safety. This section focuses on personal hygiene and hygiene associated with food management. Poor personal hygiene poses a significant risk regarding food contamination, further causes food poisoning (Lee et al., 2017). This aspect further highlights the importance of handwashing. Beyond personal hygiene, food cleanliness targets preparing, handling, and storing food in clean or dirty areas. Thus, food hygiene cuts across all food-handling processes from producers to consumers (Al-Shabib et al., 2017).

This describes the conditions and measures necessary to maintain the safety and suitability of food at all stages of the food chain, encompassing all efforts required to make food safe and wholesome during preparation, processing, manufacturing, packaging, storage, distribution, handling, and sale or supply to consumers (Luning and Marcelis, 2009). In summary, food hygiene is all the conditions and measures that are necessary to ensure the safety and suitability of food at all stages of its growth, distribution, and preparation. (Tieman and Ghazali, 2014). Yu et al. (2018) describe information concerning the theory and practice given to eatery workers through legitimate handwashing procedures. Since individual uncleanness is possibly the most noted reason for foodborne illnesses, it is key to evaluate matching handwashing information and conducting food overseers. Scholars have studied the handwashing behaviour of those involved in food preparation

and show that knowledge-based preparation alone did not fundamentally improve handwashing behaviour. Instead, training enhances handwashing performance (Faour-Klingbeil et al., 2015).

High temperatures in food preparation areas can also create an enabling environment for bacteria, which can deleteriously affect food quality (Ali and Immanuel, 2017). Certain toxic compounds, such as nitrosamine chloropropanols, PAHs, furanes, and acrylamide, can appear in food sources during food preparation, such as warming, heating, broiling, barbecuing, canning, hydrolysis, or ageing. Searing is the cooking method with the most significant potential to generate a wide assortment of harmful mixtures into food. Flavour substances are created from the oxidised broiling of oil with proteins, sulphur, and nitrogen substances in food. Different mixtures are then delivered from food into broiling oil to improve staining or off-flavours. Colours in fricasseeing oil may also be adsorbed on outside-singed food (Singh et al., 2020).

Poor personal hygiene could lead to food handlers acquiring intestinal helminths, protozoa, and pathogenic bacteria in food establishments (Ifeadike et al., 2014). Food handlers are individuals who work in food and beverage establishments and handle food, including the handling of cutlery, plates, bowls, and chopping boards (Ovca et al., 2018). Food handlers infected with foodborne diseases are a major source of foodborne disease in industrialised countries. Ingestion of infected food can cause mild to severe illness, hospitalization, or even death (Marklinder et al., 2020). There is a higher likelihood of detecting and attribution of diseases with short incubation periods (Ogendo, 2021).

Food handling can be defined as any preparation, processing, cooking, packaging, storage, transport, and distribution operation (Zanin et al., 2017). Most studies posit that many consumers frequently use unsafe food-handling practices (Lin and Roberts, 2020, Young et al., 2015, Soon et al., 2012). Having developed and implemented food safety education strategies (Shi et al., 2020)

to improve specific food safety behaviours (Hessel et al., 2019), it is likely that improvement in consumer food-handling behaviour will result in a reduction in foodborne disease risk and incidence. Additionally, food safekeeping (time-temperature), safe-source food, and good personal hygiene contribute to the sustainability of safe food (Sanlier and Konaklioglu, 2012).

Jianu and Goleț (2014) noted that food handlers should possess adequate food safety knowledge in order to understand the conditions and practices pertaining to the proper handling of food. Personnel in the catering, manufacturing and retail industries handle packaged or unpackaged food, food equipment, or food contact surfaces. Businesses in these sectors are required to adhere to food safety standards (Souza et al., 2018). A food handler can perform a variety of tasks for a food business, such as preparing, cooking, serving, packing, displaying, and storing food, therefore being involved in manufacturing, producing, collecting, extracting, processing, transporting, delivering, thawing, and preserving food at all stages of food preparation and storage, from raw materials to end products (Lin and Roberts, 2020).

Many people consume food in public places such as restaurants, food festivals, and food trucks, while food prepared in houses is safe because it is easy to know each step during the preparation (Kwol et al., 2020). It is important to note that contamination and cross-contamination of food occur when food comes from unsafe sources and is handled improperly, stored in unsanitary conditions, and cooked improperly, which are the factors that contribute to foodborne pathogen spread in the food service sector (Nkhebenyane and Thekisoe, 2021, Alegbeleye et al., 2018).

According to the literature, Food safety behaviour is divided into three factors: personal hygiene, food hygiene, and environmental hygiene (Aunger et al., 2016). These three factors are explicated in the following sub-sections.

2.3.1 Personal Hygiene

Personal hygiene is something every food handler should practice, as food handlers with poor hygienic practices such as not always washing hands with soap and water before handling food or respiratory drippings can be a major reason for contamination (Young et al., 2020). Contamination of food can occur if the food handler does not know the basics of food hygiene principles; even if not deliberately, it leads to foodborne disease outbreaks (Griffith, 2013). Delea et al. (2020) argued that the basic practices for personal hygiene, such as face washing and handwashing, reduce the transmission of pathogens; thus, many public health programmes promote the adoption of improved personal hygiene practices. Sometimes, food handlers' knowledge and educational level can be the primary reason for poor hygienic practices (Woh et al., 2016). Bacteria, toxins, or viruses may be present in contaminated food or during food processing, such as catering staff hands, equipment, and surfaces (Veflen et al., 2020). Further, other diseases may occur because of poor personal hygiene, caused by harmful toxins or chemicals contaminating the food. The symptoms of these contaminants are nausea, vomiting, abdominal cramps, and diarrhoea, caused by microbes or toxins entering the body through the gastrointestinal tract (Byrd-Bredbenner et al., 2013). For example, some bacteria, such as Staphylococcus aureus, can be present in some types of food and may cause intense vomiting. Thus, food-related infections are a significant health problem in many countries (Mathenge et al., 2017). In some countries, inadequate food safety programmes may induce frequent pathogen contamination, rendering the burden of foodborne illnesses to be significant (Tegegne and Phyo, 2017).

As an essential requirement, all food handling staff must be fit for work and bear no disease that may result in food contamination (Da Cunha et al., 2014b). Further, they must wear protective and clean clothing and cover their hair. Protective clothing includes aprons, gloves, jackets for freezers

and cold stores, footwear and head coverings, and clothes distinguishing food handlers in different production areas (Ali and Immanuel, 2017). They protect food from contamination and protects the food handler from injury. However, protective clothing can be a risk factor during use (Hassell et al., 2017). For example, gloves can be damaged, and there can be microbiological contamination from gloves used for raw food preparation and employed for ready-to-eat foods. Loose threads from cloth aprons can also contaminate food. Preventive measures involve using undamaged gloves, wearing clean clothing, and fully covering one's hair (Ali and Immanuel, 2017).

Foodborne diseases can be prevented by reviewing the control points of food production processes and implementing the HACCP system (Abdelhakim et al., 2018). Cleaning and washing hands, for example, are necessary before and after the production process using rubbing, soap, and hand drying (Ovca et al., 2018). Handwashing helps prevent food contamination by food handlers, especially as the hands are among the most common sources of cross-contamination in food production areas (Da Cunha et al., 2014b). Hands can be contaminated with bacteria such as E. coli, Salmonella, and Staphylococcus aureus, and viruses such as norovirus that can be present on the hands of food workers but can be removed by proper handwashing techniques. Techniques include mixing hot and cold water to wash hands, using non-hand operable taps, using soap, and using suitable hygienic hand drying, such as paper towels and providing hand disinfection facilities (Young et al., 2020).

2.3.2 Food Hygiene

Food hygiene in food-based businesses is crucial to prevent bacteria from multiplying in foods and should be used in all practices and precautions involved in the food preparation and handling process (Grout, 2019). Food storage should be based on the standards and regulations for each food. For example, dry food should not exceed 25°C, while frozen or chilled food should be

between 1 and 4°C to prevent the growth of pathogens (Taylor, 2011). There is no immediate way of telling if food is contaminated or cross-contaminated because one cannot see, smell, or taste the bacteria. Cross-contamination in the refrigerator can frequently occur, especially with raw food. Thus, it must be strictly separated from ready-to-eat food, and different refrigerators should, ideally, be used (Byrd-Bredbenner et al., 2013). The top shelf in the refrigerator is not the correct place to store raw food because of the potential for the dripping of raw juices to foods beneath, which may increase the probability of cross-contamination (Young et al., 2020).

When defrosting poultry or meat, a critical point for food safety in frozen food is not using room temperature or warm water. The item is placed in a sealed package in cold water in the refrigerator to prevent foodborne pathogen growth (du Toit and Venter, 2005). Clean areas are important for food storage. Moreover, food must be handled correctly to decrease the growth of microorganisms and prevent the build-up of crumbs and other food fragments; for instance, dry food should be kept off the floor and stored in safe, undamaged containers when removed from the original packaging. It should be re-labelled with all information for food safety, such as ingredients, date of production, and expiry (Fatimah et al., 2011).

2.3.3 Environmental Hygiene

Environmental hygiene by controlling hygiene for kitchen operatives must follow the basic procedures for cleaning and organising to prevent cross-contamination, such as wiping counters clean with soap and water and sanitising surfaces with disinfectant sweeping and floor mopping (Wafukho and Rotich, 2021). Contamination may be found in different kitchen areas, such as dishcloths, sponges, faucet handles, and sink drains, given their higher level of moisture (Byrd-Bredbenner et al., 2013). Additionally, waste management can influence kitchen hygiene. Thus, food operatives should avoid accumulating waste in food handling or working areas by ensuring

that they are regularly removed from such areas. Bin areas must be clean and well maintained to prevent insects, such as flies, mosquitoes, and rats because they are all effective vectors of diseases (Sanlier et al., 2020). Cleaning reduces the risk of cross-contamination and prevents the build-up of dirt and waste. Thus, the food industry business chain must maintain a good level of cleaning, especially when preparing food in a high-risk environment, and disinfection steps must reduce pathogens to a safe level on slicers, chopping boards, knives and utensils, and food mixers. Food contact surfaces are defined as any surface, equipment, or a utensil that touches food directly, such as cutting boards, knives, and stockpots (Hassan et al., 2017). Cleaning and sanitising contact surfaces serve many purposes, especially preventing foodborne illness-causing bacteria that may be clustered on the surface by food residues, thereby providing an ideal environment for microbes.

Young et al. (2020) recommend that they should be prioritised in future education, training, and outreach initiatives with food handlers. Moreover, they can contribute to establishing policies and promoting food safety by improving efforts to spread food safety awareness. For example, to reduce the chances of cross-contamination in the kitchen, the cutting boards for raw meat and other foods are always separated. They must be washed, rinsed, and disinfected regularly, especially after use. Each type of raw food must have a separate container or bowl and separate plates of cooked food from raw food. Further, disposable cloths or towels must be used to wipe raw meat or poultry. Cross-contamination may occur when preparing raw and cooked foods on the same surface using the same utensils without further heat treatment. Food production areas and equipment must be kept clean and well maintained (Souza et al., 2018).

Food can be contaminated by many things, such as flies, pests, animals, and unclean utensils and pots (Ali and Immanuel, 2017). Sánchez-Bayo (2011) defined pests as any kind of animal capable of directly or indirectly contaminating food, such as rodents, birds, and insects. Pests pose a basic

threat to food safety; thus, good hygiene practices and pest control are vital to avoid contamination of food by pests. Pest management is a major factor in food safety programmes worldwide. Inspection and monitoring of all kinds of food can decrease infestation, and there is no need for pesticides to control pests (Abdelhakim et al., 2018). Contamination may occur in many places. The cracks in buildings can be a place for infestation and harbouring insects, so facilities for food preparation should be kept in good condition. Drain holes must be sealed to ensure insects will not move to the kitchen or places where food is prepared. Moreover, wire mesh screens can provide good protection for windows and doors to minimise pest entry (Abdelhakim et al., 2018). Food preparation areas and their surroundings must be regularly examined to ensure no evidence of infestation or insect harbouring. Garbage containers should always be covered and placed in an appropriate place away from the food preparation area. Consequently, several models measure food safety behaviour via good hygiene practices, and, as noted, some measure food safety via training effectiveness (knowledge, behavioural, and results), attitude (emotional, cognitive, and behavioural), and commitment (affective, continuance, and normative) (Hessel et al., 2019).

2.4 Training Effectiveness

Skill intensity through training and food safety behaviour are positively related. Most employees require ample and continuance food safety training for continuance development in hygiene and good service, especially within the highly dynamic competitive environment framework (Rekalde et al., 2017). Additionally, ensuring that trainees can efficiently transfer their training to the work environment via good training programmes that examine factors that influence the implementation of the training programme, training is an important aspect of human capital investment, influencing the production level of performance directly and indirectly. Further, training develops and

enhances their skills, contributing to accumulating human capital to complement education (Sahni, 2020).

Training employees for good food is an ancient initiative, and responsive training is essential in handling any kind of food-related concern, for which there is a need for strict regulations to ensure better food safety behaviours, helping minimise risk in food safety (Kassa et al., 2010). The history and development of these practices are key to this section. It entails the inclusion of training and development models and assessment after training to understand whether trainees have gained the necessary skills to handle food (Khosrobeigi et al., 2021), especially for organisational employees to whom the training is needed to ensure good food and life through food safety behaviours (Al-Kandari et al., 2019). Improving the morale or values of employees through food safety-related training effectiveness is critical to refining their abilities. Thus, this section emphasises employee training to promote food safety, particularly in HBBs (Salisu, 2020).

Effective training is essential to refining the knowledge and expertise food-handling employees should use to ensure that food is prepared and served safely (Rodríguez-Caturla et al., 2012). Food safety training teaches food-handling employees the safest means of handling and preparing meals to protect the public and themselves from illness and prepare themselves for thousands of jobs in the food industry (Byrd-Bredbenner et al., 2013). The relevant agencies should ensure that all the food available in the market has been checked for contamination by taking random samples for investigation (Akabanda et al., 2017). Correspondingly, Fatimah et al. (2011) summarise some food safety studies. They explored the impact of improving food safety knowledge, attitudes, and practices in the food sector, how it can affect employee practices, and how employee perceptions of food safety depend on FSM, size, and type of work system.

Several training methods are normally used in business. Even within one organisation, different methods are used to train different employees. The design of training programmes must guide the use of specific training techniques and methods comprising two classifications: on-the-job and off-the-job. In most studies, training methods had seven criteria: learning modality, learning environment, trainer presence, proximity, interaction level, cost considerations, and time demands (Valenstein-Mah et al., 2020).

On-the-job training is the most common means of training employees; it develops employees in their present job. It is a formal and planned programme via feedback from employees' daily work. It can also be used for mentoring, internships, apprenticeships, job rotation, and transfers (Read and Kleiner, 1996). For instance, employee training by experienced employees or superiors guarantees the most effective spread of knowledge. On-the-job training methods include vestibule training, apprenticeship training, coaching by supervisors, orientation and induction training, understudy training, job rotation training, assistance with training methods, and teaching machine methods (Harrison et al., 2016). Off-the-job training means taking employees away from their workplace; it is considered an effective training method for learning specific skills, knowledge, and attitudes that may be useful to the organisation. Training modes include conferences, lectures, seminars, internship training, discussions, classroom training, case study methods, management institutions, role-playing, brainstorming, and sensitivity training (Yokoyama et al., 2019).

However, food-handling employee knowledge in HBBs remains poor, even though most undergo training. As a result, evaluating employee training is essential to ensure they have the necessary awareness and knowledge to meet food hygiene requirements, even if this doesn't always result in an improvement in food management (Akabanda et al., 2017).

Work experience is key to achieving excellent practices among food-handling employees. It is vital to conduct a simple test at the end of every food session training to evaluate trainees' level of understanding (Ncube et al., 2020). Moreover, knowledge is a vital element that influences the attitudes and practices of food-handling employees. In this case, food-handling knowledgeable employees have good practices and attitudes (Nyamari, 2013). Training effectiveness is an essential element in the business because it enhances the competencies and efficacy of workers (Clements and Bihn, 2019). As noted, HBBs need qualified staff with a certain level of education. The business sector does not provide enough qualified persons, which increases the risk of people contaminating food operations by mishandling.

Training effectiveness is determined by analysing changes in employee behaviour and modifying organisational structures as necessary (Farjad, 2012). An organisation must evaluate training effectiveness and identify gaps to provide information and feedback on the programme's relevance. Kodwani and Prashar (2019) suggest that training effectiveness may be improved by considering several factors, including the training environment, assessment, and degree. They conclude that all variables can impact trainees negatively; thus, learners should be aware of all aspects of training, including policies, content, length, and whether a post-training evaluation will be conducted. Alipour et al. (2009) indicate that training effectiveness can be measured via the amount of change in employees' abilities, knowledge, and behaviour, demonstrating how the programme may support the organisation's goals and objectives.

Training increases in effectiveness when learners apply what they learn about their jobs (Farjad, 2012). Egan et al. (2007) state that the primary means of measuring the effectiveness of training are the learning outcomes of a course (knowledge criteria), their impact on job performance and behaviour (behavioural criteria), and the evaluation of course outcomes (results criteria).

Although several assessments and effective techniques are available for training, proper use is vital. Therefore, the Kirkpatrick assessment can be helpful (Zanin et al., 2017). As mentioned, this model divides modules into four levels of commitment: what the trainer's learners thought about the training, their level of knowledge gained, how behaviour affects on-the-job performance, and finally, results, which examine the impact on the organisation or environment of the business (Abdelhakim et al., 2018). Donald Kirkpatrick developed the Kirkpatrick model in 1959. James Donald and his wife published four training evaluation levels, improving Kirkpatrick's approach: Commitment, learning, behaviour, and results (Sahni, 2020). Thus, in an HBB, these levels can be used to teach individuals about maintaining cleanliness and food safety.

Ensuring that training is helpful to participants is the first level of dedication. Beyond participant contribution and response, this level measured the engagement of the training. Future training can be improved by identifying overlooked subjects. Trainees might be asked if the training benefitted them and was successful and how they could apply the training to their everyday work (Lamm and Priest, 2019). Moreover, employee satisfaction questionnaires can be provided, and body language can be used to assess the effectiveness of the training. In the second level, the trainees can be assessed on what they learned and did not learn (Mohanty et al., 2019).

Further, the programme measures the motivation the training provides for employee improvement. Testing learners' perceptions, existing abilities, and knowledge before and after training can reveal the differences (Bretz, 2019). It is possible to track how often trainees clean their hands and store food in an HBB.

Third-level behaviour determines how well someone can absorb instructions. It can also identify where help is needed. Training in home-based food companies, for example, might be evaluated to determine whether trainees improved their cleanliness after training. Mohanty et al. (2019) posit

that if an instruction is ineffective if it does not cause consumers to alter their eating habits. A procedure in place must encourage learners to make adjustments given their training. Behaviour is measured over a longer period, yielding results at the end of the training process, such as impacts beneficial to the company and consumers. Some advantages are quality enhancements, lower costs, more output, higher profits, and a stronger return on investment (Bretz, 2019). Reduced contamination, safer food, and reduced foodborne diseases are additional strategies in the home-based food industry (Abdul-Mutalib et al., 2012). Resources and time are required for such efforts. For instance, the Kirkpatrick model assesses cabin crew food-safety training and enhances future training. This study shows that training is ineffective in some areas, such as behavioural change and learning and the influence on implementing food safety procedures (Abdelhakim et al., 2018).

Taha et al. (2020b) suggest that food-handling employees have not been appropriately inspired or persuaded to focus on their work. The study uncovered that preparation impacts food managers' responsibilities, guiding the execution of safe food systems. These outcomes are congruent with prior studies (Aladwan et al., 2013, Bashir and Long, 2015, Akabanda et al., 2017). Furthermore, Woh et al. (2016) find that preparation influences representatives' responsibility and hierarchical execution. The study proposes that food controllers' training must accentuate the significance of safe practices and stress the correct method. It should be done for each job and must be among the food manager's commitments toward creating safe food for the public (Taha et al., 2020b).

Organisations should advance worker involvement beyond work settings by inviting workers to relevant meetings and urging them to propose their ideas for practice and training. This finding is consistent with different studies that affirm that workers' representation is essential for raising and addressing issues (Taha et al., 2020b). Thus, representation induces a feeling of being esteemed by the organisation. It drives workers to amplify their endeavours and improve their responsibility

and execution (Kuuml, 2011, Sinha et al., 2016, Wilkins et al., 2017). Moreover, management support impacts food managers' commitment and the assembly office's food handling execution. This outcome is consistent with prior studies. For example, Simosi (2012) and Wilkins et al. (2017) affirm that a representative helped improve hierarchical execution. Subsequently, authoritative support was used as an indicator of hierarchical responsibility. When workers feel the organisation meets their necessities, responsibility is delivered.

Two-way communication among directors and employees is critical in each work setting (Sharma and Dhar, 2016). The connection between communication and food controller responsibility is critical. Top-down communication can advise, teach, and inspire food managers. Directors can, however, utilise base-up communication to survey food controllers' perspectives and insights, generate ideas for development and obtain data on issues that may affect the facility's food safety execution (Griffith, 2013). Thus, successful communication among executives and food managers may positively affect coordination, participation, and food controller consistency with systems and arrangements (De Boeck et al., 2016, Griffith et al., 2017). The board may utilise numerous media, such as banners, pamphlets, signs, recordings, gatherings, and site visits to connect with food controllers (Bust et al., 2008, Nayak and Waterson, 2017, Schweon et al., 2013). Taha et al. (2020b) reveal that representative responsibility guides workers to actualise safe food techniques and improve authoritative sanitation execution. The finding is predictable with past discoveries, where hierarchical responsibility is helpful to workers and authoritative performance. A detailed probe demonstrates that the positive relationship between workers experiencing responsibility and occupation execution is reflected in improving authoritative implementation since representatives perform better when they have compelling, passionate connections with their relationships.

Affective commitment refers to how much workers want to continue working at their companies (Bouraoui et al., 2019). Workers affectively committed to their companies want to continue providing services to those companies. They usually identify with company goals and objectives, feel that they fit into the company, and are content with their work. Further, affectively committed workers feel valued as assets for the company and act as company ambassadors. Thus, increased work gratification likely induces a sense of affective commitment. The affective commitment can also result from favourable working environments (Semedo et al., 2019). In most cases, employees develop affection for their jobs if treated well. The organisation can also contribute to employees developing affection for their jobs by motivating and rewarding them, paying good salaries on time, and promoting teamwork.

Moreover, employees' affective commitment to their work contributes to organisational growth (DiPietro et al., 2020), as workers provide their services willingly without supervision. Moreover, given their affection for the job, employees work together to ensure that companies achieve set goals and objectives.

Moreover, affective commitment adds value to the company's operations because employees are regarded as company assets (Semedo et al., 2019). According to Semedo et al. (2019), assets contribute to a company's general income due to employees' affective commitment. Thus, the company can produce quality goods, enabling it to compete with rivals because employees with affection for their job can work without managerial supervision, thereby achieving organisational goals independently. A company that can achieve its goals expands and remains relevant in the market. Most business organisations prefer to have employees with affective commitment because they positively impact organisational growth, a primary goal of every firm (Naim and Lenka, 2017). Every organisation aims to grow and expand its operations and make profits. Thus,

employees' job affection is vital to ensure the organisation has attained its main objectives (Albrecht and Marty, 2020). Employees tend to produce quality goods and services if they love what they are doing; thus, the company can meet product quality standards demanded by consumers, given employees' affective commitment.

This type of commitment may be essential in ensuring that HBBs flourish. For instance, HBBs involved in creating preserves or jams must develop affective commitment to perform well in the business (Reuschke and Mason, 2020). A person can make food that another person loves, like jams or chocolate, and sell them to people online. An individual can conduct all business activities with an affective commitment to firm goals, only through which any business can flourish. HBBs especially need job affection to flourish because the business may encounter various challenges that may require an employee to develop solutions (Asif et al., 2019). Moreover, a person must develop an affective commitment because this person may not have any other job alternatives.

Continuance commitment occurs when employees weigh the advantages and disadvantages of leaving their organisation (Hadi and Tentama, 2020). Employees may feel they must continue working at the organisation because of worse comparative challenges. Foreseen challenges can be monetary, as workers may lose benefits and salaries. Workers may feel obligated to continue working at their company because their fringe benefits and salaries will not increase in another setting (Averin, 2020). It can become a problem for the firm if workers are dissatisfied with their job and unwilling to leave. Therefore, employees develop continuance commitment given their potential loss in an alternate setting (Chau, 2018). Thus, it may negatively impact the organisation because employees' commitment is not from their work enjoyment but fear of loss when they quit. Hence, workers may not provide quality services and products because they do not enjoy working in the organisation, as they are motivated by fear rather than love (Averin, 2020).

HBBs may grow with a commitment to continuity because most are considered small-scale and do not have the financial resources to pay high wages and salaries. Thus, the continued commitment of employees contributes to the expansion of HBBs. The growth and expansion of HBBs, such as bakeries, likely occur because of continued commitment (Kane and Clark, 2019), as workers may not have other options, given that quitting may induce losses. Thus, fear of experiencing loss fuels continuance commitment in HBBs.

Next, as per Kaplan and Kaplan (2018), normative commitment alludes to the significance of workers in their organisation. Workers with an undeniable degree of standardised responsibility feel they must stay in the organisation. In a normative commitment, culture and a hard-working attitude fuel commitment. Accordingly, representatives feel dependability on the organisation, and their obligations may impact normative commitment (Clugston, 2000). Regularising commitment identifies the extent to which workers feel they should remain in their organisation. Workers that are normatively dedicated largely feel that they should remain in their organisations. Normatively dedicated workers feel that leaving their organisation would induce bad outcomes and regret, which may differ per worker. However, workers are commonly worried they would let down their colleagues. Such sentiments can impact representatives (Klimchak et al., 2020).

A hierarchical responsibility is connected hypothetically and precisely to a singular execution for food safety behaviour promotion. Ennis et al. (2018) reveal a positive and critical connection between feelings of responsibility and continuation of responsibility and work execution; however, normative commitment and work execution show no significant relationship.

Normative commitment is relevant to employee retention, which is the feeling of obligation to remain with an organisation, influenced by prior and subsequent experiences (Farjad, 2012). Sow et al. (2016) studied this relationship and found that normative commitment is essential for

retaining workers. Employee retention is critical because it entails high performance and satisfied clients. These outcomes suggest that authoritative pioneers should make an ethical connection between their organisations and representatives. Regularising responsibility will probably be advanced in privately-owned companies where individuals have a solid connection to the organisation given family connections or bonds with their colleagues. Evidence suggests that giving a few advantages to workers indices regularising responsibility in them.

Normative commitment is also essential for encouraging creativity and innovation. Hakimian Hakimian et al. (2016) explored the significance of normative commitment to employee innovation. It is workers' conviction to remain with an organisation based on their devotion and commitment. This commitment induces more obligations, unlike individuals who do not have a standardised responsibility. It empowers workers to comprehend the work environment better and focus on work issues. It enables workers to comprehend the work environment better and focus on the issues at hand. They may adopt creative solutions to problems or improve work routines as a result of their commitments. When given the privilege to work, representatives with an undeniable level of normative commitment make an honest attempt to do their jobs. Hence, the standardised responsibility established in their ethics encourages them to be creative and share ideas with colleagues and superiors.

According to Munene and Dul (1989), normative commitment is not determined by education, pay, or age but rather by a feeling of common trust that sets up a commitment to remain with the organization. Thus, normative commitment is positively correlated with work performance, work participation, and hierarchical citizenship; for instance, normative commitment helps to build trust and authoritative support in the workplace (Powell et al., 2006, Ozag, 2006). Commitment proposes that representatives may convey executive practices based on correspondence. Thus,

administrators must discover what spurs and fulfils workers and act accordingly. Including representatives and making them part of the arrangement by preparing, trusting, conversing with, and expressing gratitude toward them, notwithstanding their successful cooperation, positively affects worker responsibility in food safety execution. Thus, there is also a significant relationship between commitment and attitudes toward food safety behaviour (Wang and Tsai, 2019).

The complementarity of attitudinal and conduct responsibility is basic (Meyer and Allen, 1991) in conceptualising a multidimensional model of authoritative responsibility. Baser et al. (2017) show that demeanours affect the connection between information and conduct, and responsibility exerts an intervening impact (halfway) on the relationships and results among information-conduct and disposition-conduct. A fulfilled worker may advance in the organisation, despite challenges, such as an awkward workplace. Having the correct knowledge via training, significant pay, or a relevant situation may not induce more company dedication; however, demeanour impacts representative responsibility (D'souza and Poojary, 2018). Further, worker responsibility ceaselessly impacts and coordinates representative conduct with standard practices that adjust standards and qualities.

Overall, accomplishing a more significant work responsibility for food managers may induce better food-handling implementation. Arrangements, management frameworks, and strategies may not ensure food safety. Further, training and representative contribution may not induce good food-handling results, except if workers assume food controller responsibilities. Thus, administrators should distinguish between the drivers of representative responsibility. Food controllers with solid responsibility actualise safe food strategies and handling. Innovation and administration may not be satisfactory for upgrading sanitation execution. However, zeroing in on responsibility-based food handling and the execution framework prompts better food handling management.

Food safety behaviour has unique importance worldwide. Wang and Tsai (2019) acknowledged the relevance of various practices that affect food safety. Meanwhile, Flynn et al. (2019) stated that more than 5000 deaths and millions of foodborne illnesses occur every year. These conditions are crucial for understanding the concept of food safety and the measures that encourage proper food management through food safety behaviours. However, it is essential to understand various aspects, including definitions, legal measures, and ethical principles of achieving food safety.

2.5 Employees Trust

Communication between the company and employees is vital and engages employees' hearts and minds to suggest organisational improvements, encouraging constructive feedback (Curado and Vieira 2019). Acting upon such feedback bridges the gap between employees and managers; thus, employees trust their managers, and everyone feels unique and valued. Hence, employees feel satisfied that their effort contributes to a greater cause, benefitting the organisation. Each employee feels motivated and, ultimately, more engaged (Johnson, 2020).

Trust is essential in any organisation and contributes to increasing the job satisfaction and positive expectations of employees. Trust enhances levels of employee commitment, inducing an increase in income and profits. In a business or organisation, trust can manifest, for instance, between the employees and owners and the company and customers. When an organisation comprises teams led by managers and managers, effectiveness depends on gaining trust such that teams can reach goals and follow organisational norms and values (Vokić et al., 2020). Thus, trust between employees can motivate organisations to reach planned strategies, objectives, and goals. Therefore, employees trust their manager; they can do any tasks properly and positively (Hough et al., 2020).

Chams-Anturi et al. (2019) define trust as a source of competitive advantage and a fundamental factor in promoting capabilities required to tackle an organisation's fundamental challenges. It achieves long-term stability and builds positive relationships between employees, improving cooperation and open information exchanges, which encourage the expression of ideas to resolve problems, thus guaranteeing the continuity of activities reliably for a perceived assurance of agreeable expectations. Chams-Anturi et al. (2019) add that employees must expect managers to act fairly and ethically. Thus, trust within the organisation is necessary. It helps employees identify with their organisation, improve performance, and increase job satisfaction; it is a fundamental aspect of any business relationship, especially in decision-making.

Moreover, Tu et al. (2019) divided trust between employees into two elements: ethical leadership and employees' cross-team knowledge sharing; thus, trust between employees promotes teamwork to complete tasks. Faith in managerial intentions concerns ethical leadership, developed through cross-team collaboration to build close working relationships with dependable leaders who are cognitively trustworthy and focus on performance-related activities. Faith in peer intentions occurs by increasing care and concern among employees via cross-team collaboration; thus, employees are more willing to participate in knowledge sharing, reducing interpersonal risks as people feel free to express and discuss issues openly.

Holland et al. (2012) note that trust affects employees' attitudes and organisational contributions because it is the basis for quality relationships between employees and job stability. It is the confidence that one party would not exploit another's vulnerabilities. Thus, in advanced societies, trust is becoming increasingly important, given that trust develops employees' commitment means reciprocal trust increases organisational performance.

With a high level of employee satisfaction, employees are more likely to stay with their organization, resulting in lower staff turnover rates (Klimchak et al., 2020). Hence, trust enhances employees' commitment. Thus, employees have good intentions toward their organisations. Consequently, the organisation must understand how to develop trust among employees by maintaining reciprocal faith in intention and behaviour and developing the willingness to share knowledge and increasing the quality of working relationships. Thus, employees feel comfortable sharing their work and information, fostering stronger relationships between employees, hence ensuring that employees act within the organisation's best interests (Sarıkaya and Kara, 2020).

Sarıkaya and Kara (2020) stated that employees feel motivated when they are an object of trust. Thus, this process builds on trust and must be visible to employees to feel that their effort is mutual and rewarded. Employees with a high level of trust in their organisation can take actions that lie outside conventional or contractual obligations (Curado and Vieira, 2019). According to Dang and Chou (2019), trust is the faith employees place in managers and plays a key role in the relationship between employees and their supervisors, encouraging employees to behave in reciprocating ways and share their skills and experiences because they believe managers will help them achieve goals and professional aspirations and reward their contributions. Thus, the manager's trust acts as a protective cover that provides a sense of security in the workplace environment.

Sarıkaya and Kara (2020) argue that trust within an organisation is related to an employee being confident that other employees will not harm colleagues or the organisation and are motivated to put in effort without hesitation. Employee-manager trust is the foundation for a positive working environment, creating sharing behaviour and strengthening ties within the organisation. Therefore, an organisation with solid structures and stronger strategies is more effective in forming teams and crisis management and contributes to collaborative behaviour, organisational commitment, and

achieving goals. Hence, trust is an important element in effective working relationships. Trust in an organisation is the ability to meet positive expectations in addressing colleagues and creating many beneficial interpersonal relations that can be taken for granted. Further, faith in management increases if the organisation builds and keeps trust. It is a crucial factor in enhancing success. Identifying the factors that generate trust must be promoted to ensure organisational innovation and development. Meanwhile, a lack of trust in an organisation adversely affects creativity and results in poor decision-making, depleting the willingness to collaborate (Al-Rwajfeh, 2019).

According to the Food and Drug Administration goal to positively impact foodborne illness, food safety behaviours must be active in managerial control and food safety training to implement the HACCP principles programme and improve employee behaviour (Rowell et al., 2013). Mandatory food safety behaviour training and programmes may help correct behavioural mistakes to improve food safety behaviour (Her et al., 2017). However, many studies report that training employees on food safety practices are essential for changing behaviour. Therefore, most organisations develop food safety education for employees (Lin and Roberts, 2020). Building good habits in behaviour leads to regular behaviour based on good practices to control for the effects of past behaviour, thus reducing foodborne illnesses (Mullan et al., 2014). Her et al. (2017) studied food safety behaviours among consumers and employees, specifically food handling and related hand sanitisation. They assess food safety behaviours for several dependent variables, such as hand sanitisation after touching electronic devices, money, body parts, tables, toilets, and other unsanitary surfaces. They find that sanitisation practices are poor. Thus, training must increase food safety awareness.

Roberts et al. (2008) find an effect of food safety training on employee behaviour by examining the relationship between the dependent (employee post-training behaviour) and independent (e.g. knowledge) variables. They show that post-training knowledge positively influenced employees'

behaviours. Additionally, Moreaux et al. (2018) specify that training is widely recommended for improving food safety behaviour for food safety behaviours and leads to good attitudes and future good practices. If food safety behaviours hinge on significant knowledge of food safety, they will be connected with positive attitudes and behaviours toward handling food. In all the food making phases, such as preparation, processing, cooking, packaging, storage, transportation, distribution, servicing, buying, and food handling, conditions and measures are required to ensure food safety and suitability (Ali and Immanuel, 2017).

2.6 Employee Commitment

Employee commitment affects general office performance (Azeem and Akhtar, 2014). Steady administration practices (including authority, observing, correspondence, preparing, assessment, representative contribution, executives management, social exercises, and advancement) in food manufacturing offices (Griffith, 2013, Yiannas, 2008) should improve food-handling systems (Fatimah et al., 2014, Vashisht, 2018). They also help diminish potential food-handling issues and improve competitive production (Ahmad et al., 2020). Improving food controller responsibility may effectively execute food safety frameworks. Supervisors can impact representatives' conduct by establishing a persuasive working environment platform that adds to authoritative execution (Almatrooshi et al., 2016).

Taha et al. (2020a) assess the administration practices that impact food controller responsibility and examine whether worker responsibility intercedes the connection between broad practices in the execution of food-producing and food-handling systems. Further, Taha et al. (2020b) state that employees' commitment affects organisational performance. Businesses must be one in thought about food safety for employees by supporting their commitment via direct participation, actions,

and belief in food safety. Jaros (2007) specified organisational commitment as comprising three components: affective, continuance, and normative. From Griffith et al. (2010), commitment is one of the six safety culture indicators in an organisation and influences food safety performance behaviour. Thus, in order for an organization to be committed, it must adhere to three components: affective commitment, continuance commitment, and normative commitment. To illustrate, affective commitment is defined as desire, continuance commitment as a requirement for living, and normative commitment as an obligation toward an organization (Tan et al., 2019).

Employee organisational commitment has been an important subject explored in various research contributions. It is defined as an individual's attitude toward an organisation, especially regarding its goal, value belief and acceptance, and the desire to work harder (Luz et al., 2018). Via organisational commitment, employees are willing to stay as group members and continue to work, with a willingness and aspiration to achieve organisational goals.

Work satisfaction positively and significantly affect organisational commitment (Eliyana and Ma'arif, 2019). Rivkin et al. (2018) note that the flow experience at work may induce affective commitment, producing satisfaction and increasing organisational development. Fernández-Mesa et al. (2020) believe that organizational commitment is an attitude toward an organization, indicating a strong belief in and acceptance of the organization's goals and values, along with a willingness to exert significant effort for that organization. There is a strong desire to maintain membership within an organization, a psychological state that has direct implications for employees. Some beneficial practices implemented inside the organisation between managers and employees may help increase the exchange level between the two parties, strengthening organisational commitment and the satisfaction level (Yao et al., 2019). Organisational commitment is crucial in changing employees through attitudes and conditions and refers to an

employee's bond to the employing organisation. Organizational commitment is typically identified as having three components: affective, normative, and continuance (Lambert et al., 2019). Thus, in the context of the current study, commitment is the extent to which people engage in a recommended or prescribed food safety behaviour (Young et al., 2015).

2.7 Employees Attitude

In psychology, attitude is a measure of how favourable or unfavourable an individual's evaluation and evaluation of their behaviour is (Ajzen and Fishbein, 2000). When applied to an object or entity, employee attitude is defined as a mental and neural state of readiness influenced by experience and exerting a directive or dynamic influence on the individual's response to all related objects and situations. Consequently, attitude can be useful in predicting behaviour. The elements of attitude are emotional, informational, and behavioural (Sherman and Cohen, 2006). Similarly, Jain (2014) asserted that attitude, feelings, beliefs, and behavioural tendencies describe a group of feelings toward certain people, ideas, objects, or groups.

In the relevant literature, attitude is a 'hypothetical construct' variable measured indirectly, such as verbal expressions or overt behaviour (Hassan and Landani, 2018). It has three key components: (i) emotional, (ii) knowledge or cognitive, and (iii) behavioural components. In Chau (2018), attitudes represent safety culture in an organization as a psychological tendency to evaluate a particular entity with varying degrees of satisfaction or dissatisfaction and can be cognitive, behavioural, or affective. Robbins and Coulter (2017) define three factors: cognitive (what people believe), affective (liking or disliking), and behavioural (feelings and beliefs that influence behaviours). Employee attitudes influence firm performance and, thus, the organisation's vision, mission, and objectives.

Further, employees' attitudes affect organisational turnover (DiPietro et al., 2020). Thus, the organisation can employ indicators of business performance and environment to gauge how attitudes influence development because the internal and external factors affect employee attitudes, including cultural influences that contribute to employee capabilities, evaluated via five job areas: promotion, co-workers, pay, supervision, and work. The planned behaviour theory, which relates one's beliefs on behaviour, best describes the situation (Sani and Siow, 2014). Negative employee attitudes toward workplace diversity, for example, are multidimensional, leading to the rejection of many measures designed to encourage workplace diversity. Attitudes on the likelihood that behaviour produces the desired outcomes and subjective assessments of risks and benefits of that outcome can affect behavioural intention. Attitudes toward behaviour, subjective norms, and perceived behavioural restrictions shape purposeful behaviours (Lin and Roberts, 2020).

Predicted health behavioural intentions (e.g. exercise and diet) are where attitudes and intentions to behave in a certain manner are mediated by objectives rather than needs. The theory differentiates between three types of beliefs: behavioural, normative, and control (Anglim et al., 2019). As the main link between knowledge and practice, attitude can have an impact on food safety behaviour and practices of food-handling employees. Thus, employees with a positive attitude translate their knowledge into good practices (Al-Kandari et al., 2019).

2.8 Synthesis of Related Studies and Literature Gap

Like any other food preparation and production business, HBBs are susceptible to food safety measures and acceptable health standards (Limon, 2021, Eley, 1992). Employees or food handlers in this business are affected by different behavioural factors that hinder or encourage appropriate safety behaviours (Bou-Mitri et al., 2018, Zanin et al., 2017). However, the existing literature on food safety practices shows bias and inconsistency in adopting particular factors (see Table 2.1).

Table 2.1 presents a review of the prominent studies conducted to address the human capital aspects of food safety behaviour. In addition, it shows the gap in the current studies, which is reflected in the paucity of studies that consider the managerial variables that have been proven to affect the employees' behaviour and overlooked in the related literature on food safety behaviour of food handlers.

To illustrate, the review shows that among the recurring factors that appear consistently in related literature are attitudes (Nkhebenyane and Thekisoe, 2021, Adesokan and Raji, 2014, Ko, 2013, Sani and Siow, 2014), knowledge (Al-Shabib et al., 2017, da Cunha et al., 2014a, Soon et al., 2012), and training (da Cunha et al., 2014a, Seaman and Eves, 2006, Park et al., 2010). These factors are essential to determining how employees practice food safety. Most studies focus on the reciprocal relationship among these variables and how training can be translated into better attitudes and knowledge of food safety measures, such as food hygiene and foodborne illness avoidance (Zanin et al., 2017).

This conclusion accords with Zanin et al. (2017) that most training programmes have no actual impact on attitudes or knowledge, warranting the need to evaluate training effectiveness. That is, despite extensive training in food safety, some remain unalert and uncaring (Omar and Mohd Shahril, 2019, Zanin et al., 2017, Roberts and Lin, 2019).

Researchers examine training effectiveness by examining employee characteristics, pre-training requirements, trainers, and how the training is designed. However, other employee motivation factors may induce ineffective training (underperformance) and require further study (Omar and Mohd Shahril, 2019, Jubayer et al., 2020). Further, firms can analyse the results and effectiveness of the training programme more accurately if evaluated. Hence, the money spent on training will not be wasted. Moreover, the evaluation results can enhance future training programmes (Sahni,

2020). Even so, most studies focus on exploring the effect of training on employee behaviour, directly or indirectly, largely neglecting to measure the influence of training effectiveness on food safety practices (McFarland et al., 2019, Sahinidis and Bouris, 2008). From a managerial perspective, to determine the impact of training, multiple stages should be used to assess training (Sahni, 2020). Accordingly, this study measures learning effectiveness using the Kirkpatrick model to address the identified gaps in the literature on training evaluation.

Attitude has received considerable attention from scholars, and several studies have assessed its impact on food safety behaviour (Ernawati et al., 2021, Moreaux et al., 2018, Lestantyo et al., 2017, Abdul-Mutalib et al., 2012). However, Roberts and Lin (2019) advocate that researchers should focus on key processing elements to successfully change food safety behaviour and reinforce such elements during evaluations when designing food safety training. However, research on empirically based attitudinal assessments within the context of a communication intervention is lacking. Thus, this thesis furnishes a more comprehensive attitude multidimensional framework to bridge the gap via three components: cognitive, affective, and behavioural (Chau, 2018, Kark Smollan, 2006).

Similarly, the commitment variable has received little recognition in food safety behaviour studies (Taha et al., 2020a, Taha et al., 2020b, Hinsz and Nickell, 2015, Fotopoulos et al., 2009). For instance, Fotopoulos et al. (2009) find that the attributes of a company (PRP, equipment, and verification procedures) and its employees (availability, commitment, training, and will) are vital in implementing an effective food safety system. Taha et al. (2020a) note that knowledge and attitude about food safety were positively related to commitment to behaviours by food handlers. However, the direct effect of commitment on food safety behaviour is unexamined. Additionally, the variable is measured abstractly, overlooking the comprehensive managerial perspective to

adopt new approaches to commitment that incorporate three distinct but related forms: affective, continuance, and normative (Meyer and Allen, 1991, Jiang and Lavaysse, 2018). Thus, this thesis addressed the call to investigate the three commitment components from employees' perspectives and their direct influence on the food safety behaviour of HBBs employees.

During the past few years, there has been considerable interest in the trust within organisations and between employees and their managers (Leat and El-Kot, 2009, Xiong et al., 2016, Agarwal, 2013, Dalati et al., 2017). Essentially, an HBB is a small business where such a relationship is primarily informal. Thus, cooperative connections between firms are more likely to succeed in geographical environments where individuals have a culture of trust, particularly those of an informal type. The degree of interpersonal trust influences the ease and fluidity of sharing and transmitting knowledge (Tsai and Ghoshal, 1998). Interpersonal trust is a significant facilitator of knowledge sharing in interaction relationships in prior studies (Martínez-Román and Romero, 2013, Levin and Cross, 2004). When employees trust their companies, supervisors, and colleagues, uncertainty is reduced (Yen et al., 2014). Moreover, employees' trust in management or their organisation contributes significantly to safety culture (Umar, 2020).

Researchers find that workers' mistrust of management undermines the effectiveness of safety culture, according to Cox et al. (2006). Kines et al. (2011) regard trust in management or firms as an essential component in a safety climate evaluation tool. Despite significant attention by prior studies in the management and safety domain, there was no inclusion of trust as a deterministic factor in the food safety behaviour of food handlers. Thus, this study investigated the interpersonal trust of employees, whether toward their managers or peers and its effect on employees' behaviour regarding food safety.

2. 1: Related Constructs in Literature: developed by the researcher

Construct	Related studies
Attitude	(Zanin et al., 2017, Wilcock et al., 2004, Taha et al., 2020a, Taha et al., 2020b, Sihombing et al., 2018, Hinsz and Nickell, 2015, Soon et al., 2012, Ko, 2013, Sani and Siow, 2014, Jubayer et al., 2020, Soares et al., 2012, Lami et al., 2019, Abdul-Mutalib et al., 2012, Ncube et al., 2020, Ernawati et al., 2021, Adesokan and Raji, 2014, Tegegne and Phyo, 2017, Rebouças et al., 2017, Moreaux et al., 2018)
Training and Education	(Zanin et al., 2017, Webb and Morancie, 2015, Seaman and Eves, 2006, Akabanda et al., 2017, Pilling et al., 2008, Sihombing et al., 2018, Soon et al., 2012, Harris et al., 2021, Fotopoulos et al., 2009, Sahinidis and Bouris, 2008, Jubayer et al., 2020, McFarland et al., 2019, Yu et al., 2019, Malavi et al., 2021, Ncube et al., 2020, Lestantyo et al., 2017, Moreaux et al., 2018, Sanlïer et al., 2020, Park et al., 2010, Al-Kandari et al., 2019, Salazar et al., 2005)
Commitment	(Macheka et al., 2013, Sahinidis and Bouris, 2008, Fotopoulos et al., 2009, Hinsz and Nickell, 2015, Taha et al., 2020a, Taha et al., 2020b)
Training effectiveness	(Sahinidis and Bouris, 2008, McFarland et al., 2019, Al-Kandari et al., 2019)
Employees Trust	(Liu et al., 2020, Mosher, 2013)

Therefore, food safety behaviour has garnered many practitioners and scholarly attention. However, prior relevant studies show a bias when exploring factors that may impact food handlers' behaviour by focusing on specific variables, overlooking other variables despite their equal importance in determining their impact on employees' behaviour within their organisations. Consequently, this study bridges the existing gap and builds a new framework that fully includes these variables.

2.9 Research Framework

The research framework (Figure 2.1) is based on the extensive literature review and argued hypotheses development. The framework incorporates new variables and factors, such as employee commitment and trust, expanding prior study propositions. Moreover, attitude is probed in-depth from the managerial perspective, rarely adopted in prior studies. Training effectiveness was also included in the framework, following the Kirkpatrick model, which is favourably adopted in management and food safety fields but insufficiently covered. Figure 2.1 shows the relationships between the variables and factors proposed in this thesis.

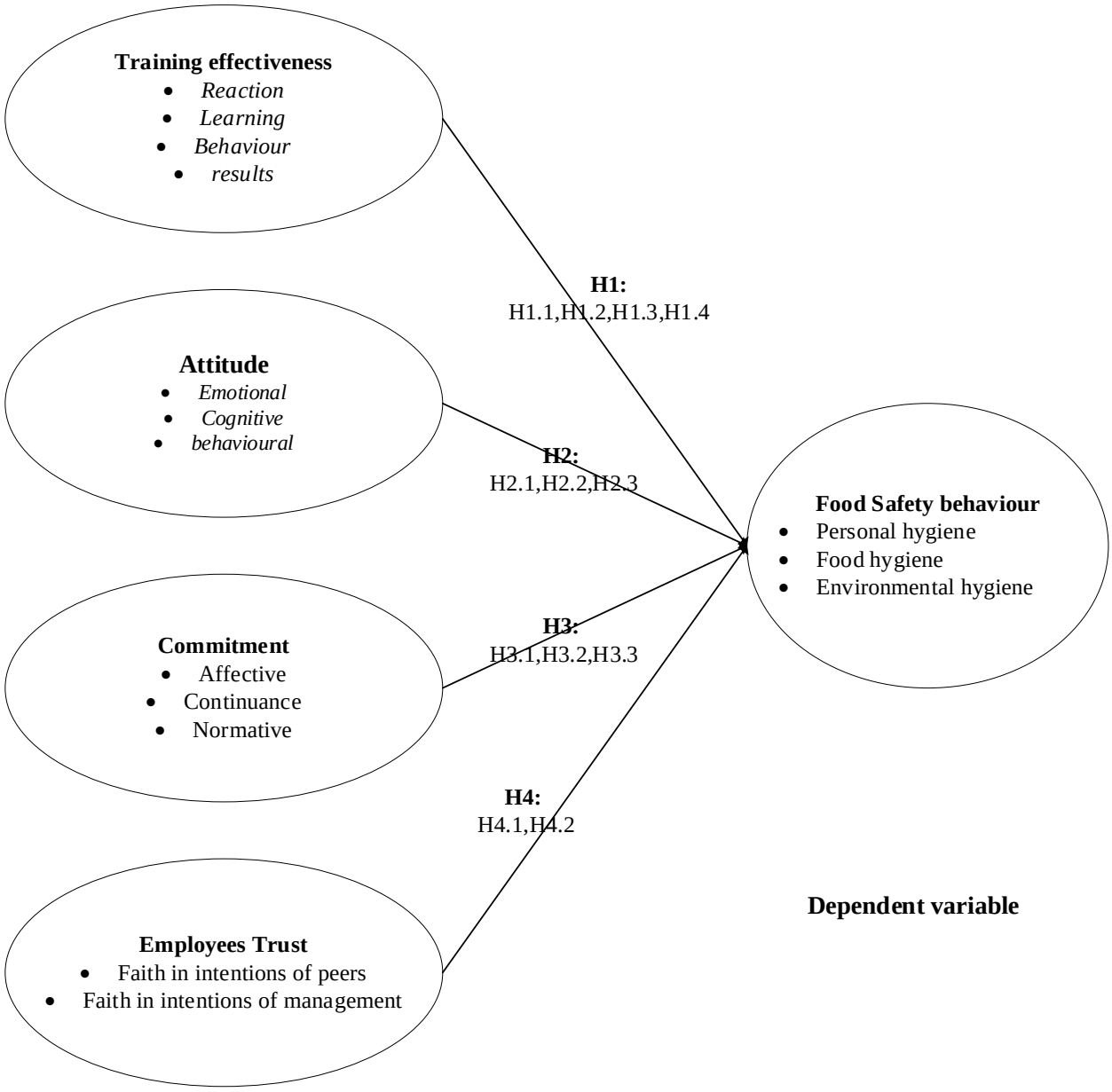


Figure 2.1. Research framework

2.10 Hypotheses Development

This section develops and argues for the logical research hypotheses.

2.10.1 Training Effectiveness Impact on Food Safety Behaviour

Training effectiveness evaluates a training programme by determining the changes in staff behaviour and changes needed in the organisational structure (Farjad, 2012). Companies must focus on measuring the effectiveness of learning programmes to provide information and feedback on the adequacy of implemented training programmes for a gap analysis to determine the shortcomings. Kodwani and Prashar (2019) recommend enhancing training effectiveness by considering different aspects, such as training climate, training evaluation, and degree of training. They concluded that all variables could influence trainees; thus, trainees must know all aspects of the training, including policies, content length and training time, and post-training evaluation. Yahya and Norsiah (2007) find that the training effectiveness measure can be evaluated by improving employees' skills, knowledge, and behaviour. It indicates how the programme can meet corporate goals and objectives. As per Bennet (1982), training effectiveness criteria define the effectiveness of goal settings and planning, decision-making, communication, job knowledge, delegation, and relationship.

It is enhanced when trainees are aware of training objectives and implement knowledge in the workplace (Shahrooz, .2012). Arthur et al. (2003) note that the criteria for measuring training effectiveness depend on knowledge from the training (Knowledge Criteria), how knowledge acquisition changes with job performance (behavioural criteria), and course evaluation (results criteria), considered the primary means of evaluating the effectiveness of training.

Despite many evaluation and effectiveness methods for training, the correct method must be used. Therefore, the Kirkpatrick evaluation model is useful. This model defines the modules in three

commitment levels examining what trainees felt about the knowledge level gained, how behaviour contributes to on-the-job performance, and results on organisational effects or environment of the business (Chrysafiadi and Virvou 2012). The Kirkpatrick model was first created in 1959 by Donald Kirkpatrick. He was a former Professor Emeritus at the University of Wisconsin. Donald James and his wife published a book called *Four Levels of Training Evaluation*, improving Kirkpatrick's model. The four levels include reaction, learning, behaviour, and results. The levels can be used to train people in HBBs to maintain hygiene and food safety (Bretz, 2019). HBBs include firms that prepare food for sale to people from home kitchens and home-based childcare. Thus, the role of governments (e.g. ministries of health and food control authorities) expands to protect consumers by improving the safety status of the food industry and increasing food safety regulations, policies, and initiatives (Idriss, 2019). A comprehensive food safety training programme covers personal, equipment, and food hygiene, cross-contamination prevention, food temperature practices, foodborne illness prevention, and other preventive methods (Sanlïer et al., 2020).

Studies have shown that traditional food safety training programmes and strategies promote hand hygiene awareness (Soon et al., 2012, Galgamuwa et al., 2016, Malavi et al., 2021). Few studies find that training directly impacts employee behaviours (Moreaux et al., 2018). However, most suggest that training effectiveness and its dimensions significantly affect food safety behaviour (Malavi et al., 2021, Zanin et al., 2017). Apparently, such training should result in behavioural changes (Wandolo et al., 2018), while training effectiveness positively changes behaviour (Salisu, 2020, Al-Shabib et al., 2016). Moreover, to create and deliver successful foodservice education and training programmes, learning critical food safety behaviours in foodservice operations is vital (Deale, 2010, Ovca et al., 2014), and employers must provide relevant and meaningful training

(reaction) to employees (Salisu, 2020). Further, training can be effective if people apply what they learn after receiving training (behaviour). It also identifies areas for assistance. During the training process, trainees in an auto-retail business can determine whether their hygiene has improved. Arguably, training is not beneficial if food handling does not change (Tegegne and Phyo, 2017). Eventually, the factors hinge on actions from employees in applying knowledge such that proof of effective food safety instruction or post-training behaviour changes (result) may be documented (Lin, 2018). Hence, this study proposes the following hypothesis:

H1: *Training effectiveness positively affects food safety behaviour in HBBs in the UAE.*

H1.1: *Reaction affects food safety behaviour in HBBs in the UAE.*

H1.2: *Learning affects food safety behaviour in HBBs in the UAE.*

H1.3: *Behaviour affects food safety behaviour in HBBs in the UAE.*

H1.4: *Results affects food safety behaviour in HBBs in the UAE.*

2.10.2 Employee Attitude Impact on Food Safety Behaviour

Employee attitude can be defined as a state of mental and neural readiness developed through experience that exerts a dynamic or directive influence on individual responses to objects and situations with which it is associated (Andrew, 2017). Therefore, it is possible to predict behaviour by attitude (Faour-Klingbeil et al., 2015). A similar definition of attitude is described by Jain (2014), who believes attitude is a combination of feelings, beliefs, and tendency to act towards a specific person, idea, object or group.

According to Zikmund (2003), attitude is a 'hypothetical constructs' variable that can be measured indirectly via verbal expressions or overt behaviour. It has three key components: (i) emotional, (ii) knowledge or cognitive, and (iii) behavioural components. Attitudes characterise safety culture in an organisation, defined as a psychological tendency expressed by assessing a particular entity

with a degree of satisfaction and cognitive, behavioural, and affective features (Yu et al., 2019). Thus, Haizam (2014) note three factors: cognitive, affective, and behavioural. Employee attitudes can influence organisational performance to achieve organisational vision, mission, and objectives (Lee et al., 2013).

Further, employee attitudes can affect the outcomes of an organisation via turnover or performance (Sahinidis and Bouris, 2008). Accordingly, organisations employ business performance and work environment indicators and how they influence development because internal and external factors affect the attitude of employees, including cultural influences that add to employee capabilities, evaluated via five job areas: promotion, co-workers, pay, supervision, and work. The theory of planned behaviour best describes the situation by linking beliefs and behaviour. For example, negative employee attitudes toward workplace diversity are multifaceted, inducing the rejection of many workplace diversity initiatives. Behavioural intention is affected by the attitude that work behaviour could have expected results via a subjective risk-benefit evaluation. The attitude toward behaviour, subjective norms, and perceived behavioural controls shape intentional behaviours.

Positive employee attitude changes are vital to food safety and organisational goals (Ko and Kang, 2019). A key factor behind the failure of change initiatives is employee resistance to change, closely related to developing a negative attitude towards change (Andrew, 2017). Employee attitudes toward change can influence morale, productivity, and turnover intentions (Vakola and Nikolaou, 2005). Griffith et al. (2010) contend that the more senior management and employee attitudes on food safety align, the more likely employees are to adopt positive behaviour attitudes, such as 'handling food reasonably'. Similarly, Lee et al. (2013) state that food safety practices positively influences employee attitudes. In this context, people’s food safety behaviour may be affected by their cognitive responses to attitude (Redmond and Griffith, 2003, Pokharel et al.,

2017). Further, emotion and behavioural tendencies have a similar impact on food safety behaviour (Lee et al., 2013, Jin et al., 2020).

Thus, this study examined employee attitudes toward food safety behaviour in HBBs, as per the following hypotheses.

***H2**. Employee attitude positive affects food safety behaviour in HBBs in the UAE.*

***H2.1:** Emotion affects food safety behaviour in HBBs in the UAE.*

***H2.2:** Cognition affects food safety behaviour in HBBs in the UAE.*

***H2.3:** Behaviour affects food safety behaviour in HBBs in the UAE.*

2.10.3 Employee Commitment Impact on Food Safety Behaviour

In order for organizations to build and implement their strategies, they need competent and committed employees because commitment directs employee behaviour in the planned direction (Oyewobi et al., 2012). Employees with high commitment levels strongly believe in accepting organisational goals and values (Sharma and Dhar, 2016, Taha et al., 2020a).

Moreover, employee commitment affects general office performance (Azeem and Akhtar, 2014). Sound management practices (e.g. authority, observing, correspondence, preparing, assessment, representative contribution, executives management, social exercises, and advancement) in food manufacturing offices (Griffith, 2014, Yiannas, 2008) improve food-handling systems (Fatimah, Strohbehn, and Arendt, 2014; Vashisht, 2018). They also help diminish potential food-handling issues and improve competitive production (Kafetzopoulos, Gotzamani, and Psomas). 2014). Employee commitment affects the level of organisational performance. Thus, businesses must be unified in thinking about food safety for employees by supporting commitment via direct participation, actions, and belief in food safety (Taha et al., 2020b).

In a study by Taha et al. (2020), they discovered that employee commitment influences employee behaviour to implement safe food procedures to improve organizational food safety results. According to previous findings, organizational commitment benefits employees and organizational performance (Hinsz and Nickell, 2015, Lee et al., 2013, Rowell et al., 2013, de Andrade et al., 2020).

Although several studies evaluate the association between food safety and employee commitment (Taha et al., 2020a, Zanin et al., 2017), few investigate food safety and employee commitment components associated with behaviour-based businesses**.** Meyer and Allen (1997) suggest that commitment can be formulated in affective, continuance, and normative commitments (Hadi and Tentama, 2020). Meyer et al. (1993) show that affective commitment manifests in attachment, involvement, familiarity, identification, and consideration of work and peers. de Andrade et al. (2020) find that affective commitment of low-risk restaurant food handlers regards food safety behaviour. Normative commitment means that employees feel obliged to continue to work (Chau, 2018, Griffith et al., 2010). A normative organisational commitment produces a set of values that guide a person's actions based on the culture of the organisation and typical behaviour standards (de Andrade et al., 2020). Thus, Sow et al. (2016) report that normative commitment significantly affects organisational citizenship behaviour, though weaker than affective commitment. However, de Andrade et al. (2020) assert that commitment in all dimensions has the same impact on handlers' food safety and hygiene practices.

Eventually, continuance commitment occurs when employees weigh the advantages and disadvantages of leaving their organisation (Hadi and Tentama, 2020). An example of continuance commitment is when workers feel they must continue working at their company because their fringe benefits and salary will not improve even if they change to another firm (Averin, 2020).

Continuance commitment may help HBBs grow because most are small-scale businesses that do not have adequate funds to pay high salaries and wages to employees. Thus, the continuance commitment of employees helps facilitate the growth of HBBs. For instance, given continuance commitment, HBBs will grow and expand in the future (Kane and Clark, 2019).

Based on the above discussion, the study proposes the following hypotheses.

H3. *Employee commitment positively affects food safety behaviour in HBBs.*

H3.1 *Affective commitment positively affects food safety behaviour in UAE HBBs.*

H3.2 *Normative commitment positively affects food safety behaviour in UAE HBBs.*

H3.3 *Continuance commitment positively affects food safety behaviour in UAE HBBs.*

2.10.4 Employee Trust Impact on Food Safety Behaviour

Company-employee communication is vital in the workplace. It engages employees' hearts and minds to suggest organisational improvements and provide constructive feedback (Curado and Vieira, 2019). Acting on employee feedback bridges the gap between employees and managers, where employees trust their managers, and everyone feels unique and valued in the organisation. Consequently, employees feel comfortable contributing to a bigger picture, thereby benefitting the organisation. Moreover, each employee is motivated and more engaged (Johnson, 2020).

Trust is vital in any organisation and contributes to increasing the job satisfaction and positive expectations of employees (Leat and El-Kot, 2009). It enhances employee commitment levels, increasing organisational income and profits (Bussing, 2002). The areas of trust in organisations and businesses are diverse, such as employee-manager and organisation-customer trust. When an organisation comprises teams led by managers, the effectiveness depends on gaining the team trust to reach goals and follow organisational norms and values (Vokić et al., 2020). Thus, trust between

employees can motivate organisations to reach planned strategies, objectives, and goals. Hence, when employees trust managers, they perform tasks appropriately (Hough et al., 2020).

In prior studies, trust in supervisors has mainly been examined from the perspective of its direct impact on organizational outcomes. According to Xiong et al. (2016), employees' trust in supervisors positively affects their commitment to the organization. According to Yang and Mossholder (2010), employees' affective commitment is positively influenced by their trust in supervisors. In HBBs, however, few studies have explored the relationship between employees' trust and food safety, which limits the generalizability of trust theory.

Moreover, the literature identifies the need for employee trust if employees engage fully with food hygiene (Mahto et al., 2020; Moreaux et al., 2018). Developing an attachment between employees and businesses to engage employees' creativity in maintaining the best food-handling behaviour in HBBs is necessary. Thus, adequate training knowledge induces poor workplace attitudes, affecting employee trust in food safety behaviour in HBBs (Marx et al., 2021).

Hence, employee trust can be determined via two dimensions: faith and confidence in managerial intentions and faith in peer intentions (Leat and El-Kot, 2009, Lee et al., 2019, Agarwal, 2013). In general, few studies examine the effects of trust in employees' safety participation behaviour (Liu et al., 2020). However, an employee's perception of safety may be compromised by a lack of trust in managers and supervisors, negatively impacting their decisions as per Zohar and Luria (2005) theory. Moreover, Kath et al. (2010) demonstrated a positive relationship between trust and safety climate. It has been found that safety climate and trust are more closely linked in workgroups that are more focused on safety.

Accordingly, the study proposes the following hypotheses:

H4. *Employee trust positively affects food safety behaviour in HBBs in the UAE.*

H4.1 *Faith in managerial intentions positive affects food safety behaviour in HBBs in the UAE.*

H4.2 *Faith in peer intentions positively affects food safety behaviour in HBBs in the UAE.*

2.11 Summary

This chapter reviewed the literature in-depth and identified four variables that affect food safety behaviour: attitude, commitment, trust, and training effectiveness. The components of food safety practices provide a detailed picture of the research objective. The chapter also covered the relevant terms in the literature and how prior studies address them, whether technically or from behavioural perspectives. Moreover, the hypothesis development shows the rigour of the research framework. Ultimately, the chapter synthesises the relevant literature to illustrate the gaps therein, justifying the relevance of this study.

Chapter Three: Methodology

This chapter explains a research plan and describes the procedures to be employed in this study. There are three procedures involved: sampling, data collection, and analysis. Ultimately, the methods used to conduct the study would be able to accomplish the stated research objectives, address research questions, and finally test the research hypotheses. Prior to the above, the study needs to explain the procedures for developing the measuring for every construct in the model. This is followed by its validation process to ensure its validity and reliability.

3.1 Research Philosophy

Generally, a research philosophy is the collection of beliefs, values, or assumptions that guide the formulation of research strategies and methods. It is important to note that assumptions impact the approaches researchers use to complete their studies and evaluate the results. Researchers often make assumptions around understanding and evaluating study topics to support their interpretation of results. In many cases, researchers make intentional or accidental assumptions about the methodology, and the study design determines the study's nature. To evaluate the effects of their research, researchers must identify the assumptions that underlie their study. In the social sciences, researchers can also evaluate diverse knowledge on subjects through ontological, epistemological, and positivistic assumptions.

As well, researchers can incorporate conscious assessment into their studies through axiological assumptions and values. Thus, individuals develop their projects from interpretations and conclusions that hinge on values, intuition, and bias (Bradley, 1993). Despite this, the construction of axiological assumptions is excluded from abstract philosophical sections since contradictory opinions are induced in a study. Data valuation is part of philosophical reasoning, so assumptions

thwart the thesis or concepts laid out initially. In order to carry out the research, researchers must internalise the assumptions.

In addition, the ontological perspective involves creating different viewpoints that define pragmatism and realism in order to describe facts or events. Researchers use this perspective to establish values that are specific to a group of individuals and to shape societal norms. As part of its ontological dimension, positivism also refers to the pursuit of knowledge through practical means and experimentation (Moon et al., 2019). As a consequence, human constructs are a component of the research process, as outcomes need to align with people's reality when observing occurrences. As a result, researchers can develop hypothetical constructs based on the relationships as mentioned earlier between realities and scientific facts. As a result, the parameters identified to test the hypothesis are often used to further the theory or research. Experimental and quantitative research can also contribute to positivity by verifying variables and updating theories cited in the research.

Researchers often develop their beliefs and values from an objective perspective rather than a subjective one, which is why they match objective knowledge. Positive dimensions are permanent regardless of the perspective used since truth can be assessed in multiple ways. By utilizing positivism, one can judge knowledge features based on truth rather than experiment (Ryan, 2018). Phenomenalism, for instance, focuses on science-based sources of knowledge. In contrast, objectivity relies on facts to support scientific law. Conversely, reductivism involves the generation of laws by proving hypotheses. According to the epistemological dimension, exclusivity refers to objects or people living in an environment where their existence is distinct from the rest. The results of experiments demonstrate positivism, which rationalises observations based on laws.

As with antipositivism, interpretivism advocates cultivating the truth in a personal space through cultural or historical analysis. Despite its anthropological origins, interpretivism is a subjective approach that derives knowledge and truth from a person's perception. By reflecting on and assessing their own experiences, researchers can improve their philosophical understanding. Researchers cannot separate themselves from the values and hypotheses they develop during their studies as they collect data and analyze results. As part of the research process, personal influence is incorporated in developing arguments and connecting observations to the events surrounding individuals (Alias & Hanapi, 2017). Interpretivism counteracts rationalism by suggesting that truth and individual perspectives are not separate from natural phenomena and science. Thus, people's convictions and natural occurrences produce truth and shape perspectives around the world. While the approach is entirely subjective, the relevance extended to the phenomena recorded proves the truth and reality of events. Generally speaking, interpretivism offers constructive truths that can be reinforced by using a phenomenal approach that ties events to researchers' perspectives.

In addition, the intentions that researchers cultivate or develop become the framework for constructing truth. Accordingly, interpretivism connects the study variables with the researchers' life experiences. A subjective understanding of a research concept is formed by the relationship between the perspective and real events. In this sense, the epistemological relationship of the study is determined by the way in which the study concepts are justified (Alias and Hanapi, 2017). Ethics and empiricism are two major approaches to examining perspectives of reality and determining general or particular conclusions. The emic approach is characterized by specific findings that can be obtained via an ethical strategy, while data generalization is possible based on the social sciences studied.

Scientific realism relies on the independence of world phenomena and a researcher's personal convictions that can be channelled to suit a particular research project. Despite scientific realism being attributed to the real world, there is a connection to personal reasoning. By integrating phenomena and human perception (Moon et al., 2019), researchers can better understand universal concepts. In the twentieth century, social sciences were based on the realism and experimentalism concept underpinning philosophical reason. The scientific realism of the present day incorporates diverse perspectives on the human world that science experiments can uncover. Therefore, there has been a shift from positivism to scientific realism, which has garnered much philosophical attention. As a result, scientific realism has different dimensions, such as experiential, critical, and subtle realism, emphasising the subjective nature of philosophical reasoning.

It is important to note that realism in science maintains that human perception cannot be satisfied by observing nature; rather, people must affirm through interpretation. Thus, there are no alternative perspectives to this perspective, so knowledge remains unfulfilled. Thus, the realist view is inadequate for understanding the physical world and interpreting its dimensions (Žukauskas et al., 2018). As a result, the experience cannot be understood by relying on realism as the perception of reality for understanding. For instance, the epistemological concept establishes that human understanding is key in assessing world views. Conversely, from an ontological lens, world phenomena exist independently of human perception. Therefore, comparing ontology and epistemological constructivism, humans can understand world events through a consensual view.

Therefore, philosophers' reasoning is shaped by human-world ontological relations, epistemology, and positivist dimensions. In view of the diversity of world experiences and the connections that humans can have, researchers can define their approaches when conducting studies (Alias and Hanapi, 2017). Researchers can establish hypotheses using the ontological view that highlights

independent variables in studies. After testing the hypothesis, researchers can modify the methodology to ascertain the findings to be collected. Additionally, epistemology describes phenomena that are influenced by human perception, often based on variables (Moon et al., 2019). The epistemological view is therefore often adopted by researchers when designing objective studies that can be verified via experimentation. This approach eliminates bias in the study because human perception is separated from the research process, and experiments conducted are universal for determining the variables.

Finally, positivism explains the alignment between experiments and suggested truths in research. For example, methodological approaches can be modified to assess truth based on experiments carried out during the study. Essentially, the research seeks to affirm truth through scientific findings derived from experiments that provide a realistic connection between human understanding and phenomena. Specifically, dependent and independent variables can be approved by using deductive philosophy-based hypothesis testing. In this way, researchers can choose approaches to gauge the relationship between propositions and real-life experiences. As the philosophical approach approves or disapproves the research hypotheses, the findings ultimately inform the study conclusion.

3.2 Research Approach

It is essential to understand how to find theories and conclusions in scientific data (i.e. how to apply reasoning to the data to get results) after choosing a research philosophy. A researcher uses inductive and deductive reasoning to determine a situation's characteristics (Ryan, 2018) Figure (3.3). Inductive reasoning starts with observation, experimentation and measurements, generalization, and finding patterns in data; a hypothesis is then developed (Bryman, 2008), and

repeated measurements and observations are made until the results describe a generalized or broad situation. In inductive research, data comes before theory and observable phenomena.

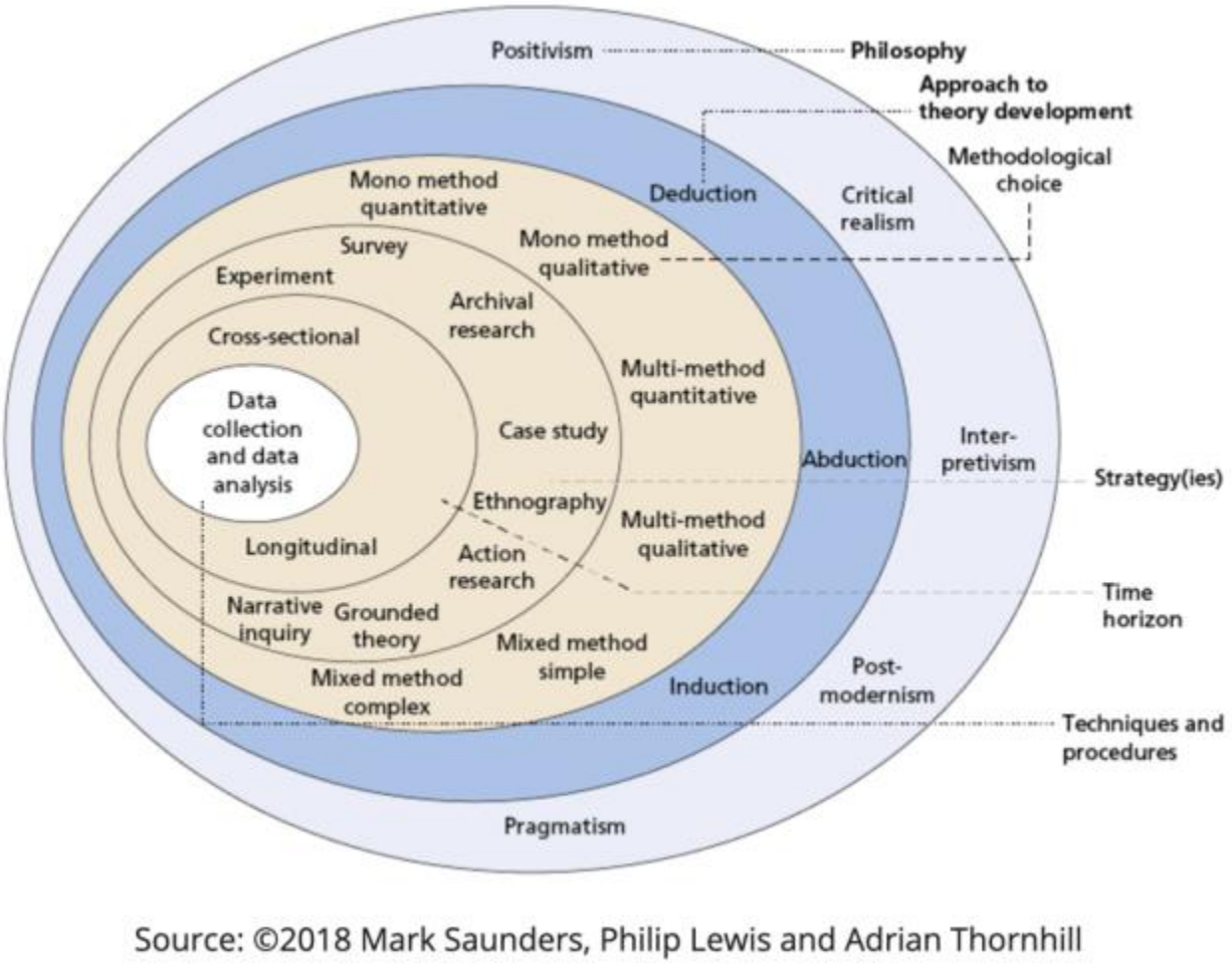
The findings of observations and qualitative data collection sessions are used to create conceptual models of the proposed relationships between research variables. It is, however, difficult to separate an inductive researcher's values, beliefs, and perspectives from their theories when they are developing them since their values, beliefs, and perspectives are what give them a lens through which to process and interpret their data. As a result, inductive research cannot be objective. By contrast, deductive reasoning starts with a theory that is based on existing knowledge. Using highly structured research methods, it conducts rigorous tests based on hypotheses. The researcher then locates the theory, makes predictions based on it, and tests the hypotheses with experiments or instruments.

In deductive research, findings and conclusions are derived from established theories in a logical order. Based on the researcher's philosophical paradigm, this study uses deductive reasoning. First, the researcher gathers evidence on the relationship between the variables. It then develops hypotheses about the relationships, which are validated with quantitative measurements. The main goal of the researcher is to fill in the knowledge gaps on the subject. In addition, this approach generalizes results to the sample population, as it attempts to contribute to the theoretical and practical dimensions of the observed population behaviour and experiment-based evidence. Hence, the study finding is more than just an academic item; it represents a relationship whose result would constitute the subject's theoretical dimension.

3.3 Research Design

Research design describes the process and methodological path to achieve the research objective. Using broad assumptions, research philosophy, parameters, and approaches, researchers determine

how they will answer a research question. This includes choosing which research procedures and approaches to use. A detailed description of the data collection and analysis methods should be provided. A decision should be influenced by the subject's nature, the researcher's experience, and the study population (Creswell and Poth, 2016). Methodological choice, research strategy, and time horizon are the three main forms of research design. Figure 3.1 illustrates the layers of the research model.



Source: ©2018 Mark Saunders, Philip Lewis and Adrian Thornhill

Figure 3.1 Research model layers

3.3.1 Methodological Choice

In terms of research design, there are three options: qualitative, quantitative, and mixed methods. Philosophical thesis and underlying assumptions shape a researcher's approach and choice of

research design. However, the method that is chosen should be able to answer the research question. Generally, qualitative and quantitative research differ in their contextual core. A qualitative (quantitative) method usually relies on words (numbers) or uses questions and hypotheses with closed-ended (open-ended) answers. Considering the differences between quantitative and qualitative methods in the context of the underlying philosophical assumptions and research strategies, such as quantitative experiments or qualitative case studies, provides a comprehensive explanation of the differences.

Data collection might also depend on the methods used for executing the strategies, such as using quantitative instruments versus ethnographic methods (e.g. observing a setting) (Creswell, 2008). The purpose of this study is to understand the relationship between food safety behaviour in HBBs for food handlers and various items, including training, effectiveness, attitude, commitment, and employee trust. To avoid conclusions based on respondents' biases, the research utilizes well-structured and clear research questions for its target population. Nevertheless, it was important to incorporate a theoretical framework to better understand the relationship. Thus, the study developed a theoretical framework describing the relationship between its variables and established its strategy by utilizing relevant theories. Based on the study's independent variables, the study assessed their interrelationship with the dependent variable: food safety behaviour in home-based food-handling businesses. Thus, the study seeks to determine the following from the research questions:

- What is the effect of training effectiveness on food safety behaviour?
- What is the effect of employee attitudes on food safety behaviour for food handlers?
- What is the effect of employee commitment on food safety behaviour for food handlers?

- What is the effect of employee trust in food safety behaviour for food handlers?

Since the study used well-structured questions to examine, understand, and interpret the relationships between variables while adhering to a positivist philosophical perspective, the best methodological choice is a quantitative one within correlation parameters, in line with the study's philosophical approach. Hence, this study belongs to the category of descriptive studies that test, understand, and explain the relationships between variables. It thus answers the question of 'What is the effect' in the interrelationship between the variables. It is impossible to reach such goals through other approaches, where descriptive studies aim to gather precise data and information about phenomena. Furthermore, such studies, which are largely unstructured, use open-ended questions to collect useful data pertaining to crucial social science topics.

3.3.2 Research Strategy

The research strategy describes a well-structured approach to answering research questions. Research philosophy, underlying assumptions, and methodology intersect when a researcher collects, analyzes, and interprets data. The process of research design entails qualitative, quantitative, and mixed methods. In social science research, experiment-based studies and surveys are generally used to gain insight into an issue under investigation (Creswell, 2008). In this study, variable relationships were assessed using a questionnaire. Unlike empirical research, which is more fixed, action-oriented social science studies are not constrained by specific boundaries due to their subjective nature. In light of this, the general assumption is that objective findings and generalizability are not beyond limits. In spite of the researchers' concerns, they believe the results are fair and that they offer a broad illustration of the impact of effective training, attitudes, commitment, and employee trust on food safety behaviour in HBBs because interviews and questionnaires are more readily accessible for gaining deeper insight, especially in a social science

study (Creswell, 2008). Although other methods may produce more generalizable findings, responses may not be as reflective and insightful as interviews. In addition, survey strategies provide a numeric, measurable, and quantitative depiction of a population's attitudes, beliefs, and values if researchers use a reasonable representative sample of the population.

3.3.3 Time Horizon

Cross-sectional and longitudinal approaches can be used to collect data. In a longitudinal study, data are collected over a prolonged period, making it easier to track developments and changes in phenomena or items under observation over time. In contrast, cross-sectional analysis refers to observing a specific activity over time. The goal of a researcher might be to describe a phenomenon or to explain the relationships between variables or parameters in contrasting contexts. However, despite the cross-sectional survey's prominence in the social sciences, experts have often questioned its validity because of its bias, vulnerability, and causal insight. Confounding variables in surveys may not be central to the research objective, but they may affect the dependent variable variance (Rindfleisch et al., 2008). In spite of the fact that most researchers see cross-sectional research as the most effective way of investigating social science activities, it has been criticized for causing respondents to become fatigued, increasing non-response bias. Additionally, given the dynamic nature of time separations in data collection, other factors could intervene in cross-sectional studies, influencing the results by concealing or establishing non-existent relationships between variables.

In order to minimize bias risks and achieve objectives, this study uses a survey strategy. First, it employs multiple respondent strategies. The researcher collected data from different respondents for both independent and dependent variables. In the HBB environment, consumers and employees may be targeted together. Additionally, because employees gave independent, experience-based

answers regarding food safety behaviour, the strategy was effective at creating a relationship. The descriptive analysis was informed by employee demographics. In this study, researchers collected data from respondents in order to understand, analyze, and explain the relationship between a number of independent variables, including training effectiveness, attitude, commitment, and employee trust on the dependent variable, food safety behaviours.

Additionally, the researcher collected data via surveys. To meet the study objectives, cross-sectional data were collected. Furthermore, given that food handlers are dynamic, there is, arguably, a minimal natural order within cause-and-effect dimensions, particularly in light of the subjective nature of respondents' characteristics. To gather data, the researcher determined that a cross-sectional design would be most effective.

3.4 Population and Sample of the Study

In a research context, a literature review of the topic is provided and serves as a foundation for the conceptual framework. To understand the value of practices and procedures undertaken in the UAE to ensure food safety, this study examines food safety behaviour in HBBs. In addition, it provides valuable insight into training effectiveness, attitudes, commitments, and employee trust as it relates to food safety behaviour. Eventually, it examines food handlers' knowledge of food safety and the current UAE rules and regulations.

Populations are groups of people who exhibit similar features which can be used by researchers to study a particular phenomenon. A large number of HBBs provide food services to the public, and businesses hire hundreds of thousands of people (Al Khaja et al., 2015). Its target population is handlers of food in HBBs (small- to medium-sized businesses) in the UAE, the majority of whom are from urban and rural areas. According to Brown and Tucker (2020), an unknown population cannot be quantified easily using known objects. As a result, Harrison et al. (2020) suggested using

some measurement tools to determine sample size. Therefore, all those handling food at their homes were the units of analysis, whether individuals, groups or organizations.

The aim of research sampling is to represent the overall demographic size of the population by using a proportion of the population. Due to limited resources and time, it is essential that researchers collect data from relevant samples rather than the entire population. Through sampling, they can minimize the collected data to a manageable size for efficient analysis. However, a study must choose a population sample that reflects the characteristics under study, which greatly influences the generalizability of findings. Therefore, samples should be meaningful and justified. While it is possible to survey the entire demographic population under analysis, it may be complex in some instances, especially if the population is large. However, researchers must admit that a complete census provides more insight than a representative sample (Saunders et al., 2016). However, given the large population of this study, sampling was necessary in order to acquire manageable data that could be generalized.

After identifying the unknown target population, a sample size selection must be conducted to obtain manageable and representative data of the target population (Saunders et al., 2016). A probability sample is the most suitable method for defining an unknown population (Harrison et al., 2020). Using a simple random sampling technique, 300 respondents were surveyed to determine food safety behaviour. Of the 300, 280 responded (e.g., approximately 93% response rate). Following the purification of the data (missing values), 268 responses were viable for empirically estimating the relationship between the variables. Therefore, the data of 268 employees were deemed adequate for empirical research. HBBs in the UAE that provides food services to people are included in these respondents. The sample is representative of the target audience. In the 268 respondents, 183 (86) employees were from rural (urban) areas.

3.4.1 Sampling Frame and Analysis Unit (Plan)

By defining the target population within the narrowest context, you can identify and select the most representative respondents. A sampling procedure was initiated by identifying the relevant people, food handlers, and owners of HBBs participating in the training course. They received training from different hospitality institutes. Accordingly, the study developed a sample frame and a comprehensive list of all cases in the target population. In addition to random sampling, secondary data was also collected from customers.

3.4.2 Sampling Technique

Researchers in social science can use both probability and non-probability sampling techniques. The principal difference between the approaches is the probability of selecting an item from a target population. Choosing each employee of the food handler population in a non-probability sample makes it nearly impossible to make statistical inferences that can be generalised to the entire population thereby hindering the achievement of research objectives (Lehdonvirta et al., 2021). In this study, probability sampling was used to ensure the relevant population characteristics were used as well as the representative requirement for generalizability. Because the target population activities are proportionally similar or homogenous, the study used a simple random sampling approach since no considerable variation in population characteristics would result in significant deviations or variance if a given target population were not taken into account.

3.5 Data Collection Methods

Researchers can collect data using many methods, including interviews, questionnaires, secondary sources, case studies, ethnographic settings, and electronic means. Most researchers assume that survey designs are simple, but some scholars argue that they are more complex than expected.

Researchers should make sure their data collection instrument can measure variables. Data collection for this study is conducted by means of a survey questionnaire. The study uses questionnaires to collect quantitative data and quantitative measures to determine the relationships between variables, building on previous research questions. In this study, we used scales that have proven to be valid and reliable in prior research. Researchers, however, need to ensure that instruments are valid, reliable, and of high quality (Hyman et al., 2006). To achieve the research objectives, studies can adapt the theoretical framework and research questions of prior studies, and caution should be exercised to protect critical elements such as validity and reliability.

Social interactions have been disrupted to an unprecedented degree by the COVID-19 pandemic. Therefore, e-mails and social media were used to collect data online. Residents' addresses were provided by Sharjah Municipality, Ajman Municipality, Sharjah Economic Development Department, Dubai Economic Development Department, and Federal Competitiveness and Statistics Authority. Before data collection, the purpose of the study and its objectives were explained in detail to the competent authorities, and their permission was obtained.

To collect data, surveys were issued in areas relevant to the study, like health behaviour and behaviour change. A geographical distribution analysis and understanding of possible regional variations, however, provided in-depth insight into the study. The questionnaires collected information on respondents' residential areas and other relevant items. Emails and social media as collection media helped shorten response times and increase response rates. A questionnaire was divided into six main sections. Participants' demographic data were collected in the first section, while the remaining four asked questions regarding independent variables: training effectiveness, attitude, commitment and employees trust, and one section dependent variable: is food safety behaviour. An instrument for data collection uses a five-point Likert scale. Thus, all variables,

such as training effectiveness, attitude, commitment, employee trust, and food safety behaviour, were measured using a five-point Likert scale.

3.5.1 Access to Participants

Once the required sample size was determined, the next step was to gather data from the population. Multiple stages of data collection were conducted. We performed a feasibility and sufficiency assessment before initiating collection, where feasibility is the ability to negotiate data access, and sufficiency is the success of achieving study objectives (Saunders et al., 2016). As stated earlier, given the current pandemic, the research minimalized physical access while using alternative approaches to gather information. Therefore, the feasibility presented a slight challenge for the research methodology.

3.5.2 Data Collection Process and Negotiating Access

Collecting data and negotiating access to it began with identifying respondent details and contacts, which were collected from a database of addresses provided by the competent authorities. The respondents were sent an e-mail informing them of the importance of the study and the need to provide accurate information once their detailed portfolios reached the required threshold. As noted, no physical access was necessary. The questionnaires were distributed by employees via email and social media to relevant respondents in different food manufacturers in the UAE. Some physical deliveries were possible, but in areas with the least compliance restrictions.

3.5.3 Maximising Response Rate

In social science research surveys, response rates are often low (Saunders et al., 2016). Nonetheless, increasing the response rate enhances the reliability and validity of the study, since it improves the study's representativeness and generalizability. A short questionnaire, visual

outlook, and incentives from prior studies were used by this study to increase response rate among its target population.

Researchers used the incentive as a tool for awareness creation; they informed respondents of the study's purpose and goals, as well as emphasized their importance and their critical role in achieving the desired results of the study. Respondents were therefore sensitized and specially treated to increase their interest in answering the questions. There is evidence that questionnaire features and structure, such as appealing colour themes and embedding infographics, improve response rates, though colour formatting should be done carefully to maintain formality (Morrel-Samuels, 2002). To pique respondents' interest, the study used a favourable colour format and texture on its questionnaire, resulting in a response rate of near 70%. As studies show, shorter questionnaires yield a higher response rate, the questionnaire in this study was kept within a reasonable length. Additionally, the study used user-friendly language to improve response attitudes and outcomes through enhanced respondent understanding (Saunders et al., 2016).

3.6 Pilot Study

According to research, all surveys should be pilot tested before the collection of actual data begins. In pilot studies, researchers gain experience collecting data in a minimal way, testing study assumptions and proposed actions in order to design an investigation method. In addition to enhancing the research design methods, conducting a pilot study provided the researcher with information about the response duration and speed. It helped the researcher improve the study's timeframe. In addition, the data collected in the pilot study helped identify elements of the questionnaire that may have negatively affected the research effectiveness and outcomes (Dillman et al., 2014).

It is true that pilot studies are expensive. However, such studies with a small sample size represent the main research spectrum (Dillman et al., 2014). However, there is no recommended sample size for a pilot study population. Therefore, the researcher must determine the sample size based on the subject under investigation, the target population, and the analytical level of the samples.

As the overall demographic population was relatively small, this study employed a small pilot study sample size to conserve resources. The target population consisted of 30 respondents. The study's questionnaire was distributed to the respondents for the purpose of assessing the validity and effectiveness of the questions. Moreover, it helped formulate questions that respondents found difficult to understand and restructure those that seemed vague and irrelevant to acquire the needed insights.

The present study employed Cronbach ‘s alpha coefficient to test the measurements’ reliability. The method shows the items' consistency when measuring the same construct by indicating that they show high consistency and share a high tendency to measure it. Nunnally and Bernstein (1994) proposed some minimum standards for Cronbach ‘s alpha, where alphas that are of 0.6, 0.7, 0.8 and 0.9 are for exploratory, basic, critical and issue-based, respectively. The Cronbach ‘s alpha coefficient of the study constructs is displayed in appendix 6, where it is evident that all have an acceptable level of internal consistency as they exceed the least level of alpha (0.6) (Nunnally & Beinstein, 1994).

3.7 Measurement of Variables

Based on four independent variables and one dependent variable, a conceptual framework was formulated. The dependent variable is food safety behaviour. The independent variables are training effectiveness, attitude, commitment, and employee trust. Three dimensions of food safety behaviour are analyzed: personal hygiene, food hygiene, and environmental hygiene. These

dimensions have different items. Five items were used to measure personal hygiene, thirteen items were used to measure food hygiene, and nine items were used to measure environmental hygiene. A total of 27 items were adapted from Rosmawati et al. (2015). Al-Kandari et al. (2019) used these measures to understand food safety behaviour and attitudes. Ruby et al. (2019) used them to test food safety behaviour and knowledge.

A scale adapted from Cannon-Bowers et al. (1995) was used to measure training effectiveness. The questionnaire has four dimensions: reaction, learning, behaviour, and results. Seven items measured reaction, three measured learning; five measured behaviour; and five measured results. Twenty items were used to measure training effectiveness.

An employee attitude survey used 14 items covering three factors: emotional, cognitive, and behavioural. It was adapted from Al-Kandari et al. (2019). The researcher used it to gauge and operationalize attitudes. This scale was used and validated by Kwal et al. (2020) and Taha et al. (2020a). To gauge commitment, this study adopted Meyer and Allen's (1991) three-component model of commitment. Studies of employee and workplace commitment usually use this scale. Recent studies have used this 24 items scale to measure and operationalize commitment with three components: affective (8 items), continuance (8 items), and normative (8 items). Several studies have used it, including Lub et al. (2012), Valaei and Rezaei (2016), Mory et al. (2016), and Hildreth et al. (2016).

A measure of employee trust was developed by Matzler and Renzl (2006). Faith in both peer and managerial intentions was measured. In total, six items were used to measure employee trust across the two dimensions. The scale has also been used in other studies, such as Nordheim et al. (2019) and George et al. (2019). Thus, a recent study adopted a scale developed by Matzler and Renzl (2006) to measure both dimensions of trust.

Adaptation of the questionnaire for data collection was made by using valid and reliable sources. The word 'adaptation' describes a questionnaire or question modified to produce a new questionnaire or question. Depending on whether a survey instrument is intended for a global, multicultural, or multiregional market, the adaptation process may differ. Furthermore, some adaptation requirements may be revealed during translation or pretesting. In this way, it is not possible to pinpoint a specific point in the survey lifecycle where adaptation requirements may be identified or addressed since it may vary per survey or project.

The survey lifecycle of many methods may include adaptability because every question, questionnaire, or instrument has its own structure, content, answer scale, and visual presentation. It is thus possible to adapt a question, a questionnaire, or an instrument according to the purpose. Adaptations are suitable for new populations, locations, languages, or modes. Adaptation can take many forms: system-driven adaptation, adaptation to improve guide comprehension, adaptation to improve conceptual coverage, adaptation for cultural considerations, and adaptation to address lexical and grammatical issues. Adaptation has been used in two modes for the UAE setting: adaptation for cultural sensitivity and adaptation for lexical and grammatical issues (see Appendices 1 and 2). Consequently, two questionnaires were used: one in English and one in Arabic.

The questionnaire was developed by adapting measurement tools already developed in the literature and modifying them according to the context of this study. To guarantee equivalence, the questionnaire was first developed in English and then translated into Arabic, with a back translation check as suggested by Brislin (1986).

3.8 Summary

The methodology of the study is presented in this chapter. The research methodology explained how to recognize, select, route, and evaluate evidence on a particular subject. The methodology segment of a research thesis allows the reader to assess a study's validity and rationality. The research described the research population, research methods, sampling techniques, data collection methods and sources, study time horizons, and empirical data analysis techniques.

Chapter Four: Results

This chapter describes the data preparation process before the data analysis of the full-scale survey. Accordingly, the study checked for missing data, assessed for singularity, outliers, normality, and multicollinearity. It then reversed negative items, conducted correlation analyses, and performed construct efficacy assessments of each hypothesised construct.

4.1 Missing Data and Data Filtering

First, the study filtered the data set. Respondents who answered all questions with 5 or 1 were removed since they might have answered the questions irrespective of the content. Thus, 35 responses were removed.

Second, the research variables were entered into AMOS to run a multivariate outlier test. This thesis employed Mahalanobis distance D^2 (a multivariate outlier detection method) because multivariate analysis employs more than one variable and is more effective for this study than the univariate or bivariate outlier detection method. The Mahalanobis distance D^2 value was used to calculate the Chi-square equivalent, and 0.001 was used to designate outlier (Hair et al., 2010b). Running multivariate outlier analysis using SPSS revealed 85 outliers (Table 4.1). Ultimately, the study had 183 valid responses, which are the original 268 viable responses minus the 85 outliers. The valid 183 responses will be used for any further analysis.

Table 4.1: Detecting Outliers

Observation number	Mahalanobis d-squared	Chi-square value	Observation number	Mahalanobis d-squared	Chi-square value
206	212.205	0	220	191.177	0
195	205.143	0	219	191.149	0
221	205.132	0	265	188.572	0
266	203.598	0	201	188.525	0

200	203.449	0	258	188.08	0
215	202.104	0	225	187.337	0
256	199.076	0	216	186.369	0
267	196.21	0	239	186.178	0
261	195.676	0	260	186.043	0
235	195.291	0	211	186.037	0
253	194.492	0	249	185.983	0
237	193.983	0	263	185.833	0
247	192.491	0	199	185.769	0
243	192.248	0	229	185.579	0
212	192.222	0	264	185.022	0
246	192.091	0	224	184.375	0
238	182.917	0	250	170.326	0
204	182.746	0	193	169.312	0
228	182.274	0	234	168.173	0
233	182.207	0	248	167.285	0
203	181.628	0	226	167.182	0
196	180.971	0	251	166.977	0
214	180.868	0	210	166.059	0
259	179.393	0	262	165.132	0
230	179.121	0	202	164.834	0
207	178.596	0	187	164.514	0
244	178.01	0	205	164.306	0
255	177.836	0	192	163.805	0
240	177.581	0	245	163.289	0
209	176.933	0	188	162.33	0
236	176.787	0	168	161.773	0
198	176.504	0	227	161.747	0
218	174.895	0	241	160.071	0
213	174.711	0	254	159.931	0
217	174.333	0	208	159.671	0
223	173.848	0	257	158.833	0
252	171.373	0	117	156.383	0
232	170.548	0	231	154.761	0
222	151.33	0	84	146.941	0
197	147.707	0	242	135.259	0.001
59	147.493	0			

4.2 Common Method Variance

This study employed a self-reported method to gather respondents' demographic information and attitudes toward the research variables. Collecting measures for more than one variable from one respondent might create an issue of high correlation between the answers, warranting a reason for any correlations between the variables. It is known as common method variance (CMV) (Eichhorn, 2014). Thus, to resolve the CMV problem, a remedial approach was followed, along with statistical and post hoc remedies. The study employed Harman's single factor test to control for the CMV. Its key assumption is that if CMV exists, a single factor emerges when testing all research items in unrotated exploratory factor analysis (EFA). Table 4.2 reports the results for the CMV test.

Table 4.2: Total Variance Explained for Common Method Variance Test

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	42.451	48.240	48.240	42.451	48.240	48.240
2	4.901	5.569	53.809	4.901	5.569	53.809
3	3.467	3.940	57.749	3.467	3.940	57.749
4	2.548	2.895	60.645	2.548	2.895	60.645
5	2.500	2.841	63.485	2.500	2.841	63.485
6	2.247	2.553	66.039	2.247	2.553	66.039
7	1.975	2.244	68.283	1.975	2.244	68.283
8	1.666	1.894	70.176	1.666	1.894	70.176
9	1.495	1.698	71.874	1.495	1.698	71.874
10	1.394	1.584	73.459	1.394	1.584	73.459
11	1.301	1.478	74.937	1.301	1.478	74.937
12	1.144	1.300	76.238	1.144	1.300	76.238
13	1.103	1.253	77.491	1.103	1.253	77.491
14	1.029	1.169	78.660	1.029	1.169	78.660

The analysis produced 84 components, 14 of which have an eigenvalue value > 1 (Table 4.2). A single factor explains 48.24% (less than 50%) of the variance. Accordingly, the CMV is not an issue, and the rest of the analysis can proceed.

4.3 Sample Characteristics

The respondents of this study were asked to deliver information regarding their demographic data. The following tables present the sample characteristics of each demographic item, the sample number N=183 represent the valid responses that were used in the following empirical tests after removing the outliers as was indicated in section 4.2. Table 4.3 presents the gender characteristics of the sample.

Table 4.3: Gender (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	51	27.9	27.9	27.9
	Female	132	72.1	72.1	100.0
	Total	183	100.0	100.0	

From Table 4.3, the females were 72.1%, higher than the males (27.9%), indicating that females work in HBBs more. Table 4.4 presents the age characteristics of the sample.

Table 4.4: Age (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 – Less than 25 Years	13	7.1	7.1	7.1
	25 – Less than 30 Years	25	13.7	13.7	20.8
	30 – Less than 35 Years	36	19.7	19.7	40.4
	35 – Less than 40 Years	61	33.3	33.3	73.8
	40 Years and Above	48	26.2	26.2	100.0
	Total	183	100.0	100.0	

From Table 4.4, most of the respondents were 30 to 40 years old (53%), 35- to 40-year-olds were higher among all age categories (33.3%), and 30- to 35-year-olds were 19.7%. Thus, most people who start HBBs are aged above 30 years. 20- to 25-year-olds were the least (7.1%). Thus, people

aged below 25 years tend not to start their own HBBs. Table 4.5 presents the nationality of the sample.

Table 4.5: Nationality (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Emiratis	164	89.6	89.6	89.6
	Others	19	10.4	10.4	100.0
	Total	183	100.0	100.0	

From Table 4.5, most respondents were Emiratis, where respondents with UAE nationality were 89.6% of the sample. Table 4.6 presents the living characteristics of the sample.

Table 4.6: Living (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	138	75.4	75.4	75.4
	Rural	45	24.6	24.6	100.0
	Total	183	100.0	100.0	

From Table 4.6, the sample covered urban and rural areas. The urban (rural) respondents represent 75.4% (24.6%) of the sample. Table 4.7 presents the education characteristics.

Table 4.7: Education (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below high school	10	5.5	5.5	5.5
	High school	40	21.9	21.9	27.3
	Diploma	32	17.5	17.5	44.8
	Bachelor	77	42.1	42.1	86.9
	Postgraduates	24	13.1	13.1	100.0
	Total	183	100.0	100.0	

From Table 4.7, 42.1.% have a bachelor's degree, and 13.1% have a higher education certificate. Further, 17.5 % of the respondents have a diploma, and 21.9% have completed high school. Those

with schooling below high school were the least (5.5%). Table 4.8 presents the experience characteristics of the sample.

Table 4.8: Experience (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 3 Years	51	27.9	27.9	27.9
	3 – Less than 6 Years	35	19.1	19.1	47.0
	6 – Less than 9 Years	23	12.6	12.6	59.6
	9 Years and Above	74	40.4	40.4	100.0
	Total	183	100.0	100.0	

From Table 4.8, 40.4% (27.9%) have more (less) than nine (three) years of experience in HBBs. Thus, the respondents are largely experienced. Table 4.9 presents the occupation characteristics of the sample.

Table 4.9: Occupation (N=183)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Food handler	16	8.7	8.7	8.7
	Assistant Food handler	8	4.4	4.4	13.1
	Manager	25	13.7	13.7	26.8
	Owner	68	37.2	37.2	63.9
	others	66	36.1	36.1	100.0
	Total	183	100.0	100.0	

From Table 4.9, most respondents were HBB owners (37.2%), followed by managers (13.7%). Food handlers (8.7) and their assistants (4.4) were the least.

To summrise the previous results a table is provided in the appendix 5 for this purpose.

4.4 Research Validity and Reliability

Validity and reliability are crucial to research issues. Validity can take many forms, such as face validity and content validity. The face validity of the questionnaire involves experts looking at the

items and agreeing that the questionnaire is valid. Content validity measures how accurately the scales assess the construct. Content validity is also validated by experts familiar with the concept.

Under construct validity, discriminant validity is another type of validity. The goal is to prove that a concept is different from others through empirical tests. For instance, discriminant validity tests prove the two factors of one variable are distinct and not highly correlated (Bolarinwa, 2015).

Additionally, discriminant validity is the degree to which a latent variable X is distinct from other latent variables (e.g., Y, Z, L). It also means a latent variable explains more variance in its observed variables than measurement errors, unmeasured external effects, or other constructs used in the same conceptual framework (Fornell and Larcker, 1981).

Confirmatory factor analysis (CFA) was used to validate the research scale. EFA, using maximum likelihood extraction, was adopted to probe the items loading, and the rotated factor matrix was used to create the model in AMOS and test the model using CFA.

CFA is 'a form of psychometric assessment that allows for the systematic comparison of an alternative *a priori* factor structure based on systematic fit assessment procedures and estimates the relationship between latent constructs, which have been corrected for measurement errors' (Boateng et al., 2018, pp.11). These techniques use the chi-square test of exact fit. The thresholds for the model fit indices are as follows: $\chi 2 /df<5$ (Harrington, 2009), Root Mean Square Error of Approximation (RMSEA ≤ 0.08) (Boateng et al., 2018), Tucker Lewis Index (TLI close to one), Comparative Fit Index (CFI close to one) Goodness of Fit (GFI ≥ 0.90) (Harrington, 2009).

The standardised factor loading can help confirm the questionnaire validity. First, it demonstrates factorial validity, empirical evidence for content validity. Given that it validates the content of the construct by employing factor analysis, it is usually used when a variable has multiple factors

(Bolarinwa, 2015). Moreover, factor loading presents correlations between the observed and latent variables.

4.5 Exploratory and Confirmatory Factor Analyses for Training Effectiveness

Originally, the training effectiveness comprised four factors: Reaction (R), Behavioural (B), Learning (L), and Results (RS). However, the initial EFA produces only two factors. When the EFA was forced to produce four factors, the results were dispersed and contained heavy cross-loading among the items. Table 4.10 presents the Kaiser-Meyer-Olkin (KMO) and Bartlett test results. The KMO value is > 0.60, and the Bartlett test is significant, indicating the data is suitable for EFA. Table 4.11 presents the item communalities, representing the amount of each factor variance explained by the item. Any value less than 0.20 should be removed (Hair et al., 2010a). However, all items have values > 0.20. The total variance explained is then checked.

Table 4.10: Kaiser-Meyer-Olkin and Bartlett's Test for Training Effectiveness

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.939**
Bartlett's Test of Sphericity	Approx. Chi-Square	4404.174
	df	190
	Sig.	0.000

From Table 4.10, the KMO value is 0.939 > 0.60, and Bartlett's Test is significant. Thus, the data set is suitable for the EFA test.

Table 4.11: Communality Test for Training Effectiveness

	Initial	**Extraction**
R2	.704	.577
R3	.852	.809
R4	.844	.840

L3	.800	.649
B1	.827	.714
B2	.737	.639
B3	.864	.822
B4	.900	.839
B5	.876	.753
RS1	.859	.750
RS2	.828	.778
RS3	.698	.621
RS4	.873	.823
RS5	.828	.712
R1	.499	.431
R5	.867	.778
R6	.898	.790
R7	.805	.697
L1	.792	.672
L2	.696	.583
Note: **Reaction (R), Behavioural (B), Learning (L), and Results (RS).**		

Table 4.12 shows the total variance explained by the two-factor model for Training Effectiveness. First, according to the Kaiser criterion, two factors have initial eigenvalues of 13.710 and 1.124 > 1, explaining 71.382% of the variance.

Table 4.12: Total Variance Explained Test for Training Effectiveness

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.710	68.551	68.551	13.431	67.155	67.155	8.446	42.228	42.228
2	1.124	5.622	74.174	.845	4.227	71.382	5.831	29.154	71.382
3	.754	3.772	77.946						
4	.594	2.971	80.917						

From Table 4.12, first, according to Kaiser criterion, two factors have initial eigenvalues of 13.710 and 1.124 > 1, explaining 71.382% of the variance.

Table 4.13 presents the two factors analysis using the varimax rotation method. Items having cross-loading with differences between loadings at less than 0.20 are removed to avoid subsequent validity issues.

Table 4.13: Rotated Factor Matrix for Training Effectiveness (Trial 1)

	Factor		Notes
	1	2	
B4	.825	.399	
RS4	.822	.382	
B3	.811	.405	
RS2	.790	.392	
RS1	.760	.416	
B5	.744	.448	
RS5	.731	.421	
RS3	.731		
B1	.684	.497	Cross-loading with less than 0.2 difference between the two loadings
B2	.660	.451	
L3	.650	.476	Cross-loading with less than 0.2 difference between the two loadings
R6	.646	.610	Cross-loading with less than 0.2 difference between the two loadings
R7	.614	.566	Cross-loading with less than 0.2 difference between the two loadings
L1	.595	.564	Cross-loading with less than 0.2 difference between the two loadings
L2	.578	.498	Cross-loading with less than 0.2 difference between the two loadings
R4	.352	.847	
R3		.845	
R5	.533	.702	
R2	.396	.648	
R1	.372	.540	
Note: Reaction (R), Behavioural (B), Learning (L), and Results (RS).			

From Table 4.13, the initial EFA analysis produces two factors with a cross-loading of a few items. Cross-loaded items with differences between the loading at less than 0.20 can be an issue for

validity. Accordingly, EFA was repeated after dropping the most problematic items, L1, L2, R6, which have the smallest differences in loading.

After removing the cross-loaded items, the analysis should be repeated until a satisfying model is reached, without any cross-loaded. Table numbers 4.14, 4.15, and 4.16 represent Trials 2, 3, and 4, respectively.

Table 4.14: Rotated Factor Matrix for Training Effectiveness (Trial 2)

	Factor		Notes
	1	2	
B4	.831	.385	
RS4	.825	.374	
B3	.820	.378	
RS2	.793	.385	
RS1	.770	.409	
B5	.753	.453	
RS3	.736		
RS5	.734	.416	
B1	.697	.479	
B2	.669	.440	
L3	.659	.441	
R7	.626	.542	Cross-loading with less than 0.2 difference between the two loadings
R3		.876	
R4	.368	.841	
R2	.402	.652	
R5	.553	.652	Cross-loading with less than 0.2 difference between the two loadings
R1	.388	.528	
Note: Reaction (R), Behavioural (B), Learning (L), and Results (RS).			

From Table 4.14, R7 and R5 are cross-loaded between the two factors. Accordingly, they are dropped, and the analysis is redone.

Table 4.15: Rotated Factor Matrix for Training Effectiveness (Trial 3)

Rotated Factor Matrix			Notes
	Factor		
	1	2	
B4	.840	.370	
RS4	.833	.366	
B3	.830		
RS2	.795	.382	
RS1	.780	.391	
B5	.759	.449	
RS5	.740	.408	
RS3	.737		
B1	.709	.447	
B2	.674	.427	
L3	.670	.412	
R3		.916	
R4	.402	.802	
R2	.408	.650	
R1	.417	.487	Cross-loading with less than 0.2 difference between the two loadings
Note: Reaction (R), Behavioural (B), Learning (L), and Results (RS).			

From Table 4.15, after removing R7 and R5, the R1 cross-loading emerges. Removing R1 results in the one-factor matrix. However, instead of removing R1, B3 with uncorrelated R1 from factor 1 was removed, thereby reducing the cross-loading between the two factors. This approach resulted in a better-loaded factor matrix (Table 4.16).

Table 4.16: Rotated Factor Matrix for Training Effectiveness (Trial 4)

Rotated Factor Matrix			
	Factor		Notes
	1	2	
RS4	.836	.364	
B4	.825	.382	
RS2	.811	.372	
RS1	.792	.387	
B5	.771	.443	

RS3	.756		
RS5	.738	.410	
B1	.694	.462	0.232
B2	.655	.440	0.215
L3	.636	.436	0.200
R3		.892	
R4	.389	.818	
R2	.394	.659	
R1	.398	.513	
Note: Reaction (R), Behavioural (B), Learning (L), and Results (RS).			

From Table 4.16, the remaining cross-loaded items have a cross-loading of > 0.20. Hence, it is acceptable. KMO, total variance extracted, and communality for the final solution are furnished in Tables 4.17 to 4.19.

Table 4.17: Kaiser-Meyer-Olkin and Bartlett's Test for Training Effectiveness (Trial 4)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.912**
Bartlett's Test of Sphericity	Approx. Chi-Square	2752.023
	df	91
	Sig.	0.000

From Table 4.17, KMO is 0.912 > 0.60, and Bartlett's Test of Sphericity is significant. The date is suitable for EFA (Hair et al., 2010a).

Table 4.18: Total Variance Explained for Training Effectiveness (Trial 4)

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.517	67.976	67.976	9.219	65.852	65.852	6.254	44.672	44.672
2	1.054	7.531	75.507	.807	5.765	71.617	3.772	26.945	71.617
3	.630	4.503	80.010						
4	.551	3.938	83.948						
5	.429	3.064	87.012						
6	.384	2.743	89.755						

7	.374	2.671	92.426						
8	.278	1.987	94.413						
9	.237	1.690	96.103						
10	.167	1.195	97.298						
11	.120	.858	98.156						
12	.103	.738	98.894						
13	.093	.661	99.556						
14	.062	.444	100.000						

From Table 4.18, the two-factor models explain 71.617% of the variance, which is > 50%. Additionally, the total variance extracted for the last model shows a slight enhancement from the initial variance extracted.

Table 4.19: Communality for Training Effectiveness (Trial 4)

	Initial	Extraction
R2	.670	.590
R3	.807	.895
R4	.798	.820
L3	.764	.595
B1	.793	.695
B2	.725	.623
B4	.877	.827
RS1	.851	.777
RS2	.808	.796
RS3	.674	.654
R1	.496	.421
RS5	.810	.712
RS4	.857	.831
B5	.867	.790
Note: Reaction (R), Behavioural (B), Learning (L), and Results (RS).		

Table 4.19 show that the items communality values are > 0.20; thus, the items have the minimum required shared variance and are suitable for EFA.

The study tested two CFA models for training effectiveness to confirm the EFA results. The fit was poor for the model with four factors, and high correlations existed between the factors. After refinement and correlating with the four-factor model, the errors did not produce an acceptable model fit index value (Table 4.20). Further, the correlation between the factors was between 0.96 and 0.78. These high correlations support the two-factor model, resulting in the EFA.

Table 4.20 shows the two-factor model CFA based on EFA model fit indices. The model does not achieve a good fit. All model fit indices were acceptable, except for RMSEA = 0.091 > 0.08. Thus, to enhance the model fit, the modification indices were evaluated, and the items with the highest error correlations with other items and low standardised loadings were removed. In this case, they were B1 and RS5. The model in Figure 4.1 provides a good fit, as furnished in Table 4.20.

Table 4.20: Model Fit Index for Training Effectiveness

	CMIN	CMIN/df	GFI	CFI	NFI	RMSEA
Four factors model	404.340	3.643	0.800	0.916	0.888	0.121
Two Factors model adopted from EFA	418.736	5.510	0.774	0.875	0.852	0.157
Two-factor model adopted from EFA with error correlation	152.781	2.505	0.901	0.967	0.946	0.091
Two-factor model adopted from EFA with error correlation after removing B1 and RS5	86.478	1.880	0.929	0.982	0.962	0.070

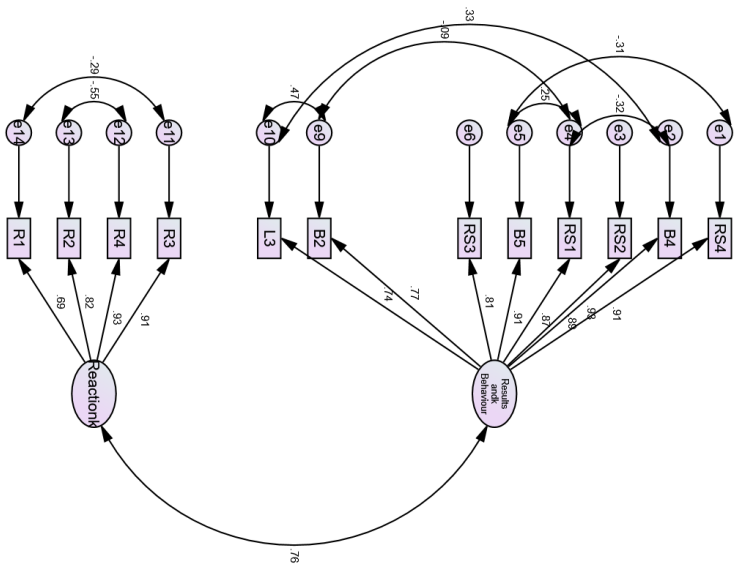


Figure 4.1: CFA model for Training Effectiveness

Table 4.21 provides the full standardised factor loading for the model. An item was loaded into two factors (reaction and results, learning and behaviour).

Table 4.21: Standardised Regression Weights for Training Effectiveness

			Estimate
RS4	<---	Results, Learning and Behaviour	.908
B4	<---	Results, Learning and Behaviour	.927
RS2	<---	Results, Learning and Behaviour	.888
RS1	<---	Results, Learning and Behaviour	.874
B5	<---	Results, Learning and Behaviour	.905
RS3	<---	Results, Learning and Behaviour	.811
B2	<---	Results, Learning and Behaviour	.772
L3	<---	Results, Learning and Behaviour	.738
R3	<---	Reaction	.909
R4	<---	Reaction	.931
R2	<---	Reaction	.817
R1	<---	Reaction	.695

From Table 4.21, all items have a significant standardised loading above 0.55 (Hair et al., 2010a). As a conclusion, the training effectiveness variable contains two factors namely, Reaction and

Results, Learning and Behaviour. This model with two factors showed the best factor analysis, and explains 71% of the variance and showed good results in CFA were all the model fit indices meet the required thresholds and the standardized factor loading showed a high values.

4.6 Exploratory and Confirmatory Factor Analyses for Attitude Toward Food Safety Behaviour

From the theory, this scale has one factor. The EFA analysis lends support by producing one factor. Tables 4.22 to 4.24 present the EFA analysis results.

Table 4.22: Kaiser-Meyer-Olkin and Bartlett's Test for Attitudes on Food Safety Behaviour

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.917**
Bartlett's Test of Sphericity	Approx. Chi-Square	2962.941
	df	91
	Sig.	0.000

From Table 4.22, the KMO value is 0.917 > 0.60, and Bartlett's Test of Sphericity is significant. Thus, the data is suitable for factor analysis.

Table 4.23: Communality of Attitudes on Food Safety Behaviour

	Initial	**Extraction**
FSA1	.742	.571
FSA2	.822	.691
FSA3	.808	.664
FSA4	.881	.771
FSA5	.878	.761
FSA6	.859	.833
FSA7	.865	.834
FSA8	.823	.741
FSA9	.810	.711
FSA10	.754	.607
FSA11	.819	.678
FSA12	.717	.491
FSA13	.779	.705
FSA14	.628	.454
Extraction Method: Maximum Likelihood.		
Note: Attitudes on Food Safety Behaviour (FSA)		

From Table 4.23, all communality values are > 0.20.

Table 4.24: Total Variance Explained for Attitude on Food Safety Behaviour

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.867	70.478	70.478	9.513	67.949	67.949
2	.929	6.639	77.117			
3	.700	5.002	82.119			
4	.567	4.047	86.165			
5	.372	2.659	88.825			
6	.366	2.613	91.437			
7	.293	2.091	93.528			
8	.189	1.351	94.879			
9	.184	1.313	96.192			
10	.155	1.107	97.298			
11	.137	.981	98.280			
12	.107	.761	99.041			
13	.073	.519	99.559			
14	.062	.441	100.000			
Extraction Method: Maximum Likelihood.						

From Table 4.24, only one factor meets the Kaiser criterion with an eigenvalue of 9.867 >1. This factor explains 67% of the variance > 50%.

Table 4.25 presents the factor matrix with the item loading.

Table 4.25: Factor Matrix for Attitude on Food Safety Behaviour

	Factor
	1
FSA1	.756
FSA2	.832
FSA3	.815
FSA4	.878
FSA5	.872

FSA6	.912
FSA7	.913
FSA8	.861
FSA9	.843
FSA10	.779
FSA11	.824
FSA12	.701
FSA13	.840
FSA14	.674
Note: Attitudes on Food Safety Behaviour (FSA)	

From Table 4.25, The factor loading values are above 0.4, the significant practical level for factor analysis (Hair et al., 2010a).

CFA was used to explore the model fit and find the standardised factor loading to confirm the EFA results. From Table 4.26, the first CFA test did not produce an acceptable fit. Accordingly, the modification indices were studied, and the items with errors with high covariance values were correlated, producing a model with a better fit.

However, it did not meet the minimum required values. Hence, the modification indices were evaluated, some items were removed, and many trials were conducted to produce the final model. The final model fit was acceptable and met the minimum required (Table 4.26). Figure 4.2 presents the final CFA model.

Table 4.26: Model Fit Indices for Food Safety Attitude on Food Safety Behaviour

	CMIN	**CMIN/df**	**GFI**	**CFI**	**NFI**	**RMSEA**
One-Factor model from EFA	658	8.54	0.652	0.804	0.785	0.204
One-Factor model of EFA with error correlation	291.3	4.48	0.83	0.924	0.905	0.138
One-factor model of EFA with error correlation after removing items.	37.51	2.34	0.952	0.985	0.975	0.086

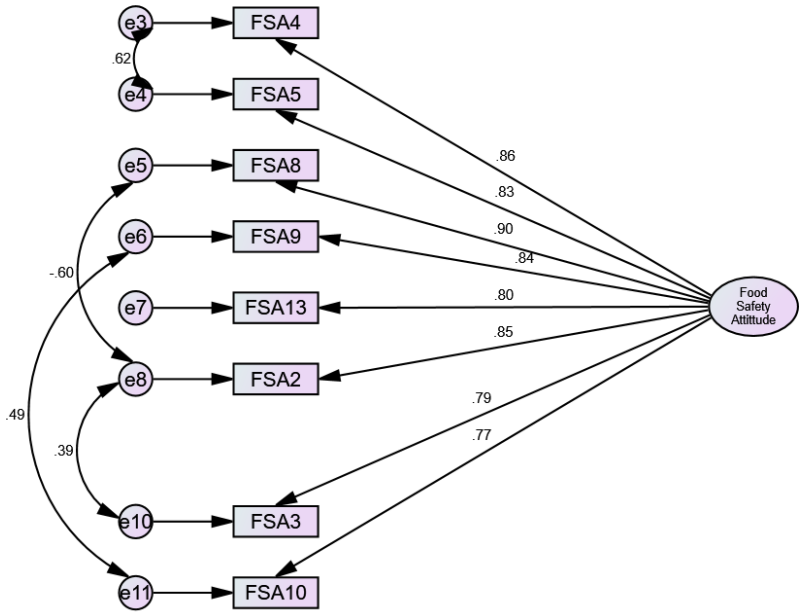


Figure 4.2: The CFA for the Food Safety Attitude

The standardised factor loading for the model is presented in table 4.27. Each loading value exceeded 0.50, which is the minimum required (Hair et al., 2010a).

Table 4.27: Standardised Regression Weights for attitudes on food safety behaviour

			Estimate
FSA4	<---	Food Safety Attitude	0.863
FSA5	<---	Food Safety Attitude	0.833
FSA8	<---	Food Safety Attitude	0.899
FSA9	<---	Food Safety Attitude	0.844
FSA13	<---	Food Safety Attitude	0.804
FSA2	<---	Food Safety Attitude	0.855
FSA3	<---	Food Safety Attitude	0.793
FSA10	<---	Food Safety Attitude	0.767
Note: Attitudes on Food Safety Behaviour (FSA)			

As a conclusion, the factor analysis of the attitude toward food safety revealed that the variable is one-dimensional and all the scale items loaded into one factor, this solution explains 67% of the

variance and the CFA confirmed that this solution is valid through the model fit indices that meet all the thresholds and high-standardized factor loading.

4.7 Exploratory and Confirmatory Factor Analyses for Commitment

The original scale has three factors, and the EFA was used to test the scale. The first trial produced four factors. Tables 4.28 to 4.30 present the EFA results.

Table 4.28: Kaiser-Meyer-Olkin and Bartlett's Test for Commitment

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.900**
Bartlett's Test of Sphericity	Approx. Chi-Square	3123.151
	df	231
	Sig.	0.000

From Table 4.28, the KMO value is > 0.60, and Bartlett's Test of Sphericity is significant. Thus, the data is suitable for factor analysis.

Table 4.29: Communalities for Commitment

	Initial	**Extraction**
AFF1	.573	.495
AFF2	.786	.819
AFF3	.725	.752
AFF4	.381	.311
AFF5	.747	.719
AFF6	.644	.603
AFF7	.861	.811
Con1	.786	.804
Con2	.681	.702
Con3	.765	.630
Con4	.695	.538
Con5	.688	.633
Con6	.688	.751
Con7	.634	.547
Norm1	.499	.398
Norm2	.638	.588
Norm3	.792	.827

Norm4	.716	.722
Norm5	.525	.469
Norm6	.750	.692
Norm7	.754	.674
Norm8	.592	.421
Extraction Method: Maximum Likelihood.		
Note: Affective commitment (AFF), Normative commitment (Norm), Continuance commitment (Con)		

From Table 4.29, all communality values are > 0.20.

Table 4.30: Total Variance Explained for Commitment (Trial 1)

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.335	46.977	46.977	9.969	45.314	45.314	4.546	20.663	20.663
2	2.321	10.550	57.528	1.981	9.007	54.321	3.494	15.881	36.545
3	1.508	6.855	64.383	1.145	5.203	59.525	3.251	14.776	51.320
4	1.308	5.945	70.328	.811	3.684	63.209	2.615	11.889	63.209
5	.843	3.834	74.161						
6	.706	3.208	77.370						
7	.684	3.110	80.480						
8	.587	2.666	83.146						
9	.524	2.383	85.529						
10	.499	2.269	87.798						
11	.366	1.665	89.463						
12	.355	1.614	91.077						
13	.320	1.452	92.529						
14	.293	1.331	93.860						
15	.261	1.185	95.045						
16	.226	1.026	96.071						
17	.195	.887	96.958						
18	.165	.748	97.706						
19	.157	.712	98.418						
20	.143	.650	99.068						
21	.116	.526	99.594						
22	.089	.406	100.000						
Extraction Method: Maximum Likelihood.									

From Table 4.30, four factors meet the Kaiser criterion with eigenvalues of 10.335, 2.321, 1.509, and 1.308 >1. These four actors explain 67% of the variance > 50%.

Table 4.31: Rotated Factor Matrix for Commitment (Trial 1)

	Factor				
	1	2	3	4	
AFF1				.612	
AFF2	.496			.714	
AFF3	.377			.754	
AFF4			.398	.386	Cross-loading with less than 0.2 difference between the two loadings
AFF5		.641		.432	Cross-loading with less than 0.2 difference between the two loadings
AFF6		.477		.520	Cross-loading with less than 0.2 difference between the two loadings
AFF7		.682	.360		
Con1		.767			
Con2	.405	.685			
Con3		.527	.550		Cross-loading with less than 0.2 difference between the two loadings
Con4		.476	.558		Cross-loading with less than 0.2 difference between the two loadings
Con5		.432	.553		Cross-loading with less than 0.2 difference between the two loadings
Con6			.795		
Con7			.605		
Norm1			.537		
Norm2	.676				
Norm3	.827				
Norm4	.790				
Norm5	.576				
Norm6	.759				
Norm7	.759				
Norm8			.531		
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalisation.					
a. Rotation converged in 11 iterations.					
Note: Affective commitment (AFF), Normative commitment (Norm), Continuance commitment (Con)v					

From Table 4.31, the initial EFA analysis produces four factors with a cross-loading of a few items. As noted, cross-loaded items with a difference between the loading at less than 0.20 can be an

issue for validity. Accordingly, EFA should be repeated after dropping the most problematic items with the smallest loading differences. Accordingly, the study removed Aff4 and Con3.

As before, the analysis should be repeated until a satisfying model is reached without any cross-loaded. Tables 4.32, 4.33, and 4.34 present Trials 2, 3, and 4, respectively.

Table 4.32: Rotated Factor Matrix for Commitment (Trial 2)

	Factor				Notes
	1	2	3	4	
AFF1				.613	
AFF2	.475			.692	Cross-loading with differences > 0.2 (neglected)
AFF3				.836	
AFF5			.667	.399	Cross-loading on difference > 0.2, miss loading on continuance commitment factor
AFF7		.429	.700		Cross-loading on difference > 0.2, miss loading on continuance commitment factor
Con1		.359	.715		Cross-loading with differences > 0.2 (neglected)
Con2	.400		.629		Cross-loading with differences > 0.2 (neglected)
Con4		.557	.355		Cross-loading with differences > 0.2 (neglected)
Con5		.601	.364		Cross-loading with differences > 0.2 (neglected)
Con6		.892			
Con7		.610			
Norm1		.510			
Norm2	.670				
Norm3	.815				
Norm4	.774				
Norm5	.574				
Norm6	.752				
Norm7	.751				
Norm8		.507			Miss loaded miss loading on continuance commitment factor
AFF6			.482	.524	Cross-loading less than 0.2
Note: Affective commitment (AFF), Normative commitment (Norm), Continuance commitment (Con)					

Table 4.32 shows that EFA must be repeated by removing Aff5 and Aff7. Table 4.33 presents the rotated factor matrix for commitment after dropping Aff5 and Aff7 (Trial 3).

Table 4.33: Rotated Factor Matrix for Commitment (Trial 3)

	Factor			Notes
	1	2	3	
AFF1			.696	
AFF2	.460		.771	
AFF3			.777	
Con1		.625	.365	
Con2	.423	.531		Cross-loading with less than 0.2 difference between the two loadings
Con4		.703		
Con5		.696		
Con6		.816		
Con7		.673		
Norm1		.525		
Norm2	.673			
Norm3	.823			
Norm4	.785			
Norm5	.574			
Norm6	.747			
Norm7	.752			
Norm8	.352	.417		Cross-loading with less than 0.2 difference between the two loadings
AFF6		.415	.560	Cross-loading with less than 0.2 difference between the two loadings
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalisation.				
a. Rotation converged in 6 iterations.				
Note: Affective commitment (AFF), Normative commitment (Norm), Continuance commitment (Con)				

From Table 4.33, the items are loaded into three factors (similar to the original scale). Moreover, Con 2, Norm 8, Norm 1, and Aff6 still show a cross-loading problem; thus, the items should be removed. Table 4.34 presents the final EFA.

Table 4.34: Rotated Factor Matrix for Commitment (Trial 4)

	Factor			Notes
	1	2	3	
AFF1			.687	
AFF2	.454		.810	Cross-loading with differences > 0.2 (neglected)
AFF3	.352		.728	Cross-loading with differences > 0.2 (neglected)
Con1		.587		
Con4		.679		
Con5	.352	.713		Cross-loading with differences > 0.2 (neglected)
Con6		.826		
Con7		.680		
Norm2	.685			
Norm3	.831			
Norm4	.797			
Norm5	.572			
Norm6	.761			
Norm7	.753			
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalisation.				
a. Rotation converged in 6 iterations.				
Note: Affective commitment (AFF), Normative commitment (Norm), Continuance commitment (Con)				

Table 4.35 presents the total variance explained for the final trial.

Table 4.35: Total Variance Explained for Commitment (Trial 4)

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.992	49.940	49.940	6.589	47.065	47.065	3.958	28.269	28.269
2	1.887	13.476	63.416	1.500	10.713	57.778	2.820	20.143	48.412

3	1.172	8.371	71.787	.924	6.603	64.382	2.236	15.970	64.382
4	.725	5.181	76.968						
5	.632	4.512	81.479						
6	.443	3.166	84.645						
7	.411	2.939	87.584						
8	.341	2.436	90.020						
9	.331	2.365	92.386						
10	.297	2.121	94.507						
11	.242	1.728	96.235						
12	.206	1.470	97.705						
13	.168	1.197	98.902						
14	.154	1.098	100.000						
Extraction Method: Maximum Likelihood.									

From Table 4.35, the final model comprises three factors with eigenvalues of 6.992, 1.887, and 1.172 >1, explaining 64.382 (> 50%) of the variance. The variance shows an enhancement than the first trial variance loading; thus, the model fit is better for the three factors. They were then tested using CFA. The initial model does not show an acceptable model fit. However, the model shows an acceptable model fit after correlating the errors (Table 4.36). Figure 4.3 shows the CFA model.

Table 4.36: Model Fit Indices for Commitment

	CMIN	**CMIN/df**	**GFI**	**CFI**	**NFI**	**RMSEA**
Three factor model from EFA	202.570	2.737	0.869	0.924	0.886	0.098
Three factor model of EFA with error covariance	173.003	2.437	0.900	0.940	0.903	0.089

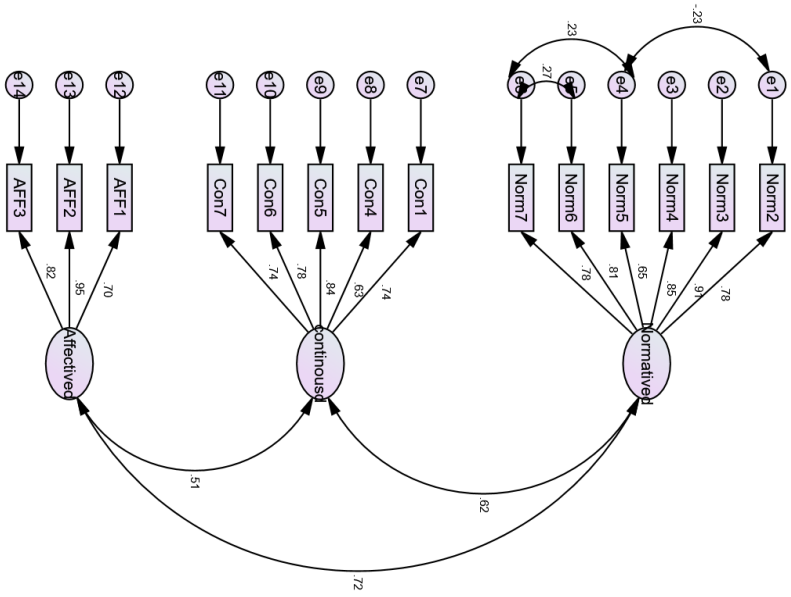


Figure 4.3: CFA for the Commitment model

Table 4.37 presents the standardised factor loading for the items.

Table 4.37: Standardised Factor Loading for the Items

			Estimate
Norm2	<---	Normative	.781
Norm3	<---	Normative	.910
Norm4	<---	Normative	.853
Norm5	<---	Normative	.654
Norm6	<---	Normative	.813
Norm7	<---	Normative	.779
Con1	<---	Continuance	.741
Con4	<---	Continuance	.633
Con5	<---	Continuance	.837
Con6	<---	Continuance	.781
Con7	<---	Continuance	.737
AFF1	<---	Affective	.705
AFF2	<---	Affective	.949
AFF3	<---	Affective	.824

From Table 4.37, all items have a standardised factor loading > 0.50, which is the minimum required (Hair et al., 2010a).

As a conclusion, the factor analysis of the employees commitment revealed that the variable is three-dimensional and all the scale items loaded into three factor namely normative, continuance and affective, which is consistent with the original scale,, this solution explains 64% of the variance and the CFA confirmed that this solution is valid through the model fit indices that meet all the thresholds and high-standardized factor loading.

4.8 Exploratory and Confirmatory Factor Analyses for Employee Trust

The original scale has two factors: employee faith in peers and management. The EFA shows that the items were loaded into one factor. Tables 4.38 to 4.40 show the EFA results.

Table 4.38: Kaiser-Meyer-Olkin and Bartlett's Test for Employee Faith

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.825**
Bartlett's Test of Sphericity	Approx. Chi-Square	808.711
	df	15
	Sig.	.000

From Table 4.38, the KMO value is 0.825 (> 0.60), and Bartlett's Test of Sphericity is significant. Thus, the data is suitable for factor analysis.

Table 4.39: Communalities for Employee Trust

	Initial	**Extraction**
FP1	.614	.656
FP2	.748	.749
FP3	.787	.816
FM1	.658	.619
FM2	.698	.657
FM3	.501	.472
Extraction Method: Maximum Likelihood.		
Note: Faith in peer (FP), Faith in Management (FM)		

From Table 4.39, all communality values are > 0.20.

Table 4.40: Total Variance Explained for Employee Faith

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.298	71.631	71.631	3.970	66.171	66.171
2	.523	8.710	80.342			
3	.465	7.746	88.087			
4	.306	5.092	93.179			
5	.291	4.855	98.034			
6	.118	1.966	100.000			

From Table 4.40, one factor can meet the Kaiser criterion with an eigenvalue of 4.298 >1. The four factors explain 66.171% of the variance (> 50%). Table 4.41 presents the factor matrix.

Table 4.41: Factor Matrix for Employee Faith

	Factor
	1
FP3	.903
FP2	.866
FM2	.810
FP1	.810
FM1	.787
FM3	.687
Extraction Method: Maximum Likelihood.	
Note: Faith in peer (FP), Faith in Management (FM)	

From Table 4.41, the factor matrix of the item shows that the item loading is higher than 0.4, which is the minimum required (Hair et al., 2010a).

The two-factor models were tested in CFA (Figure 4.4) to confirm the EFA results. Table 4.42 shows that the model fit is not acceptable (RMSEA > 0.08; CMIN/df > 5), and the two factors exhibit a high correlation (i.e., r= 0.910). The one-factor model does not produce a good fit initially. However, after correlating the errors, the model produces an acceptable fit (Table 4.42).

Table 4.42: Model fit indices for Employee Faith

	CMIN	CMIN/df	GFI	CFI	NFI	RMSEA
Two-factor model (Original scale)	52.206	6.526	0.931	0.945	0.936	0.174
One-factor model from EFA	70.383	7.820	0.912	0.924	0.914	0.194
Three factor model of EFA with error correlation	12.346	2.058	0.979	0.992	0.985	0.076

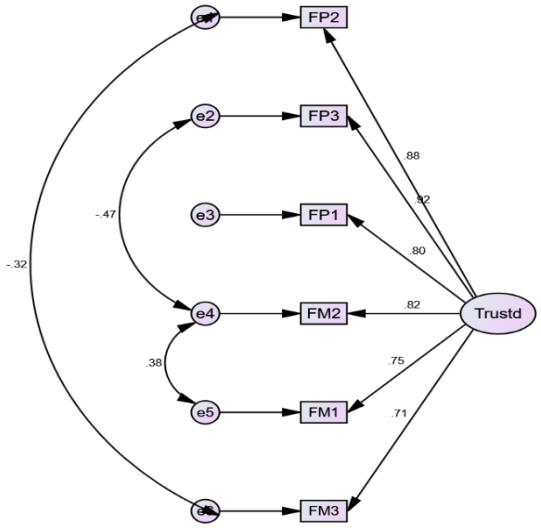


Figure 4.4: CFA for the Employee Faith model

Table 4.43 presents the standardised regression weights for employee faith from the CFA analysis.

Table 4.43: Standardised Regression Weights for Employee Faith

			Estimate
FP2	<---	Faith	.878
FP3	<---	Faith	.924
FP1	<---	Faith	.795
FM2	<---	Faith	.820
FM1	<---	Faith	.749
FM3	<---	Faith	.713
Note: Faith in peer (FP), Faith in Management (FM)			

From Table 4.43, all standardised regression weights are higher than 0.50, which is the minimum acceptable value (Hair et al., 2010a).

As a conclusion, the factor analysis of the employee trust revealed that the variable is one-dimensional and all the scale items loaded into one factor, this solution explains almost 67% of the variance and the CFA confirmed that this solution is valid through the model fit indices that meet all the thresholds and high-standardized factor loading.

4.9 Food Safety Behaviour

This scale has three factors: Food Hygiene (FH), Personal Hygiene (PH), and Environmental Hygiene (EH). It was tested in EFA to explore the factor loading. Tables 4.44 to 4.46 show the results for the initial EFA.

Table 4.44: Kaiser-Meyer-Olkin and Bartlett's Test for Food Safety behaviour

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.918**
Bartlett's Test of Sphericity	Approx. Chi-Square	4158.520
	df	325
	Sig.	.000

From Table 4.44, the KMO value is 0.918 > 0.60, and Bartlett's Test of Sphericity is significant. Thus, the data is suitable for factor analysis.

Table 4.45: Communalities for Food Safety behaviour

	Initial	**Extraction**
PH1	.678	.550
PH2	.675	.557
PH3	.866	.900
PH4	.680	.619
PH5	.815	.740
FH1	.749	.689
FH2	.638	.484
FH3	.660	.443

FH4	.599	.384
FH5	.706	.607
FH6	.720	.601
FH7	.765	.711
FH8	.514	.459
FH9	.672	.546
FH10	.806	.695
FH11	.617	.478
FH12	.686	.579
EH1	.675	.624
EH2	.811	.696
EH3	.736	.653
EH4	.741	.600
EH5	.823	.734
EH6	.823	.740
EH7	.735	.646
EH8	.806	.701
EH9	.746	.708
Note: Food Hygiene (FH), Personal Hygiene (PH), and Environmental Hygiene (EH)		

From Table 4.45, all communality values are > 0.20.

Table 4.46: Total Variance Explained for Food Safety behaviour

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.021	53.927	53.927	13.560	52.155	52.155	5.784	22.248	22.248
2	2.014	7.747	61.674	1.591	6.118	58.273	5.621	21.621	43.869
3	1.302	5.009	66.683	.993	3.819	62.093	4.738	18.224	62.093
4	.943	3.625	70.308						
5	.791	3.041	73.349						
6	.776	2.983	76.333						
7	.617	2.374	78.707						

8	.581	2.233	80.940						
9	.554	2.130	83.070						
10	.496	1.908	84.978						
11	.451	1.735	86.712						
12	.437	1.681	88.394						
13	.393	1.513	89.907						
14	.361	1.389	91.296						
15	.314	1.207	92.503						
16	.290	1.116	93.619						
17	.284	1.091	94.710						
18	.243	.936	95.646						
19	.220	.848	96.494						
20	.191	.734	97.228						
21	.177	.683	97.910						
22	.156	.600	98.510						
23	.117	.449	98.958						
24	.107	.411	99.369						
25	.101	.390	99.759						
26	.063	.241	100.000						
Extraction Method: Maximum Likelihood.									

From Table 4.46, three factors meet the Kaiser criterion with eigenvalues of 14.021, 2.014, and 1.302 >1. They explain 62.093% of the variance (> 50%). Table 4.46 presents the factor matrix.

Table 4.47 presents the rotating factor matrix for Food Safety Behaviour.

Table 4.47: Rotated Factor Matrix for Food Safety Behaviour (Trial 1)

	Factor			
	1	2	3	
PH1	.663			
PH2	.582	.458		Cross-loading with < 0.2 difference
PH3	.891			
PH4	.759			
PH5	.756			
FH1	.672	.431		
FH2		.448	.463	Cross-loading with < 0.2 difference
FH3			.616	

FH4			.592	
FH5	.462		.543	Cross-loading with < 0.2 difference
FH6	.479	.397	.462	Cross-loading with < 0.2 difference
FH7	.624		.536	
FH8			.661	
FH9		.356	.594	
FH10	.450	.482	.510	Cross-loading with < 0.2 difference
FH11		.462	.393	Cross-loading with < 0.2 difference
FH12	.501		.471	Cross-loading with < 0.2 difference
EH1		.622	.391	
EH2		.552	.540	Cross-loading with < 0.2 difference
EH3	.443	.520	.432	Cross-loading with < 0.2 difference
EH4	.366	.569	.377	Cross-loading with < 0.2 difference
EH5	.414	.657	.362	Cross-loading with differences < 0.2
EH6		.749		
EH7		.562	.464	Cross-loading with < 0.2 difference
EH8		.715		
EH9		.757		
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalisation.				
a. Rotation converged in 6 iterations.				
Note: Food Hygiene (FH), Personal Hygiene (PH), and Environmental Hygiene (EH)				

From Table 4.47, a few items cross-loaded have a less than 0.20 difference in cross-loading values. Thus, they were removed. After conducting several trials (see **Appendix 4**), Trail 7 produced the following rotated factor matrix. Table 4.48 presents Trail 7.

Table 4.48: Rotated Factor Matrix for Food Safety Behaviour (Trial 7)

	Factor			
	1	2	3	
PH1		.663		
PH3		.851		
PH4		.771		
PH5		.764		
FH3			.694	
FH4			.678	

FH8			.717	
FH9	.388		.617	
EH1	.642		.371	
EH2	.626		.404	
EH4	.612	.356		Cross-loading with differences > 0.2 (neglected)
EH5	.738	.387		Cross-loading with differences > 0.2 (neglected)
EH6	.751			
EH7	.676			
EH8	.800			
EH9	.741			
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalisation.				
a. Rotation converged in 6 iterations.				
Note: Food Hygiene (FH), Personal Hygiene (PH), and Environmental Hygiene (EH)				

From Table 4.48, the items are loaded on three factors. Two items are cross-loaded; however, the difference between the loading values is larger than 0.20 and can be neglected.

Table 4.49 presents the total variance extracted for Trial 7.

Table 4.49: Total Variance Explained for Food safety Behaviour (Trial 7)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.471	52.944	52.944	8.072	50.451	50.451	4.573	28.580	28.580
2	1.798	11.236	64.180	1.397	8.729	59.179	3.172	19.826	48.405
3	1.192	7.451	71.631	.934	5.840	65.020	2.658	16.614	65.020
4	.637	3.984	75.615						
5	.590	3.691	79.305						
6	.515	3.217	82.522						
7	.458	2.865	85.387						
8	.433	2.705	88.092						
9	.391	2.447	90.539						
10	.337	2.108	92.647						
11	.277	1.731	94.378						
12	.273	1.706	96.083						
13	.203	1.271	97.355						
14	.164	1.027	98.382						
15	.141	.879	99.261						

16	.118	.739	100.000						

Table 4.49 shows three factors with eigenvalues 8.471, 1.798, and 1.192 >1. The variance of the final model (Trial 7) produced a variance of 65.020 > 50%. Further, this variance is higher than the total variance of this and subsequent trials, confirming the model fit.

The CFA for the EFA model was tested. The initial CFA produced a poor fit (RMSEA = 0.105 and GFI= 0.844) after correlating the errors based on the covariance value and removing the items that correlate across variables items FH4 and PH3 to achieve the best fit. Table 4.50) shows the model fit indices for all trials, and Figure 4.5 shows the CFA model.

Table 4.50: Model Fit Indices for Food Safety Behaviour

	CMIN	CMIN/df	GFI	CFI	NFI	RMSEA
Three factor model adopted from EFA	305.2	3.021	0.844	0.905	0.865	0.105
Three factor model adopted from EFA with error correlation	254.4	2.596	0.865	0.927	0.888	0.094
Three factor model adopted from EFA with error correlation after removing PH4 and FH4	167.7	2.362	0.895	0.948	0.914	0.087
Three factor model adopted from EFA with error correlation after removing PH3 and FH4	138.361	2.005	0.907	0.961	0.925	0.074

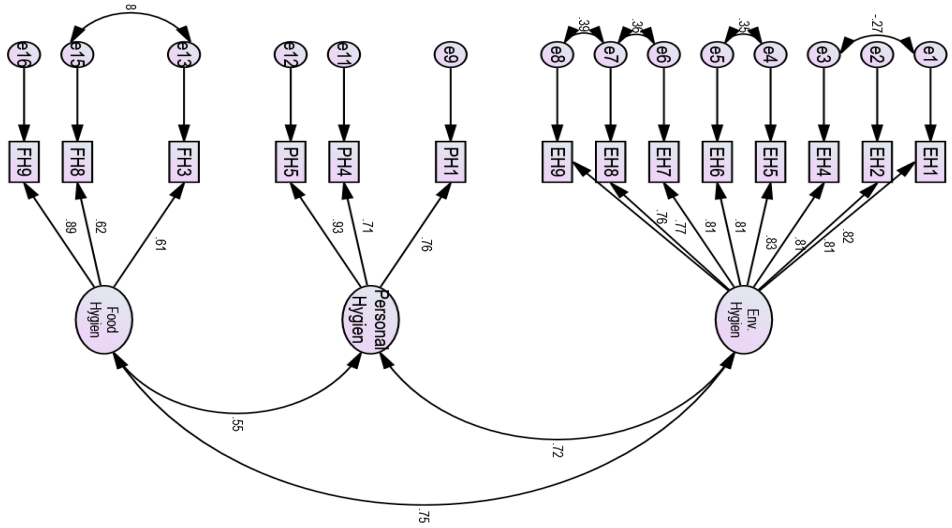


Figure 4.5: CFA for the Food Safety Behaviour

Table 4.51 shows the standardised factor loading for all items of the dependent variable: Food Safety Behaviour.

Table 4.51: Standardised Regression Weights for Food Safety behaviour

			Estimate
EH1	<---	Environmental Hygiene	0.815
EH2	<---	Environmental Hygiene	0.815
EH4	<---	Environmental Hygiene	0.811
EH5	<---	Environmental Hygiene	0.833
EH6	<---	Environmental Hygiene	0.809
EH7	<---	Environmental Hygiene	0.805
EH8	<---	Environmental Hygiene	0.772
EH9	<---	Environmental Hygiene	0.763
PH1	<---	Personal Hygiene	0.756
PH4	<---	Personal Hygiene	0.708
PH5	<---	Personal Hygiene	0.934
FH3	<---	Food Hygiene	0.612
FH8	<---	Food Hygiene	0.62
FH9	<---	Food Hygiene	0.888

From Table 4.51, all Standardised Regression Weights for Hygiene behaviour are > 0.50, which meet the minimum requirements (Hair et al., 2010a).

Since Food safety Behaviour is the dependent variable and used as a global variable, the second-order CFA should be estimated to confirm the model fit. Figure 4.6 and Table 4.52 show the results.

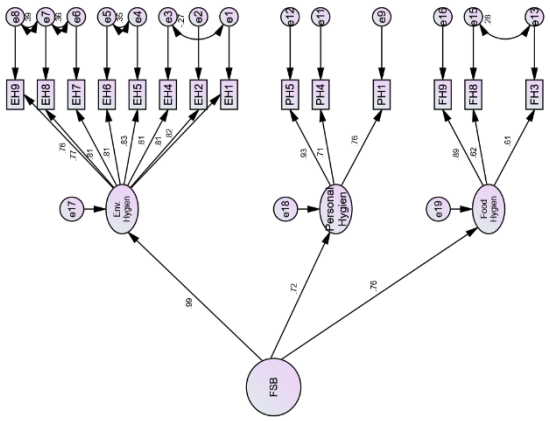


Figure 4.6: CFA for the second-order model for Food Safety Behaviour

Table 4.52: Second-order model fit for Food Safety Behaviour

CMIN	CMIN/df	GFI	CFI	NFI	RMSEA
138.4	2.005	0.907	0.961	0.925	0.074

From Table 4.52, the model meets the model fit requirements.

As a conclusion, the factor analysis of the Food Safety Behaviour (the dependent) revealed that the variable is three-dimensional and all the scale items loaded into one factor, this solution explains almost 67% of the variance and the CFA confirmed that this solution is valid through the model fit indices that meet all the thresholds and high-standardized factor loading.

4.10 Convergent and Discriminant Validity for the Research Variables

To test convergent validity, the average variance extracted (AVE) and composite reliability (CR) were measured. Based on the measurement error, the AVE represents the amount of variance captured by a construct (Fornell and Larcker, 1981). It is the 'average amount of variance in the

observed variables that a latent construct [can] explain' (Farrell, 2010, pp.4). The following equation is used to calculate the AVE:

$$AVE = \sum_{k=0}^{n} \lambda^2 / (\sum_{k=0}^{n} \lambda^2 + \sum_{k=0}^{n} \varepsilon),$$

where λ is the standardised factor loading, and ε is the variance. When AVE is less than 0.5, the construct variance, given the measurement error, is higher than the variance captured by the construct (Fornell and Larcker, 1981).

The **CR** was calculated using the equation

$$CR = (\sum_{k=0}^{n} \lambda)^2 / ((\sum_{k=0}^{n} \lambda)^2 + \sum_{k=0}^{n} \varepsilon)$$ (Fornell and Larcker, 1981).

The threshold for CR is > 0.7

The internal consistency of the questionnaire questions was evaluated using Cronbach's alpha; Hair (2010) recommends a threshold value of above 0.7.

Table 4.53 shows the results. The correlation was calculated via AMOS. A CFA model containing all variables was created to calculate the correlations between the variables, which matched what was demonstrated in the prior individuals CFA models. CR and AVE were calculated using the furnished equations. Cronbach alpha was calculated using SPSS; only the variables that remained after the validity check were used in the study.

Table 4.53: Average Variance Extracted, Composite Reliability, and Cronbach-α for the research variables

Scale variables	Number of variables	CR > 0.7	AVE > 0.5	Cronbach-α
Training Effectiveness				
• **Learning, Behaviour, and Result**	8	0.956	0.731	0.955
• **Reaction**	4	0.908	0.715	0.887
The Attitude of Food Safety Behaviour				
• **Food Safety Attitude**	8	0.949	0.700	0.949
Commitment				
• **Continuance**	5	0.864	0.562	0.863
• **Normative**	6	0.915	0.644	0.906

• **Affective**	3	0.868	0.691	0.860
Employee Trust				
• **Faith**	6	0.916	0.647	0.919
Food Safety Behavior				
• **Food Hygiene**	3	0.755	0.517	0.820
• **Personal Hygiene**	3	0.886	0.723	0.895
• **Environmental Hygiene**	8	0.937	0.649	0.938

From Table 4.53, all research factors have CR > 0.70, AVE > 0.50, and Cronbach Alpha > 0.70. These results confirm the constructs convergent validity and reliability.

The bold diagonal values of the discriminant validity (Table 4.54) represent the square root of the AVE. Comparing those values with the correlation value (created from the CFA analysis), the value of the square root of AVE is higher. Hence, the average variance of a latent construct in observed variables is greater than the variance of another variable shared by the construct.

It is worth noting that the correlations in Table 4.54 are between the variables after performing Factor analysis.

Table 4.54: Factor correlations and discriminant validity

Item No.										
		1	2	3	4	5	6	7	8	9	10
1	Personal Hygiene	**0.850**									
2	Reaction	0.549	**0.855**								
3	Learning, Behaviour and Result	0.594	0.736	**0.846**							
4	Food Safety Attitude	0.751	0.774	0.627	**0.837**						
5	Normative Commitment	0.651	0.719	0.639	0.751	**0.802**					
6	Continuance Commitment	0.360	0.550	0.413	0.453	0.617	**0.750**				
7	Affective Commitment	0.559	0.699	0.678	0.774	0.724	0.516	**0.831**			
8	Employee Trust	0.551	0.597	0.518	0.690	0.787	0.599	0.684	**0.804**		
9	Food Safety Behaviour	0.743	0.775	0.713	0.791	0.770	0.481	0.730	0.685	**0.805**	
10	Food Hygiene	0.563	0.616	0.639	0.598	0.558	0.397	0.653	0.453	0.736	**0.719**

Notes for the Table:
***The bold values in the diagonal rows shows the square root of AVE. The researcher removed the correlation (1) and replaced it with the square root of AVE to make the comparison process easier for the reader.**
**** Discriminant validity issue between Food Hygiene and Environmental Hygiene.**

From Table 4.54, the discriminant validity of the variables is achieved. All values of the square root of AVE are higher than the correlations between the variables, except for Food Hygiene, where the value of the square root of AVE is 0.719, while the correlation between environmental hygiene and food hygiene is 0.736. The difference is 0.017 (i.e., 0.736 - 0.719). Thus, the shared variance between the two constructs explains more of the variance than each variable alone, which might pose a problem with whether the items comprising each factor represent the construct they intend to measure.

Thus, the correlations between the Environmental Hygiene and Food Hygiene items were studied, and the highly correlated item was removed to decrease the correlation value (see the Appendix). Accordingly, EH1 was removed since it shows a high correlation with food hygiene items, and the validity issue was solved (Table 4.55). CR and AVE were calculated after removing EH1, and the results show acceptable values.

Although the correlations were done after the factor analysis, however a revisiting for the factor analysis is necessary to resolve the issue that appeared when studying the square root of AVE.

Table 4.555: Factors, Correlations, and Discriminant Validity (Trial 2)

		CR	**AVE**	1	2	3	4	5	6	7	8	9	10
1	**Personal Hygiene**	0.886	0.722	***0.849***									
2	**Reaction**	0.956	0.731	0.549	***0.855***								
3	**Learning, Behaviour, and Result**	0.908	0.715	0.594	0.737	***0.845***							
4	**Food Safety Attitude**	0.949	0.700	0.752	0.774	0.628	***0.836***						
5	**Normative Commitment**	0.915	0.644	0.651	0.719	0.640	0.751	***0.802***					
6	**Continuance Commitment**	0.864	0.562	0.359	0.549	0.413	0.453	0.617	***0.750***				
7	**Affective Commitment**	0.868	0.691	0.559	0.699	0.678	0.774	0.724	0.516	***0.831***			
8	**Employee Faith**	0.916	0.647	0.551	0.597	0.519	0.690	0.787	0.599	0.685	***0.804***		
9	**Environmental Hygiene**	0.929	0.651	0.747	0.780	0.706	0.789	0.777	0.485	0.730	0.710	***0.807***	
10	**Food Hygiene**	0.755	0.517	0.562	0.614	0.638	0.597	0.556	0.396	0.651	0.452	0.717	***0.719***

Notes for the Table:
***The bold values in the diagonal rows show the square root of AVE. The researcher removed the correlation (1) and replaced it with the square root of AVE to make the comparison process easier for the reader.**

Table 4.55 shows that the square root of the AVE for each item is higher than the correlation between items, proving that the variance explained by each construct is greater than the variance shared between the constructs (Hair et al., 2010a).

4.11 Descriptive Analysis

As a measure of central tendency, the mean provides a general picture of the data (Sekaran and Bougie, 2019). It presents a summary of the answers provided by respondents for each item factor and variable. It is a measure of dispersion, which provides an index of spread or variability in the data (Sekaran and Bougie, 2019). Data points with large (small) standard deviation values are distant (close) from (to) the mean. Accordingly, a mean with smaller standard deviation values is more reliable (McHugh and Hudson-Barr, 2003). The study employed the following formula to define a classification of the mean values for each item (Sabaneh, 2010):

Length of the class = (Maximum possible value in the scale – Minimum possible value in scale) / number of the scale points.

Thus, for a five-point Likert scale, the length of the class is 5-1/4=0.8. Table 4.56 shows the classified criteria of 'very low, low, medium, high, and very high' per scale.

Table 4.56: Interpretation Criteria for the Variables Means

Scale average	Classification for the mean variable
1.00-1.80	Very Low
1.81-2.61	Low
2.62-3.42	Moderate
3.43-4.23	High
4.24-5.00	Very high

4.12 The Research Variables Descriptive Statistics

Table 4.57 presents the descriptive statistics of the research variables. The value was calculated by creating a summated factor, finding the average of the items from the validation process. The variables were then created by averaging the associated factors. This method was adopted from (Hair et al., 2010a).

Table 4.57: Descriptive Statistics, Research Factors, and Variables

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Training - Learning, behaviour, and result	183	1.00	5.00	4.5492	.54641	-1.865	.180	8.189	.357
Training - Reaction	183	1.00	5.00	4.5997	.51418	-2.342	.180	11.987	.357
Training Effectiveness	183	1.00	5.00	4.5745	.49522	-2.441	.180	13.523	.357
Food Safety Attitude	183	1.00	5.00	4.6571	.50333	-2.982	.180	16.385	.357
Commitment - Normative	183	1.00	5.00	4.5792	.52351	-2.088	.180	10.392	.357
Commitment - Continuance	183	1.80	5.00	4.3366	.61691	-.912	.180	1.089	.357
Commitment - Affective	183	1.00	5.00	4.5155	.59164	-1.711	.180	6.144	.357
Commitment	183	1.27	5.00	4.4771	.47599	-1.889	.180	10.146	.357
Employees Trust Faith (Peers + Managers)	183	1.00	5.00	4.4299	.56243	-1.536	.180	6.409	.357
Environmental Hygiene	183	1.00	5.00	4.6462	.50152	-2.776	.180	14.607	.357
Personal Hygiene	183	1.00	5.00	4.7623	.48908	-3.671	.180	20.729	.357
Food Hygiene	183	1.00	5.00	4.3579	.61430	-1.387	.180	4.452	.357
Food Safety Behaviour	183	1.00	5.00	4.5888	.46019	-3.169	.180	19.953	.357

From Table 4.57, the factors have high mean scores, indicating a positive attitude of respondents toward the research factors. Additionally, the standard deviation values are less than 1; thus, the values are close to the mean.

Skewness and Kurtosis tests were used for the normality of the factors and variables. The skewness value shows the distribution symmetry, while Kurtosis provides information on 'peakedness'. The skewness values are between -0.912 to -3.671. The negative value shows that the data distribution is skewed to the right, indicating the clustering of scores at the high end toward high values. However, Kurtosis values are positive values, ranging from 1.089 to 19.953. The acceptable values to consider the distribution normal are -+3 for each test. However, according to Tabachnick and Fidell (2001), large samples reduces the skewness and Kkrtosis risks. The P-P plot for the factors was produced to examine the normality to confirm the skewness and kurtosis value (Garson, 2012). The P-P plot plots the cumulative factor proportions against the cumulative proportion of the test distribution; the straighter the line by the P-P plot, the closer the data to the distribution. The Q-Q plot shows a 45-degree line that shows how well observed values match the hypothetical distribution (Garson, 2012, pp.22). Figures 4.7 and 4.8 present the P-P and Q-Q plots of the dependent variable (Food Safety Behaviour); the Appendix presents the rest of the plots.

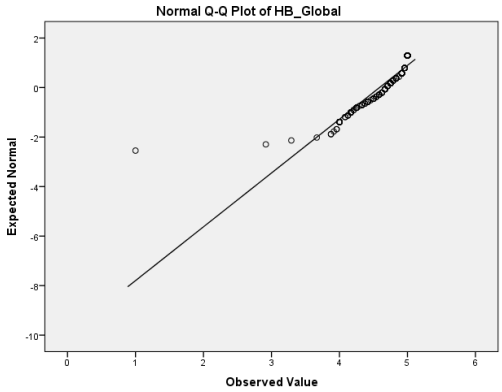


Figure 4.7: Normal Q-Q plot for the dependent variable

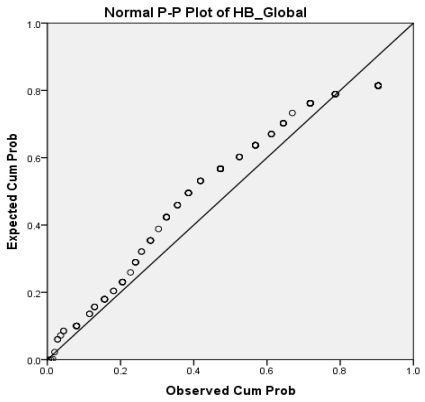


Figure 4.8: Normal P-P plot of the dependent variable

From the figures, P-P and Q-Q plots show that the distribution is almost normal. Hence, further analysis in testing the hypotheses can proceed.

4.13 Research Items Descriptive Statistics

Descriptive statistics of the research items were produced to provide further insight into the results. The following sections present hypotheses testing items along with their descriptive statistics.

4.13.1 Training Effectiveness

Table 4.58 furnishes the mean and the standard deviation for the training effectiveness factors.

Table 4.58: Mean and standard deviation for Training Effectiveness

	Min	Max	Mean	Std. Deviation	Classification
Reaction			4.6450	.53248	Very high
R1:I am satisfied with my training in food safety overall.	1	5	4.55	.635	
R2: I think effective training can be used in my business.	1	5	4.68	.545	Very high
R3: The food safety courses cover the right proficiency level, which is needed in my business	1	5	4.61	.600	Very high
R4: Food safety training addresses the needs of my business.	1	5	4.56	.598	Very high

Learn, Behaviour, and Results			4.5289	.53476	Very high
L3: I think the food safety behaviour training course increases my ability to learn.	1	5	4.55	.684	Very high
B2: I believe that there are noticeable changes in my performance after Training	1	5	4.52	.619	Very high
RS3: I think the training programmes reduced any skill gaps in my business.	1	5	4.51	.637	Very high
B5: I think the work environment will help me to use what I have learned.	1	5	4.57	.606	Very high
RS1: I believe that I performed better after training.	1	5	4.56	.580	Very high
RS2: I believe I now make fewer errors than I did before training, and I solve problems more quickly and efficiently	1	5	4.58	.614	Very high
B4: I felt supported and motivated to use the new skills that I have learned in my business.	1	5	4.56	.659	Very high
RS4: I think the training helped me to reach my goals	1	5	4.54	.609	Very high

From Table 4.58, all items have high mean values and small standard deviations. Thus, the respondents have a strong positive attitude toward the training effectiveness items. The grand means of the factors are **4.6450** for reaction and **4.5289** for learning, behaviour, and results. 'I think effective training can be used in my business' has the highest mean for reaction items. 'I believe I now make fewer errors than I did before training, and I solve problems more quickly and efficiently' has the highest mean score for learning, behaviour, and results.

4.13.2 Food Safety Attitude

Table 4.59 furnishes the mean and the standard deviation for the Food Safety Behaviour.

Table 4.59: Mean and standard deviation for Food Safety Attitude

	Minimum	**Maximum**	**Mean**	**Std. Deviation**	**Classification**
Food Safety Attitude			4.6571	.50333	
FSA4: I think employers should train staff on personal hygiene regularly	1	5	4.66	.579	Very high
FSA5: Food handlers should not come to work when sick.	1	5	4.67	.613	Very high

FSA8: I believe proper food storage is crucial to food safety.	1	5	4.68	.533	Very high
FSA9: Knowing the temperature danger zone is vital to reduce food safety risks.	1	5	4.63	.623	Very high
FSA13: I believe that preparing safe food takes precedence over preparing tasty food.	1	5	4.66	.571	Very high
FSA2: I believe food safety knowledge is important to me.	1	5	4.67	.605	Very high
FSA3:I think participating in food safety training will benefit my food safety and food-handling knowledge.	1	5	4.66	.561	Very high
FSA10: Defrosted foods should not be frozen more than once.	1	5	4.63	.595	Very high

From Table 4.59, all items have high mean values and small standard deviations, indicating that the respondents have a strong positive attitude toward the food safety attitude items. The grand mean is 4.6571. 'I believe proper food storage is crucial to food safety' has the highest mean score among the items.

4.13.3 Commitment

Table 4.60 furnishes the mean and standard deviation for Commitment.

Table 4.60: Mean and standard deviation for Commitment

	Minimum	**Maximum**	**Mean**	**Std. Deviation**	**Classification**
Normative Commitment			4.1306	.50741	
Norm2: I do not believe that a person must always be loyal to his or her home-based business.	1	5	4.69	.569	Very high
Norm3: Jumping from home-based business to home-based business does not seem at all unethical to me.	1	5	4.61	.563	Very high
Norm4: One of the major reasons I continue to work for this home-based business is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain	1	5	4.64	.565	Very high
Norm5: If I got another offer for a better job elsewhere, I would not feel it was right to leave my home-based business.	1	5	4.44	.809	Very high
Norm6: I was taught to believe in the value of remaining loyal to one home-based business	1	5	4.55	.626	Very high
Norm7: Things were better in the days when people stayed with one home-based business for most of their careers.	1	5	4.55	.643	Very high

Continuance Commitment			4.337	.61691	
Con1: I like my home-based business	1	5	4.38	.745	Very high
Con4: It would not be too costly for me to leave my home-based business now	2	5	4.28	.801	Very high
Con5: Right now, staying with my home-based business is a matter of necessity as much as desire.	1	5	4.42	.735	Very high
Con6: One of the few serious consequences of leaving this home-based business would be the scarcity of available alternatives	1	5	4.27	.779	Very high
Con7: Too much in my life would be disrupted if I decided I wanted to leave my home-based business now	1	5	4.34	.774	Very high
Affective Commitment			4.515	.59164	
AFF1: I would be happy to spend the rest of my career on this home-based business.	1	5	4.47	.762	Very high
AFF2: I enjoy discussing my home-based business with people outside it	1	5	4.54	.627	Very high
AFF3: I really feel as if the problems of this home-based business are my own.	1	5	4.54	.609	Very high

From Table 4.60, all items have high mean values and small standard deviations. Therefore, the respondents have a strong positive attitude toward the commitment items. The grand mean for Normative Commitment is 4.1306. 'I do not believe that a person must always be loyal to his or her [HBB]' has the highest mean score among the Normative Commitment items. The grand mean for Continuance Commitment was 4.337. 'Right now, staying with my [HBB] is a matter of necessity as much as desire' has the highest mean score among Continuance Commitment items. The grand mean for Affective Commitment is 4.515. 'I enjoy discussing my [HBB] with people outside it' and 'I really feel as if the problems of this [HBB] are my own' have the highest mean scores among Affective Commitment items.

4.13.4 Employee Trust

Table 4.61 furnishes the mean and standard deviation for Employee Trust.

Table 4.61: Mean and standard deviation for Employee Trust

	Minimum	Maximum	Mean	Std. Deviation	Classification
Employee Trust			4.4299	.56243	
FP1: If I got into difficulties at work, I know my colleagues would try and help me out.	1	5	4.44	.684	Very high
FP2: I could trust the people I work with to lend me a hand if I needed it.	1	5	4.41	.664	Very high
FP3: Most of my colleagues can be relied upon to do as they say they will do.	1	5	4.45	.599	Very high
FM1: Management at my firm is sincere in its attempts to meet the employees' point of view.	1	5	4.40	.687	Very high
FM2: I feel quite confident that the firm will always try to treat me fairly.	1	5	4.39	.694	Very high
FM3: Our management would be quite prepared to gain an advantage by deceiving the employees.	1	5	4.49	.670	Very high

From Table 4.61, all items have high mean values and small standard deviations. Thus, the respondents have a strong positive attitude toward the employee trust items. The grand mean for employee faith is 4.4299. 'Our management would be quite prepared to gain an advantage by deceiving the employees' has the highest mean score for an item.

4.13.5 Food Safety Behaviour

Table 4.62 furnishes the mean and standard deviation for Food Safety Behaviour.

Table 4.62: Mean and standard deviation for Food Safety Behaviour

	Minimum	Maximum	Mean	Std. Deviation	Classification
Food Safety Behaviour			4.5888	.46019	
Environmental Hygiene behaviour			4.6462	.50152	
EH2: I screen all windows and vents for pests and verify if there are gaps and cracks in walls and ceilings every day in my business.	1	5	4.60	.638	Very high
EH4: I believe in safely cleaning and sanitising equipment and utensils	1	5	4.66	.599	Very high

before storing them in the shelving unit.					
EH5: I believe in verifying that the plumbing system is installed well and maintained properly in my business.	1	5	4.63	.622	Very high
EH6: I check that the equipment and facilities work well and maintain them properly in my business.	1	5	4.67	.558	Very high
EH7: I believe in verifying that heat and water vapour in the kitchen are removed immediately through a hood exhaust system, and I maintain it properly.	1	5	4.58	.673	Very high
EH8:I believe in verifying that the illumination of the working area is appropriate and managed properly in my business.	1	5	4.63	.596	Very high
EH9: I believe it is important to clean and maintain the toilet facilities regularly.	1	5	4.72	.531	Very high
Personal Hygiene behaviour			4.7623	.48908	Very high
PH1: I check my self-health condition and personal hygiene practices (fever, diarrhoea, and injury) every day before starting the working day in my business.	1	5	4.69	.599	Very high
PH4: In my business, I wash my hands when returning from the toilet, after preparing raw meats, and before preparing ready-to-eat foods.	1	5	4.77	.588	Very high
PH5: I cover small cuts on my fingers with plaster before I start my work.	1	5	4.80	.542	Very high
Food Hygiene behaviour			4.3579	.61430	Very high
FH3: I check the temperature of the refrigerators and freezers in my business every four hours.	1	5	4.17	.891	Very high
FH8: I cook the food immediately after it has thawed and does not continue to store it in the refrigerator.	1	5	4.23	.969	Very high
FH9: I think washing and sanitising fresh vegetables and fruits before use is important.	1	5	4.51	.755	Very high

From Table 4.62, all items have high mean values and small standard deviations, indicating that the respondents have a strong positive attitude toward the Food Safety behaviour items. The grand mean for Environmental Hygiene behaviour is 4.5888. The item with the highest mean score for this scale is 'I believe it is important to clean and maintain the toilet facilities regularly'. The grand mean for Personal Hygiene behaviour is 4.7623. Among its items, 'I cover small cuts on my fingers with a plaster before I start my work' has the highest mean score. The grand mean for Food Hygiene behaviour is 4.3579, the highest mean score for this scale being 'I think the washing and sanitising fresh vegetables and fruits before use is important'.

4.14 Correlations

Table 4.63 presents the correlations between the research factors and variables created after validation. The correlations are slightly different from those calculated previously for discriminant validity purposes, such as the correlation produced by the CFA analysis. Table 4.63 presents the person correlation for the factors and global variables created by calculating the mean of the items. This method tests the correlation of the factors and variables used to test the hypotheses.

Table 4.63: Person Correlations

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Training Effectiveness	1												
2	T_ Results	.938**	1											
3	T_ Reaction learning and behaviour	.930**	.744**	1										
4	Food Safety Attitude	.747**	.768**	.623**	1									
5	Commitment	.731**	.718**	.646**	.693**	1								
6	Normative Commitment	.709**	.693**	.630**	.695**	.845**	1							

7	Continuance Commitment	.462**	.495**	.364**	.382**	.803**	.518**	1						
8	Affective Commitment	.655**	.602**	.622**	.658**	.828**	.614**	.437**	1					
9	Employee Trust	.599**	.598**	.519**	.678**	.739**	.752**	.543**	.551**	1				
10	Food Safety Behaviour	.774**	.739**	.704**	.777**	.699**	.708**	.421**	.622**	.639**	1			
11	Environmental behaviour	.775**	.759**	.686**	.751**	.692**	.700**	.414**	.620**	.656**	.900**	1		
12	Personal behaviour	.585**	.519**	.574**	.669**	.511**	.565**	.270**	.451**	.491**	.807**	.646**	1	
13	Food behaviour	.640**	.628**	.566**	.601**	.600**	.569**	.394**	.534**	.510**	.870**	.691**	.490**	1
	**. Correlation is significant at the 0.01 level (2-tailed).													

Table 4.63 shows a significant correlation between the variables, and this step is important to prove the linearity assumption for regression. The dependent variable, Food Safety Behaviour, correlates significantly with all research variables. Training Effectiveness has the higher correlation ($r = .640$, $p < 0.001$), followed by Training Factor ($r = 0.640$, $p < 0.001$) and Commitment, which correlates significantly with Food Safety Behaviour ($r = 0.601$, $p < 0.001$).

4.15 Hypotheses Testing

Hypothesis testing is determining whether a specific hypothesis is a reasonable statement (Lind et al., 2012). Regression analysis was used to examine the relationship between the variables to test the research hypotheses.

Below are a few concepts regarding the regression analysis and their importance:

R-value: The correlation coefficients (r) show the strength of association between two variables. Its values range from (-1) to (+1), where the sign indicates the direction of correlation (positive or negative; i.e., direct or inverse), and 0 indicates no association between the variables.

R square (R^2) value: The coefficient of determination measures the proportion of the variance in the dependent variable explained by the independent variable(s). The value of R^2 ranges from (0) to (1), where high values indicate a better explanatory power of the regression equation.

Adjusted R square (R^2) value: It is a modified version of the coefficient of determination that considers the number of independent variables and the sample size. The smaller the difference between R2 and adjusted R2, the better.

F-Value: It is the ratio between the mean regression sum of squares and the mean error sum of squares. The F-value starts from zero and above. A null hypothesis of the F-value means all regression coefficients are zeros. Thus, a significant F rejects the null hypothesis and supports that the regression coefficients are not zeros.

Regression a coefficient (B): This coefficient is expressed in units of association between the variables, where a unit increase (decrease) in X is associated with a B increase (decrease) in Y.

4.16 Revised Hypothesis

First Main Hypothesis

H1: Training effectiveness affects food safety behaviour.

Accordingly, to find the effect of Training effectiveness on Food Safety Behaviour, a simple linear regression analysis was used. Global variables were created in the previous section by finding the mean score of each factor before the mean of the related variables.

Table 4.64 shows the results of the model summary.

Table 4.64: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	0.774	0.598	0.596	0.2922	269.671	.000
Predictors: Training Effectiveness						
Dependent Variable: Food Safety behaviour						

From Table 4.64, The R-values indicate the correlation between the variables and the dependent. R for the model is 0.774, indicating a positive correlation between Training Effectiveness and Food Safety Behaviour. A good fit of the regression model is indicated by the R square coefficient of determination. Based on Hair et al. (2010), this is a measure of how much variance is explained by the independent factor. The R square in this model is 0.598; the independent variables explain 59.8% of the variance in the dependent variable. The higher values of this coefficient indicate a better explanatory regression power. The F-value represents the regression model's significance ($F=269.671$, $p<0.000$).

The adjusted R square is an indication of generalizability. Small differences between the R square and adjusted R square is required. Adjusted R square considers the number of independent variables used in the regression and sample size. The difference between the R square and the adjusted R square is 0.002.

Table 4.65 presents the simple linear regression Coefficient

Table 4.65: H1 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.301	.201		6.457	.000		

	Training Effectiveness	.719	.044	.774	16.422	.000	1.000	1.000
Predictors: Training Effectiveness								
Dependent Variable: Food Safety Behaviour								

Additionally, the unstandardized coefficient provides a measurement of how much the predictor variable affects the dependent variable. When the coefficient value of a predictor variable is large, it indicates that it significantly affects the dependent variable. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Training Effectiveness have a significant positive effect on Food Safety Behaviour (B=0.719, t=16.422, p=0.000 <0.05).

Therefore, H1 is supported.

Sub-Hypothesis One

H1.1: Reaction affects food safety behaviour.

Sub-Hypothesis Two

H1.2: Learning behaviour and results affect food safety behaviour.

A simple linear regression analysis was used to find the effect of Training Effectiveness factors on Food Safety Behaviour. Global variables were created in the previous section by finding the mean score of each factor, then finding the mean of the related variables.

Table 4.66 shows the results of the model summary.

Table 4.66: H1.1 and H 1.2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	.775	.600	.595	.29268	134.969	.000
Predictors: Reaction and Learning, Behaviour and Result						
Dependent Variable: Food Safety Behaviour						

From Table 4.66, the R-values indicate the correlation between the variables and the dependent. R for the model is 0.775, indicating a positive correlation between the Training Effectiveness factors and the Food Safety Behaviour. A regression model's goodness of fit can be measured by its R square coefficient of determination. The percentage of variance is explained by the independent variable in the dependent variable (Hair et al., 2010). According to this model, R square = 0.600, which means the independent variables explain 60% of the variance in the dependent variable. The higher values of this coefficient indicate a better explanatory power of the regression

The F-value shows that the regression model is significant ($F=134.969$, $p<0.000$).

The adjusted R square is an indication of generalizability. Small differences between the R square and adjusted R square is required. Adjusted R square considers the number of independent variables used in the regression and the sample size. The difference between the R square and the adjusted R square is 0.005.

Table 4.67 presents the multiple linear regression Coefficient

Table 4.67: H1.1 and H 1.2 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.318	.203		6.504	.000		
	Learning, Behaviour and Result	.406	.059	.482	6.830	.000	.447	2.239
	Reaction	.310	.063	.346	4.905	.000	.447	2.239
Predictors: Reaction and Learning, Behaviour and Result								
Dependent Variable: Food Safety Behaviour								

The unstandardised coefficient measures the contribution of the predictor variable to the dependent variable. A large coefficient value indicates that a unit change in this predictor variable affects the dependent variable significantly. However, multicollinearity possibilities should be eliminated before explaining the regression coefficient. The tolerance and variation inflation factor (VIF) values should be checked. Tolerance shows the amount of variability in a specific variable not explained by the other variables. Its threshold should be a minimum of 0.1. The VIF is the inverse of tolerance. VIF should be lower than 10 with a strict threshold of 4 (Garson, 2012). According to VIF and Tolerance results in Table 4.67, multicollinearity issues are not detected.

The coefficients of Reactions are shown in Table 4.67. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly**,** Reactions have a significant positive effect on Food Safety Behaviour (B=0.310, t=4.905, p=0.000 <0.05).

Therefore, H1.1 is supported.

Table 4.67 shows the coefficients of Learning, behaviour, and result. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However,

the significance is determined by the t value and sig result. Thus, Learning, Behaviour, and Result have a significant positive effect on Food Safety Behaviour (B=0.406, t=6.830, p=0.000 >0.05).

Accordingly, H1.2 is supported.

Second Main Hypothesis

H2: Food Safety Attitude affects food safety behaviour.

A simple linear regression analysis was used to find the effect of training effectiveness on Food Safety Behaviour. Global variables were created in the previous section by finding the mean score of each factor, then finding the mean of the related variables.

Table 4.68 shows the results of the model summary.

Table 4.68: H2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	.777	.604	.602	.29022	276.597	.000
Predictors: Food Safety Attitude						
Dependent Variable: Food Safety Behaviour						

From Table 4.68, The R-value indicates the correlation between the variables and the dependent. R for the model is 0.777, showing a positive correlation between Attitude and Food Safety Behaviour. An R square coefficient of determination is a measure of the goodness of fit of a regression model. In Hair et al., 2010b, it is the percentage of variance explained by the independent variable in the dependent variable. In this model, R square=0.604; therefore, independent variables explain 60.4% of the variance in the dependent variable. The higher

coefficient values indicate a better explanatory power of the regression. The F-value shows that the regression model is significant (F=276.597, p<0.000).

The adjusted R square is an indication of generalizability. Small differences between the R square and the adjusted R square is required. Adjusted R square considers the number of independent variables used in the regression and the sample size. The difference between the R square and the adjusted R square is 0.002.

Table 4.69 presents the simple linear regression coefficient

Table 4.69: H2 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.278	.200		6.385	.000		
	FSA	.711	.043	.777	16.631	.000	1.000	1.000
Predictors: Food Safety Attitude (FSA)								
Dependent Variable: Food Safety Behaviour								

The unstandardised coefficient measures the contribution of the predictor variable to the dependent variable. A large coefficient value indicates that a unit change in this predictor variable affects the dependent variable significantly.

Table 4.69 shows the coefficients of Food Safety Attitude. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Food Safety Attitudes has a significant positive effect on Food Safety Behaviour (B=0.711, t=16.631, p=0.000 <0.05).

Therefore, H2 is supported.

Third Main Hypothesis

H3: Commitment affects food safety behaviour

A simple linear regression analysis was used to ascertain the effect of commitment on Food Safety Behaviour. Global variables were created in the previous section by finding the mean score of each factor, then finding the mean of the related variables.

Table 4.70 shows the results of the model summary.

Table 4.70: H3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	.699	.489	.486	.32984	173.271	.000
Predictors: Commitment						
Dependent Variable: Food Safety Behaviour						

From Table 4.70, The R-values indicate the correlation between the variables and the dependent. R for the model is 0.699, indicating a positive correlation between Training Effectiveness and Food Safety Behaviour. A regression model's R square coefficient of determination provides information about how well it fits the data. The proportion of variance in the dependent variable can be explained by the independent variable (Hair et al., 2010). In this model, R square=0.489; thus, the independent variables explain 48.9% of the variance of the dependent variable. The higher values of this coefficient indicate a better explanatory power of the regression. The F-value shows that the regression model is significant ($F=173.271$, $p=0.000 < 0.05$).

The adjusted R square is an indication of generalizability. Small differences between the R square and the adjusted R square is required. Adjusted R square considers the number of independent

variables used in the regression and the sample size. The difference between the R square and adjusted R square is 0.003.

Table 4.70 presents the simple linear regression coefficient

Table 4.71: H3 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.562	.231		6.753	.000		
	Commitment	.676	.051	.699	13.163	.000	1.000	1.000
Predictors: Commitment								
Dependent Variable: Food Safety Behaviour								

Table 4.71 shows the coefficients of Commitment. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Commitments have a significant positive effect on Food Safety Behaviour (B=0.676, t=13.163, p=0.000 <0.05).

Therefore, H3 is supported.

Sub-Hypothesis Three

H3.1: Affective affects food safety behaviour.

Sub-Hypothesis Two

H3.2: Continuance affects food safety behaviour.

Sub-Hypothesis Three

H3.3: Normative affects food safety behaviour.

Multiple linear regression analysis was used to find the effect of commitment factors (affective, continuance, and normative) on Food Safety Behaviour. Global variables were created in the previous section by finding the mean score of each factor, then finding the mean of the related variables. Table 4.72 shows the results of the model summary.

Table 4.72: H3.1, H3.2, and H3.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	.747	.558	.550	.30858	75.261	.000
Predictors: Affective, Continuance and Normative Commitment						
Dependent Variable: Food Safety Behaviour						

From Table 4.72, the R-values indicate the correlation between the variables and the dependent. The R for the model is 0.747, indicating a positive correlation between Employees commitment and Food Safety Behaviour. According to the R square coefficient of determination, the regression model fits the data well. Hair et al., 2010b, refers to the percentage of variance in the dependent variable explained by the independent variable. Therefore, the independent variables explain 55.8% of the variance in the dependent variable in this model. The higher coefficient values indicate a better explanatory power of the regression. The F-value shows that the regression model is significant ($F=75.261$, $p=0.000 < 0.05$).

The adjusted R square is an indication of generalizability. Small differences between the R square and adjusted R square is required. The adjusted R square considers the number of independent variables used in the regression and the sample size. The difference between the R square and the adjusted R square is 0.008.

Table 4.73 presents the multiple linear regression coefficients.

Table 4.73: H3.1, H3.2, and H3.3 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.402	.219		6.399	.000		
	Affective	.231	.050	.296	4.632	.000	.603	1.658
	Continuance	.020	.044	.027	.452	.652	.709	1.411
	Normative	.450	.059	.512	7.602	.000	.546	1.833
Predictors: Affective, Continuance and Normative Commitment								
Dependent Variable: Food Safety Behaviour								

Table 4.73 shows the coefficients of affective commitment. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Affective Commitment has a significant positive effect on Food Safety Behaviour, B=0.231, t=4.632, p=0.000 <0.05.

Therefore, H3.1 is supported.

Table 4.73 shows the coefficients of Continuance Commitment. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Continuance Commitment does not affect Food Safety Behaviour significantly (B=0.020, t=.452, p=.652 > 0.05).

Therefore, H3.2 is unsupported.

Table 4.73 shows the coefficients of Normative Commitment. The unstandardised coefficient shows that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Normative Commitments have a positive significant effect on Food Safety Behaviour (B=0.450, t= 7.602, p= 0.000< 0.05).

Therefore, H3.3 is supported.

Fourth Main Hypothesis

H4: There is an effect of employees trust on food safety behaviour.

A simple linear regression analysis was used to find the effect of Employee Trust on Food Safety Behaviour Global variables were created in the previous section by finding the mean score of each factor, then finding the mean of the related variables.

Table 4.74 shows the results of the model summary.

Table 4.74: H4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	ANOVA Statistics	
					F	Sig.
	.639	.408	.405	.35498	124.866	.000
Predictors: Employees Trust						
Dependent Variable: Food Safety Behaviour						

From Table 4.74, The R-value indicates the correlation between the variables and the dependent. R for the model is 0.639, indicating a positive correlation between Employee Trust and Food Safety Behaviour. R square coefficient of determination is a measure of a regression model's goodness of fit. According to Hair et al., 2010b, it indicates how much variance in a dependent variable is explained by an independent variable. R square = 0.408, so the independent variables explain 40.8% of the variance in the dependent variable. The higher values of this coefficient indicate a better explanatory power of the regression. The F-value shows that the regression model is significant ($F=124.866$, $p<0.000$).

The adjusted R square is an indication of generalizability. A small difference between the R square and the adjusted R square is required. Adjusted R square considers the number of independent variables used in the regression and the sample size. The difference between the R square and the adjusted R square is 0.003.

Table 4.75 presents the simple linear regression coefficient

Table 4.75: H4 Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.273	.209		10.880	.000		
	Faith	.523	.047	.639	11.174	.000	1.000	1.000
Predictors: Employees Trust								
Dependent Variable: Food Safety Behaviour								

The unstandardised coefficient measures the contribution of the predictor variable to the dependent variable. A large coefficient value indicates that a unit change in this predictor variable affects the dependent variable significantly. The unstandardised coefficients show that a one-point change in x is explained as a B point change in Y. However, the significance of this effect is determined by the t value and sig result. Accordingly, Employee Trust has a significant positive effect on Food Safety Behaviour (B=0.523, t=11.174, p=0.000 <0.05).

Therefore, H4 is supported.

4.17 Summary

This chapter analysed the research data to test the research hypotheses. It started with screening the data and detecting and removing outliers using the Mahalanabis distance method, resulting in 183 valid responses. Since the questionnaire was self-reported, Harman's single factor method was

used to eliminate common method variance; the test revealed no CMV issue. The demographic information was analysed to glean the sample characteristics. The analysis relied on frequency and percentages and revealed that most of the sample were female, above age 30, and held a university degree.

Validity and reliability tests were then conducted. The researcher started with EFA analysis and confirmed the findings using CFA models. The validity test revealed that the dependent variables Training Effectiveness comprises two factors (reaction and learning, behaviour and results), Food Safety Attitude has one factor, commitment has three (normative, affective, and continuance), and Trust has a single factor (faith in peers and management). The dependent Food Safety Behaviour have three factors (food, personal, and environmental hygiene). Variables and global variables were created based on the validity results. The variables were analysed to find the mean and standard deviation and the skewness and kurtosis values. Finally, the study invested the Pearson correlations between the variables.

The hypotheses testing was conducted using simple and multiple regression analyses, where the regression model showed a good fit, and the independent variables explain a good percentage of the variance in the dependents. All hypotheses were supported except for H3.2.

Chapter Five: Discussion and Conclusions

Throughout this chapter, the findings of the research are summarized and explained. Additionally, it presented the discussion of the research hypotheses separately. Key findings were presented and then compared with the existing literature. The implications, limitations, and potential future directions of the current research are also discussed.

5.1 Summary of Key Findings

An analysis of the data was performed using IBM SPSS Statistics and SPSS AMOS (version 23.0). In order to determine the validity and reliability of the scales, a series of preliminary statistical analyses were performed. Hypotheses about the relationship between the variables were tested. In order to identify predictor variables associated with dependent variables, Pearson's correlation coefficient *(r)* was used. The effect of independent variables on dependent variables was evaluated using regression analysis. Multiple regression analysis was employed to probe and predict customer food safety behaviour based on employee training effectiveness, food safety attitudes, employee commitment, and employee trust.

The hypotheses review revealed that the employees who received training evaluations were more committed to their job in best practices of food safety and performed their jobs better than those who had little training evaluations. Moreover, employees' positive attitudes toward food safety can enhance their food safety behaviour and customer relationships. Further, employees with high trust are more likely to exhibit food safety behaviour and satisfy their customers, and participants with a high commitment are more likely to exhibit food safety behaviour and have good customer relationships. The complete discussion of the revised hypotheses is presented in the following section.

5.2 Discussions and Interpretations of the Research Hypotheses

This study and the literature on food safety and handling show that food safety has increasingly become a concern. Thus, the World Health Organisation and Food and Agriculture Organisation have established appropriate guidelines for handling food to enhance food hygiene and avoid contamination, which can pose threats to health (Hair et al., 2010b). The study shows that the UAE and countries worldwide have made key considerations on food safety regulations, policies, and initiatives essential for health and wellbeing (Peivasteh-Roudsari et al., 2019). These initiatives are among the reasons for the focus on enhancing effectiveness, attitudes, trust, and commitment.

This study establishes the effect of training effectiveness, attitude, commitment, and employee trust on food safety behaviour in HBBs. This section discusses and interprets the study hypotheses. Table 5.1 shows the summary of the hypotheses test results.

Table 5.1: Hypotheses Test Results

Hypotheses	**Results**
H1: Training effectiveness affects food safety behaviour	**Supported**
• H1.1: Reaction affects food safety behaviour.	**Supported**
• H1.2: Learning behaviour and Results affect food safety behaviour	**Supported**
H2: Food Safety Attitude affects food safety behaviour.	**Supported**
H3: Commitment affects food safety behaviour.	**Supported**
• H3.1: Affective commitment affects food safety behaviour.	**Supported**
• H3.2: Continuance commitment affects food safety behaviour.	**Unsupported**
• H3.3: Normative commitment affects food safety behaviour.	**Supported**
H4: Employee Faith affects food safety behaviour.	**Supported**

H1: Training Effectiveness affects Food Safety Behaviour

From the AMOS analysis results (B=0.719, t=16.422, p=0.000 <0.05), training effectiveness has a significant positive effect on food safety behaviour. Essentially, training effectiveness enhances the knowledge of food handlers in prioritising safety requirements in their daily practice (Harrison et al., 2016). Thus, companies must conduct some initial training for their employees before handling food to avoid the spread of bacteria. Training effectiveness can help employees work on existing problems and strengthen the safety and quality HBBs require (Desmarchelier, 2014). Throughout the production process, operations overseers are confident that the employees perform their job roles as trained. Concerning the current study and synthesised literature, it is essential that in-house food safety training is conducted, as training in context is more effective than training away from the context or working environment (Harrison et al., 2016).

The results accord with prior findings (Lee et al., 2017, Jubayer et al., 2020, Adesokan and Raji, 2014), such as Malavi et al. (2021), who noted that poor food-handling practices are a leading cause of foodborne diseases. They note that food handler training is a major step in ensuring food safety behaviour among food handlers. The training of food handlers relative to a controlled group deprived of training revealed positive results. However, organisations must implement mandatory food handler training programmes to improve food safety behaviour to correct common mistakes regarding employee behaviours (Adesokan and Raji, 2014). Building good habits in behaviour is a step towards reducing illnesses associated with eating contaminated foods (Evans et al., 2020).

Sub-Hypothesis One

H1.1: Reaction affects food safety behaviour.

The results of H1.1 (B=0.310, t=4.905, p=0.000 <0.05) shows that reactions to the training programme have a significant positive effect on food safety behaviour, supporting H1. Thus,

employees with a positive reaction towards training more likely comply with food safety rules-regulations and enhance their hygienic behaviour.

This finding accords with prior studies (Abdelhakim et al., 2018, Kodwani and Prashar, 2019, Neal and Sirsat, 2015, Salisu, 2020). Per Ben Mansour et al. (2017), an employer must provide relevant and meaningful training (reaction) to employees. Salisu (2020) report that supervisors could assess employee effectiveness by conducting post-training interviews and assessing workplace food safety behaviours. Moreover, in the relationship between trainees' motivation to learn and training effectiveness, trainees' reaction to training moderates the relationship, as per Neal et al. (2011). However, Kodwani and Prashar (2019) claim that although negative reactions to training often impact an organisation or department negatively, trainees' response from a pragmatic perspective remains critical. Positive reactions do not guarantee organisational support, but negative responses can adversely affect that department. Thus, HBBs in the UAE must evaluate their employees to prevent negative reactions toward the training programmes.

Sub-Hypothesis Two

H1.2: Learning, behaviour, and results affect food safety behaviour.

The results of H1.2 (B=0.406, t=6.830, p=0.000 >0.05) shows that Learning, Behaviour, and Result have a significant positive effect on Hygiene behaviour. Overall, learning behaviour directly impacts the outcome of food safety. According to Kirkpatrick's second level assessment, there were significant differences in learning between participants before and after the training. Thus, the results suggest that increased employee learning and acquired skills and knowledge increase employee compliance with food safety practices.

Moreover, the employee behaviour of translating what has been acquired and learned positively influences their ability to respond to food safety practices requirements. Ultimately, the outcome of training programmes results in better food safety practices for better performance for UAE HBBs.

The finding accords with prior relevant studies. For instance, Ben Mansour et al. (2017) examines the extent of improvement of food safety after learning and before learning, where employees who underwent the learning process improved their food safety behaviour relative to the controlled group that did not receive any training. Therefore, the learning behaviour effect on food safety behaviour may differ. Additionally, the findings agree with Park et al. (2010). According to their evaluation, cabin crew food safety training was ineffective in some areas, including the amount of learning that was achieved and the extent to which behaviour changed. The findings also accord with Abdelhakim et al. (2018), where having active learning methods added to the training programme resulted in a positive reaction from the subjects, higher exam scores on the food safety knowledge exam, enhanced workplace behaviour, and improved overall training programme effectiveness.

Therefore, food outlets must embrace effective employee training to offer clean and safe food to customers.

Second Main Hypothesis

H2: Attitude affects food safety behaviour.

The results of H2 shows that (B=0.711, t=16.631, p=0.000 <0.05) Food Safety Attitude has a significant positive effect on food safety behaviour, which supports the hypothesis.

Attitudes regarding food safety behaviour are essential to consider as those attitudes encompass issues such as dedication to good practice and work commitment (Gavin, 2016). The food-handling philosophy is vital because it determines their behaviour and commitment to training elements. This study identifies that auditing HBBs should be regular to ensure they adhere to the excellent recommended behaviour (Desmarchelier, 2014). The emphasis on training motivates employees to dedicate their efforts and skills to safe habits and behaviour as food handlers. Anglim et al. (2019) assert that it is essential to avoid cross-contamination. The only way to achieve this is by enhancing the work cooperation between the employees and their organisations via employee trust.

As per Griffith et al. (2010), attitude as a hypothetical construct variable has a positive relationship with safety behaviours. Umar (2020) notes that attitude is an element of emotional, informational, and behavioural impact safety behaviour because individuals with a positive attitude towards food safety behaviour are more likely to maintain high hygiene than those with a negative behaviour on food safety behaviour. Muhammad et al. (2010) and Lin and Roberts (2020) found that food handler attitudes toward food safety have a significant impact on reducing foodborne illness. As a result, positive behavior and attitudes regarding food handling are closely related. Hence, this study strongly accords with prior studies advocating that UAE HBBs should promote a positive attitude of their employees.

Third Main Hypothesis

H3: Employee commitment positively affects food safety behaviour in HBBs

From the H3 results (B=0.676, t=13.163, p=0.000 <0.05), affective and continuance commitment are essential to food safety behaviour among the three commitment types, though the continuance commitment hypothesis was rejected. Regarding food hygiene, it is essential to note the definition

of each term. Affective commitment is employees' values, attitudes, beliefs, and expectations towards the organisation that affect their performance and behaviour. Normative commitment relates to how much employees feel they should stay at their organisation. Thus, these two commitments are essential factors in determining food safety behaviour. Contrary to this, continuance commitment is not significant since employees do not have an interest in remaining with their current organizations.

Prior studies support that worker commitment affects general performance. For instance, Howes et al. (1996) note that an effective food safety execution framework can be accomplished through improving food controller responsibilities. Thus, it is possible to maintain high food hygiene if supervisors can impact the conduct of employees by establishing a persuasive working environment. Others indicate that employee commitment affects organisational performance (Azeem and Akhtar, 2014, Minwalkulet, 2019). If businesses are unified in the way they think about food safety, commitment through direct participation, action, and beliefs about food safety improves food hygiene (Taha et al., 2020a).

Sub-Hypothesis Three

H3.1: Affective commitment positively affects food safety behaviour in UAE HBBs.

The results for H3.1 (B=0.231, t=4.632, p=0.000 <0.05) show that Affective Commitment has a significant positive effect on food safety behaviour. Affective commitment is the feeling of strong emotional attachment to an individual's work. An individual is most likely to be identified with the work or the organisation's goals and values and, therefore, genuinely does what is right (Taha et al., 2020a). If employees are satisfied with their job, they are likely to feel good and be more satisfied with their job (Bouraoui et al., 2019). In the food industry, affective commitment is

integral in meeting organisational goals. If individuals perform their duties with a high level of commitment, their enjoyment of the job will drive them to maintain proper hygiene at their workplace (Supian et al., 2018).

The findings revealed that affective commitment positively influences the food safety behaviour of employees in HBBs in the UAE. These results accord with de Andrade et al. (2020), where a restaurant food handler's level of affective commitment relates to the food safety behaviour. Similarly, Wang and Tsai (2019) have a similar claim that affective commitment can increase the employees' food safety behaviour and their perceived health benefits associated with eating food in the workplace. According to Marinova et al. (2019), affective commitment is a positive characteristic of the employee-organization relationship, which motivates employees to continue to work in their current roles.

H3.2: Continuance commitment positively affects food safety behaviour in HBBs in the UAE.

The results of H3.2 (B=0.020, t=.452, p=.652 > 0.05) showed that Continuance Commitment does not positively affect food safety behaviour, rejecting H3.2. Regarding the fear of loss (continuance commitment), individuals may choose to remain or leave the organisation. The main reason to stay is the fear of being without organisational benefits and resources. Therefore, employees are not concerned about losing benefits or resources without a Continuance Commitment. When employees do not fear losing benefits or resources, they are more likely to be willing to leave. Therefore, the relationship between food safety behaviour and continuance commitment is insignificant. This result generally accords with prior studies that find no significant association between continuance commitment and certain attitude-influencing variables (Mokhtar et al., 2021) nor the size of payment (Lau, 2011). Apparently, there is a small association between employee safety practices and continuance commitment, though the sign of that association is not significant.

Hence, engaged individuals may be tempted to leave the organisation as a sacrifice. While this effect may be slight, it may not be sufficient to increase their commitment to staying significantly.

H3.3: Normative commitment positively affects food safety behaviour in HBBs in the UAE.

The results for H3.3 (B=0.450, t= 7.602, p= 0.000< 0.05) show that Normative Commitment might have a significant positive effect on Hygiene behaviour. Thus, H3.3 is confirmed, indicating that Normative Commitment directly affects the hygiene behaviour of employees in the business and improves hygiene behaviour. Hence, a direct relationship exists between the two variables, which can be used as a predictor variable to analyse the business outcome of food safety.

Prior studies, such as Kasogela (2019) and Chau (2018), find that normative commitment was significant in affecting organisational performance, but its effect was lower than that of affective commitment. This situation may be because affective commitment is a more critical factor in predicting organisational behaviour. It is noted that the findings of previous studies conducted attained these same conclusions: affective commitment correlates strongly with absence, performance, and organizational citizenship than continuance commitment or normative commitment. Furthermore, an affective commitment was associated with the widest range of behaviors, such as helping others, working more hours, sharing information with the supervisor, and observing their behavior (Mercurio, 2015, Moussa and El Arbi, 2020).

Overall, the main hypothesis that employee commitment positively impacts employee food safety behaviour in HBBs was accepted. This finding accords with prior studies (Rafiei et al., 2014, Taha et al., 2020b). For example, Taha et al. (2020a) note that training employees and their participation without commitment would not necessarily result in positive food safety outcomes.

Therefore, by accommodating employees for effective commitment, increasing sunk costs for continuance commitments regarding employees who leave the organisation, and increasing their obligations for normative commitments, the organisation may achieve better performance results.

H4: Employee trust has a significant positive effect on food safety behaviour.

The results for H4 (B=0.523, t=11.174, p=0.000 <0.05) show that Employee trust has a significant positive effect on food safety behaviour, supporting H4. Management is key to organisational success, and most respondents believe faith in management is a key success factor. The key metrics under this variable that were confirmed include assisting one another in case of a bad or challenging day. Most respondents believe the faith intentions of the management and peers are critical to work success. They noted that they feel confident if treated fairly and can be relied upon if their perspective is heard. Unfortunately, most respondents also indicated that firms would be quite prepared to gain an advantage by deceiving employees.

A psychological state of interpersonal trust was examined in the current study and found to be associated with food safety behaviour. This study extends the knowledge of employees' behaviour in the context of food safety practices. The findings support a normative view of interpersonal trust (Taha et al., 2020b, Katz and Rotter, 1969, Bakay, 2015), providing unique implementations. The results also confirm prior findings (Leat and El-Kot, 2009, Jones et al., 2021). Researchers studying the function of interpersonal trust in organisational contexts concluded that trust enhances interpersonal relationships like no other catalyst. A person with a high level of trust in peers and managers is more committed to the organisation in conformity to organisational goals and aims (Matzler and Renzl, 2006, BAKAY, 2015, Kath et al., 2010). Thus, the findings of this study hold that employees' interpersonal trust in their peers and managers in HBBs enables compliance with the goal of businesses to achieve a high level of food safety behaviour.

5.3 Conclusion

This study examined the association among the study constructs and the effect of independent variables, such as employee training effectiveness, employee attitude, employee commitment, and employee interpersonal trust on food safety behaviours. It tested the role of employee training effectiveness, employee attitude, employee commitment, and employee interpersonal trust in their food safety behaviour. The study presented significant findings; all main study hypotheses were accepted. Thus, employee training effectiveness, employee attitude, employee commitment, and employee interpersonal trust and their factors influence food safety behaviour. The study findings have also contributed insight into food quality and safety systems and how food characteristics may change, given the application of many fundamental scientific and engineering disciplines, thereby enhancing the answers to the research questions.

From the managerial and behavioural aspects, training effectiveness greatly influences employees' adherence to improving their food safety behaviour. That is, knowing employees' reactions to training can furnish data-driven insights into how to make it more effective by measuring the quality of employee food safety knowledge and behaviour pre- and post-training. This process requires administrative efforts to capture data at all stages. Further, employee attitude significantly influences deploying the best practices of handling safety measures. Thus, workers with strong and positive attitudes are more likely to follow food safety guidelines and keep work areas cleaner. Moreover, employees are less likely to delegate food safety duties to others, given that such duties generate stressful thoughts in the workplace. Lastly, employees are likely to report incidents that may result in fines if they occur outside of work hours.

According to the study, employee commitment contributes to the implementation of safe food procedures and improves the organisation's food safety performance. The findings provide insights

into how organisations can entice employees to implement safe food practices. Firms can establish expectations for their commitment to food safety by imparting knowledge and skills through workshops or other methods so that they have the necessary ability to execute the expected duties. Companies can also implement a performance management system that measures compliance with company policies to motivate employees via rewards or punishment if needed. Given the relationship between employees' interpersonal trust (faith in peers and managers) and food safety behaviour practices, organisational culture improvements to induce trust in others and compliance with standards is necessary. Despite the hypothesis that managers are most influential in developing such behaviour types, employees who perceive their supervisors as supportive also have higher levels of interpersonal trust. If the results can be replicated, increasing employees' interpersonal trust may help reduce unsafe food-handling practices.

5.4 Study Contributions

A study can contribute conceptually/theoretically, empirically, or methodologically. We discussed the theoretical and practical contributions of our study in the next sections.

5.4.1 Practical Contribution

This study should inspire scholars to find novel ways of managing quality and safety while considering routine practices that guarantee food safety. Practically, food safety discussions help public managers develop rules and norms to protect society from food-related harm, thereby driving food outlets and the general population to comply with higher-level food safety standards. The developed norms help regulate food storage, employee training to improve food safety, and worker reactions to food safety. Companies in this industry can also use the information gleaned from this study to develop food safety practices that set them apart from the competition, thereby

setting high food safety standards for future research. Future studies present new challenges for managers, such as determining the right training techniques that an organisation should adopt to reduce food contamination prevalence.

The study contributed intensively to determine the effects of training effectiveness, attitude, the commitment of employees, and trust on food safety behaviour in HBBs. Employees can improve their food safety behaviour by attending training courses and being encouraged to trust their supervisors. The findings may help enhance confidence in supervisors, who could provide better food safety guidance and supervision in HBBs. Employees can also be encouraged to develop a positive food safety attitude. Employees could learn effective behaviour and skills that help promote a safe work environment, resulting in a better quality product or service.

5.4.2 Theoretical Contribution

Theoretically, the study identified elements of the original framework from prior studies. However, previous efforts have failed to focus on emerging issues. Thus, further studies in the area should provide fresh ideas on the topic rather than focus on prior findings. Knowledge of food safety and hygiene is aligned with employee job performance. Training can enhance job performance in specialised roles. According to the study, poor practices are associated with a lack of knowledge about pathogens in areas associated with microbiological hazards, which limits the application of quality food safety behaviour. The empirical study furnishes theories that effectively influence employee performance concerning food hygiene, safety, and overall competency and performance in microbiological food hazards and poor practices towards food safety practices. Thus, the study focused on industrial training that affects employees' attitudes and trust in the workplace (Jones et al., 2021).

5.5 Implications

Educating the public about food safety is critical and may be achieved by creating a food security strategy that includes action plans and goals to ensure employees follow food safety regulations. All grocery store employees should be well trained to help each department handle food better. Therefore, this study recommends further research on employee food safety attitudes and real-time observation methods in normal cooking to document how employees handle food in the kitchen. Face-to-face interviews should also be used to evaluate food safety knowledge and practices to improve ineffective behaviours that contribute to food contamination. More information on the research itself, not just staff reports, is necessary. Further studies should investigate food-handling cultures at different levels and compare the results to determine the issue's prevalence.

Further research is needed on how vulnerable populations are informed about food safety issues and risk mitigation measures in the UAE and beyond. Inefficient food production behaviour and incubation hazards in families need further research. Food safety should be incorporated across a company. For example, while purchasing food processing equipment, the Finance Department must understand the importance of food safety. All industry employees should be included in decision-making to ensure existing methods clearly reflect current practices. Moreover, industry management should ensure that food safety procedures are adequately standardised, including the best methods for best work to reduce the risk of human error and workplace equipment failure. The companies should also have an open communication culture that promotes food safety.

Business personnel should be well trained in food safety. Training programmes should be tailored to the particular requirements of recurrent hygiene and safety checks. Management should strive to establish a sustainable remuneration model by publicly recognising the best employees. Simple constant praise or severe but constructive criticism for misbehaviour may promote good sanitary

practices. The audit may be risk-based and include useful techniques for assessing food safety culture that focuses on risk. The audit must also involve daily inspections by internal audit teams.

Businesses must promote worker commitment via direct participation actions and employee trust in food safety. Improving employee satisfaction and positive expectations is vital in any business. Trust in the food business enhances employee engagement, increasing sales and profitability. Therefore, workers' trust may push the business to accomplish its goals and plans. Workers who trust their bosses may perform their jobs well and enthusiastically. Employee trust is therefore vital in effective working relationships. Employee trust may satisfy favourable expectations, create beneficial connections, and be taken for granted by co-workers. If the business can gain employee trust, faith in management will easily be obtainable. It is important for success. Lack of trust in an organisation inhibits creativity, induces poor decision-making, and discourages employees from cooperating. Training effectiveness, attitude, dedication, and employee trust in food safety can enhance food industry quality and safety standards, particularly for HBBs worldwide.

On social implications, the study of food safety behaviour in HBBs produces a better level of awareness among stakeholders. The study also helps produce food safety practices to attain high levels of preparedness for foodborne illness outbreaks. Studies on food safety behaviour cover much information on food safety behaviour and education. Foodborne illnesses have induced many deaths worldwide, and food safety education is a key to reducing these cases. Thus, the results of this study will be useful to stakeholders, given the information on how to reduce food poisoning incidents in HBBs.

5.6 Study Limitations

Despite the relevance of the study, it has some notable limitations. First, the sample size utilised is too small to generalise the results of the whole population. Moreover, though data was gathered using questionnaires, and values were acquired to establish the connection between the variables, the data collection via e-mails and social media focused on a particular region. Further, the study employed only primary data. It employed a co-variance-based approach to data analysis using SPSS and AMOS software that hinged on only independent and dependent variables.

The study is also limited in matters concerning food safety behaviour in domestic enterprises. The research was restricted to using comfort samples for the whole corporate community. The study does not offer a foundation for future investigation of the significant problems among vulnerable patients in homemade companies. Given the research limitations, long-term patterns should be examined via cultural impacts and attitudes toward food safety. The other main areas of concern were different cultural traditions in food preparation and how HBBs prevent hazards leakage. Consequently, insufficient understanding of training has induced a bad attitude in the workplace, affecting the employee trust in food safety behaviour at home. Knowledge of different kinds of training in behavioural diseases did not include food safety behaviours. Therefore, without the knowledge of infections and food toxicity in organisations, investigating perceptions of risk and behaviour is not possible.

Notably, the study only uses employees from the UAE to study the impact of employee attributes on food safety behaviour. Finally, it employed only quantitative data.

5.7 Future Research Directions and Recommendations

HBBs may have a bright future in food safety if they can succeed in training, attitudes, and staff commitment. The microbiological approach dominated the latter last year, as food-related illnesses reached new highs in several countries worldwide. FSM in HBBs may be examined using data from food disease outbreaks. Thus, microorganism training for workers or food managers in HBBs improves employees' attitudes and trust for better food safety practices.

Further research on foodborne disease cases will induce innovative and cutting-edge research techniques that will allow for proper food safety behaviour in the workplace. Food safety will be better integrated into the domestic organisation's culture and management systems, which include food-handling behaviour. The practical implications for food safety will highlight the limitations of current business processes, necessitating additional data gathering via a wide range of research techniques. Thus, well-defined research on food safety will be available, with more practical implications than ever, to minimise the economic and social repercussions of foodborne illnesses.

Studying employees' practical training regarding their attitudes and commitment in HBBs will encourage various food safety behaviours. For example, all employees' work habits are critical to food hygiene and safety issues. Employees require better food management to prevent foodborne disease and enhance food safety, as per microbiological theory. Future studies should consider factors that contribute to poor food safety in cities and possible remedies. Hence, the research lacks qualitative data from interviews and detailed discussion. Future research can employ a research mixed method to unlock further insight, collecting detailed perspectives on food safety behaviour. The accuracy of responses will increase if all questionnaires are filled. Thus, careful measures of collecting filled questionnaires should be used to reduce the no-response error. The triangulation of research is also not achieved from a limited scope of research and the use of one type of data.

A variance-based approach using SmartPLS or WarpPLS can be used for data analysis, as they can be used for confirmatory and exploratory studies.

Furthermore, studies on employee performance could provide evidence for managers on how best to implement successful employee training programmes. Any measures by employers require some evaluation to gauge their efficacy. Evaluation research has proven its value in examining whether specific programmes work toward improving workplace productivity. However, further research is needed to understand how effective training programmes can be developed and delivered to ensure maximum benefits for employers and employees. Given the lack of literature on employee training in the HBB sector, future research can examine how successful this business model can be when incorporating effective training practices. Research shows that working from home provides many benefits for workers and businesses alike. Therefore, there is a growing demand for HBBs and a need for employees competent in managing such environments. Future research should investigate how such skills can be taught and transferred from managers to employees while providing greater job satisfaction for both parties.

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APPENDIX 1 QUESTIONNAIRE FOR THE STUDY

Dear Respondent,

You are invited to participate in a research project on the Effect of Training Effectiveness, Attitude, Commitment, and Employee Trust on Food Safety Behaviour in Home-Based Businesses.

Along with this letter is a short questionnaire with various questions on the study. I would be grateful if you took the time to respond to the questionnaire; it should take you about 10 minutes to complete.

The results of this study will contribute to my doctoral thesis at the University of British in Dubai. Through your participation, I hope to understand the effect of training Effectiveness, Attitude, Commitment, and Employees Trust on Food Safety Behaviour in Home-Based Businesses and make the best use of these results. I hope the results of the study will help home-based businesses understand the effect of training Effectiveness, Attitude, Commitment, and Employees Trust on Food Safety Behaviour. Once the study is complete, I am interested in making the results available by publishing them in a well-known journal.

There are no risks to you or your privacy if you decide to participate in the study by filling out this questionnaire, and you are not required to put your name on the questionnaire. I promise not to share any information that identifies you with anyone outside my research group.

I hope you will take the time to complete this questionnaire and return it. Your participation is voluntary, and regardless of whether you choose to participate, please let me know if you would like a summary of my findings. To receive a summary, please write your e-mail at the end of the questionnaire.

Thank you.

Shadha Al Mualla

E-mail: Sh_almualla@hotmail.com

First Section: Demographic Profile

Gender

- □ Male
- □ Female

Age

- □ 20 – Less than 25 Years
- □ 25 – Less than 30 Years
- □ 30 – Less than 35 Years
- □ 35 – Less than 40 Years
- □ 40 Years and Above

Nationality

- □ Emiratis
- □ Others

Living area

- □ Urban
- □ Rural

Educational Level

- □ Less than high school
- □ High school graduate
- □ Some college
- □ Bachelor's degree
- □ Post graduated

Experience of Home-Based Businesses

- □ Less than 3 Years

- ☐ 3 – Less than 6 Years
- ☐ 6 – Less than 9 Years
- ☐ 9 Years and Above

Position

- ☐ Food Handler
- ☐ Assistant
- ☐ Manager
- ☐ Owner
- ☐ Other

Second Section: Questionnaire

APPENDIX 2 QUESTIONNAIRE IN ARABIC

عزيزي القارئ

أتشرف بدعوتك للمشاركة في مشروع بحث يهدف الى ‘دراسة تأثير وفعالية الدورات التدريبية في مجال سلامة الغذاء على العاملين في مشاريع الأعمال المنزلية الخاصة بالأغذية وتأثير الموقف والولاء في العمل وثقة الموظفين’. مع هذه الرسالة تم ارفاق استبيان يحتوي على عدة أسئلة مختلفة متعلقة بالبحث. ارجو منك عزيزي القارئ القاء نظرة على الاسئلة التي يحتويها هذا الاستبيان والاجابة عليها اذا رغبت بذلك، حيث أن هذا الاستبيان لن يستغرق من وقتك اكثر من 10 دقائق فقط لإكماله. كما انه لا يوجد أية خطورة عليك أو على خصوصيتك في حالة تعبئة هذا الاستبيان و لا يتوجب عليك أيضا كتابة اسمك على الاستبيان و أتعهد بعدم نشر أي معلومة قد تعرف بك لأي شخص خارج مجموعتي البحثية.

مشاركتك في هذا الدراسة سيمكنني من تحسين هذه الاستبانة لأغراض الحصول على المعلومات اللازمة لإكمال متطلبات الحصول على درجة الدكتوراة من الجامعة البريطانية في دبي. أرجو القيام بإعطاء رأيك الصريح بهذه الاستبانة من حيث الترتيب العام والأسئلة الموجودة فيها للتحقق من مدى فهم هذه الأسئلة واستيعابها من قبل القارئ.

واخيرا أتمنى عزيزي القارئ أن يكون لديك الوقت الكافي لتعبئة هذا الاستبيان، علما أن مشاركتك هي تطوعية ومهمة لي بصفتك أحد أصحاب المشاريع المنزلية، كما يرجى كتابة بريدك الالكتروني في المكان المخصص بنهاية الاستبيان لاستلام موجز عن نتائج البحث.

و شكرا ،

شذى على المعلا

الإيميل: E-mail: Sh_almualla@hotmail.com

القسم الأول:-

يرجى اختيار الإجابة المناسبة عن طريق وصع إشارة في المكان المناسب:

- **الجنس:**

1. ذكر		**2. انثى**	

- **العمر:**

1. من 20 – أقل من 25 سنة		**2. من 25 – أقل من 30 سنة**	
3. من 30 – أقل من 35 سنة		**4. 35 سنة 40 سنة**	
5. 40 سنه فما فوق			

- **الجنسية:**

1. الإمارات		**2. أخرى**	

- **المنطقة السكنية:**

1. المدينة		**2. الأرياف**	

- **المؤهل العلمي:**

1. أقل من الثانوية العامة		**2. ثانوية عامة**	

3. الدبلوم		4. البكالوريوس	
5. الدراسات العليا			

- **الخبرة في مجال الأعمال المنزلية:**

1. اقل من 3 سنوات		2. من 3- أقل من 6 سنوات	
3. من 6- أقل من 9 سنوات		4. 9 سنوات فأكثر	

- **المسمى الوظيفي:**

1. محضر الطعام		2. مساعد محضر الطعام	
3. مسؤول		4. مالك	
1. أخرى			

القسم الثاني: -

أ - سلوك سلامة الغذاء

(يرجى الإشارة إلى مدى موافقتك) على العبارات التالية: -

	النظافة الشخصية للمتعامل مع الأغذية	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة

1	متابعة الحالة الصحية الخاصة بي بشكل يومي أمر مهم، مثل: الحمى، نزلات البرد أو أي اصابة آخرى.					
2	أتحقق من نظافة الملابس الواقية والاحذية قبل بدء العمل في موقع عملي المنزلي (كأسرة منتجة).					
3	يتم غسل اليدين قبل التعامل وتجهيز الأغذية في عملي المنزلي (كأسرة منتجة).					
4	يتم غسل اليدين بعد استخدام دورات المياه، وبعد تحضير الأغذية النيئة مثل اللحوم وقبل تحضير الأغذية الجاهز في عملي المنزلي (كأسرة منتجة).					
5	يتم تغطية الجروح أثناء العمل في عملي المنزلي (كأسرة منتجة).					
	سلامة الأغذية	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
1	يتم استلام الاطعمة من المورد بعد التأكد من استيفاء الشروط الصحية لها وتخزينها مباشرة في الأماكن المناسبة لها.					
2	تتم المراقبة الدورية لدرجة حرارة الثلاجات والمجمدات في عملي المنزلي (كأسرة منتجة) بشكل دوري كل أربع ساعات.					

3	يوجد سجل لدرجات حرارة الثلاجات والمجمدات في عملي المنزلي (كأسرة منتجة).					
4	استخدم المعدات لقياس درجة حرارة الأغذية أثناء عملية الطهي وإعادة التسخين.					
5	يتم تخزين الأغذية النيئة والأغذية المطبوخة بشكل منفصل في الثلاجات، ببيانات موضحة في البطاقة الخارجية للغلاف.					
6	يتم تذويب الأغذية المجمدة حسب الكمية المطلوبة لتحضير.					
7	يتم طهي الأغذية مباشرة بعد التذويب ولا يعاد تجميدها مرة آخرى.					
8	يتم غسل وتعقيم الخضار والفواكه الطازجة قبل الإستخدام بمحاليل كيميائية خاصة ومعتمدة.					
9	يتم وضع بطاقات على الأغذية الجاهزة للأكل وتوضيح تاريخ انتهاء الصلاحية عند تخزينها في الأماكن المخصصة.					
10	يتم الفصل بين العدد والأدوات والمواد الأولية الخام والأغذية الجاهزة للأكل في الأماكن الصحيحة.					
11	ألبس القفازات عند التعامل مع الأطعمة في وقت التحضير.					
12	لا يتم تخزين أو وضع الأغذية أو الأواني على أرضية المطبخ مباشرة لضمان عدم تلوثها.					

	البيئة الداخلية للمطبخ	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
1	يتم وضع ملصقات على المواد الكيميائية للتنظيف والتعقيم وتخزينها في مكان آمن وبعيد عن منطقة تحضير الأغذية.					
2	يتم تنظيف النوافذ وفتحات التهوية لمكافحة الآفات و الحشرات والتأكد من عدم وجود فجوات وشقوق بالجدران والأسقف بشكل يومي.					
3	يتم تنظيف وتعقيم المعدات والأدوات مثل: السكاكين وألواح التقطيع حيث أنه أمر مهم في عملي المنزلي (كأسرة منتجة).					
4	يتم استخدام وحدة الرفوف لتخزين المعدات المعقمة والأواني النظيفة.					
5	يتم عمل صيانة فورية للمعدات المعطلة في عملي المنزلي (كأسرة منتجة).					
6	يتم التأكد من كفاءة عمل المعدات المستخدمة في تحضير الأغذية بشكل دوري في عملي.					
7	يتم التأكد من وجود نظام للشفط والتهوية ويتم صيانته بشكل دوري في مكان عملي.					
8	يتم التحقق ما إذا كانت إضاءة منطقة العمل مناسبة ومتابعتها بشكل صحيح.					
9	يتم تنظيف وصيانة دورات المياه بإنتظام.					

ب- كفاءة التدريب

(يرجى الإشارة إلى مدى موافقتك) على العبارات التالية:-

	ردة الفعل بعد التدريب	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
1	أنا راضٍ عن التدريب في مجال سلامة الغذاء بشكل عام.					
2	أنا متأكد أن التدريب الفعال يمكن أن يساعد في تحسين عملي المنزلي (كأسرة منتجة).					
3	تغطي الدورات التدريبية لسلامة الغذاء مستوى الكفاءة المطلوب في عملي المنزلي (كأسرة منتجة).					
4	يلبي التدريب الخاص بسلامة الغذاء احتياجات عملي المنزلي (كأسرة منتجة).					
5	نجح التدريب الذى حصلت عليه على تغيير سلوكِ في مجال سلامة الغذاء في عملي المنزلي (كأسرة منتجة).					
6	التدريب الذى حصلت عليه في مجال سلامة الغذاء ساعدني على التعليم المستمر في نفس المجال.					

7	أوصى بهذا النوع من التدريب على سلامة الغذاء للآخرين.					
	المعرفة بعد التدريب	**أوافق بشدة**	**أوافق**	**محايد**	**غير موافق**	**غير موافق بشدة**
1	أعتقد أنني أكتسبت المهارات التي احتجتها للتعلم في عملي المنزلي (كأسرة منتجة) من خلال تطبيقها.					
2	أستطيع تطبيق ما تعلمته من دورة سلامة الغذاء على عملي المنزلي (كأسرة منتجة) الخاص بالغذاء.					
3	ساهمت الدورة التدريبية الخاصة بسلامة الغذاء على تعزيز معلوماتي في مجال الغذاء.					
	تأثير الدورة التدريبة على السلوك	**أوافق بشدة**	**أوافق**	**محايد**	**غير موافق**	**غير موافق بشدة**
1	أطبق ما تعلمته في الدورة التدريبة على عملي المنزلي (كأسرة منتجة).					
2	أنا أشعر أن هناك تغيُرات ملحوظة في سلوكيات سلامة الغذاء بعد حضور الدورة التدريبه.					
3	يساعدني التدريب على إزالة العقبات أو التحديات التي تمنعني من استخدام مهارات جديدة وبكفاءة.					

4	يتم تطبيق المهارات الجديدة التي تعلمتها على عملي المنزلي (كأسرة منتجة).					
5	بيئة العمل في عملي المنزلي (كأسرة منتجة) دائماً تساعدني على تطبيق ماتعلمته.					
	النتائج بعد الدورة التدريبية.	**أوافق بشدة**	**أوافق**	**محايد**	**غير موافق**	**غير موافق بشدة**
1	أشعر بتحسن في أدائي بعد استكمال برامج التدريب الخاصة بسلامة الغذاء.					
2	ساعدني التدريب على تقليل عدد الأخطاء، وانجاز العمل بسرعة وكفاءة أكبر.					
3	أنا أوافق أن قلة عدد البرامج التدريبية تحدث فجوات في مهاراتنا.					
4	ساعدني التدريب الخاص بسلامة الغذاء للوصول إلى الهدف في عملي المنزلي (كأسرة منتجة).					
5	ساعدني التدريب على تحقيق الأهداف الخاصة بتنمية قدراتي الشخصية.					

ت- الاتجاهات والمواقف

(يرجى الإشارة إلى مدى موافقتك) على العبارات التالية:-

	المواقف في سلامة الغذاء (عاطفي ، معرفي ، سلوكِ)	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
1	أنا متأكد أن إحدى مسؤوليات وظيفتي هي التعامل مع الطعام بأمان.					
2	معرفة أساسيات سلامة الأغذية مهمة بالنسبة لي في عملي المنزلي (كأسرة منتجة).					
3	أنا متأكد أن التدريب على سلامة الأغذية يزيد معرفتي بسلامة الأغذية والتعامل مع الأغذية.					
4	يتم تدريب جميع موظفينا على النظافة الشخصية بإنتظام في عملي المنزلي (كأسرة منتجة).					
5	أتأكد من سلامة جميع العاملين في عملي المنزلي (كأسرة منتجة).					
6	استخدم المعدات وملابس الحماية الشخصية التي تقلل من خطر تلوث الطعام.					
7	يتم التأكد من عدم إصابة المتعاملين مع الأغذية في عملي المنزلي (كأسرة منتجة) بالجروح.					

8	يتم تخزين الأغذية في مكان مناسب للمحافظة على سلامتها.					
9	بالنسبة لي، معرفة مستوى الخطورة لدرجة الحرارة عند تخزين وتحضير وحفظ وتقديم ونقل الأطعمة، أمر مهم لتقليل مخاطر سلامة الأغذية.					
10	لا يتم إعادة تجميد الأطعمة المذابة.					
11	يتم التأكد من القراءات الصحيحة لمقاييس درجة حرارة (البرادات والمجمدات) بإنتظام.					
12	أنا على استعداد لتصحيح الممارسات الخاطئة التي كنت أقوم بها في التعامل مع الطعام والتي تؤثر على سلامته.					
13	أنا متأكد أن إعداد الطعام بطريقة سليمة له الأثر الكبير في لذة الطعام.					
14	أنا متأكد أنه يمكن للأمراض أن تنتقل للغذاء وتؤثر على صحة متناوليه.					

ث- الولاء في العمل

(يرجى الإشارة إلى مدى موافقتك) على العبارات التالية:-

العاطفة في العمل	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة

1	سأكون سعيدًا جدًا لقضاء بقية حياتي المهنية في عملي المنزلي (كأسرة منتجة).					
2	استمتع بمناقشة عملي المنزلي (كأسرة منتجة) مع البيئة المجتمعية المحيطة بي.					
3	من المهم جداً لي مواجهة التحديات في عملي المنزلي (كأسرة منتجة) وتحويلها إلى فرص.					
4	أعتقد أنه يمكنني أن أستغني عن عملي المنزلي (كأسرة منتجة) الحالي في مجال الغذاء وأرتبط بعمل في مجال آخر.					
5	وجودي في عملي المنزلي (كأسرة منتجة) هو جزء مهم بالنسبة لي.					
6	علاقتي بعملي المنزلي (كأسرة منتجة) قوية جداً.					
7	لدي انتماء قوي لعملي المنزلي (كأسرة منتجة).					
	الإستمرار في العمل	**أوافق بشدة**	**أوافق**	**محايد**	**غير موافق**	**غير موافق بشدة**
1	أنا راض عن عملي المنزلي (كأسرة منتجة) وليس لدي نيةُ للتوقف.					

2	أنا مستعد لتطوير عملي المنزلي (كأسرة منتجة).					
3	ستتأثر حياتي إذا قررت أن أتوقف عن عملي المنزلي (كأسرة منتجة) الآن.					
4	سيكون مكلفًا للغاية بالنسبة لي ترك عملي المنزلي (كأسرة منتجة) في هذه الفترة.					
5	أرغب في أستمرار عملي المنزلي (كأسرة منتجة).					
6	أعتقد أن واحداً من العواقب الخطيرة لترك عملي المنزلي (كأسرة منتجة) هو ندرة البدائل المتاحة في هذه الفترة.					
7	أنا متأكد أن أحد الأسباب الرئيسية لمواصلة عملي المنزلي (كأسرة منتجة) بالنسبة لي هو سهولة اجراءات هذه المشاريع.					
	المقياس المعياري للإلتزام	**أوافق بشدة**	**أوافق**	**محايد**	**غير موافق**	**غير موافق بشدة**
1	أعتقد أن ترك العاملين لدي لوظائفهم والانتقال إلى عمل منزلي آخر سيؤثر سلباً على كفاءة مشروعي.					

2	أعتقد أن الاخلاص في العمل من العوامل الرئيسية للنجاح.					
3	أعتقد أن الاستقرار في العمل المنزلي أمر مهم جداً للنجاح وزيادة الإنتاجية.					
4	أنا أشعر بالإلتزام الاخلاقي في عملي المنزلي (كأسرة منتجة).					
5	إذا سمحت لي الفرصة لتطوير عملي المنزلي (كأسرة منتجة) لعمل تجاري خارج المنزل سأستثمرها.					
6	دائماً أشعر بقيمة عملي المنزلي (كأسرة منتجة).					
7	اعتقد أن تحديد الهدف من العمل المنزلي هو أمر مهم بالنسبة لي.					
8	اعتقد أن العمل في المنزل (كأسرة منتجة) أفضل من وجود شركة منشآه تجارية.					

ج- ثقة الموظفين في العمل

(يرجى الإشارة إلى مدى موافقتك) على العبارات التالية:-

الإيمان بنوايا الزملاء	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة

1	إذا واجهت صعوبات في العمل، أعلم أن زملائي سيحاولون مساعدتي.					
2	أنا على ثقة بأنني سأحصل على الدعم من قبل العاملين في عملي المنزلي (كأسرة منتجة) عند الحاجة.					
3	ثقتي بالعاملين (فريق عملي أو زملائي كبيرة) معي كبيرة.					
	الإيمان بنوايا في العمل	أوافق بشدة	أوافق	محايد	غير موافق	غير موافق بشدة
1	الإدارة في عملي المنزلي (كأسرة منتجة) تتقبل وجهات النظر والملاحظات من العملاء الداخليين والخارجيين.					
2	يتم تطبيق بعض اقتراحات الموظفين والمتعاملين التي تساهم في تطوير عملي المنزلي (كأسرة منتجة).					
3	يتم تحسين أداء الموظفين ذوي الأداء المتدني بإشراكهم في الدورات التدريبية.					

شكراً جزيلاً لتعاونكم

APPENDIX 3 REFERENCES FOR QUESTIONNAIRE:

Food Safety Behaviour	
Dimension	**Reference**
Personal Hygiene	(Rosmawati et al. 2015)
1) I check my self-health condition and personal hygiene practices (fever, diarrhoea, and injury) every day before starting the working day in my business.	

2) I check the cleanness of my clothes, hair restraints, and shoes before I start work in my business. 3) I wash my hands before I start handling food. 4) In my business, I wash my hands when returning from the toilet, after preparing raw meats, and before preparing ready-to-eat foods. 5) I cover small cuts on my fingers with plaster before I start my work.	(Park, Kwak & Chang 2010).
Food Hygiene	
1) When I receive food right after delivery, I store them in the storage area after removing their packaging. 2) I check the temperature of frozen-refrigerated foods, and if there is a problem, I reject those foods. 3) I check the temperature of the refrigerators and freezers in my business every four hours. 4) I record the temperature of refrigerators and freezers control in my business. 5) Using a thermometer to find out the temperature of foods in cooking and reheating processes is important to me. 6) I think storing raw food and cooked foods separately in refrigerators and freezers is important. 7) I think thawing food in a refrigerator is important. 8) I cook food immediately after it has thawed and do not continue to store it in the refrigerator. 9) I think washing and sanitising fresh vegetables and fruits before use is important. 10) I believe labelling foods with use-by dates when storing ready-to-eat foods and processed foods is important. 11) I believe in using separate equipment and supplies for preparing raw food and ready-to-eat food.	

12) I think handling ready-to-eat foods with gloves is important. 13) I believe in not putting foods or utensils directly on the kitchen floor.	
Environmental Hygiene	
1) I believe in labelling, cleaning, and sanitising chemicals and storing them in a safe place away from foods. 2) I screen all windows and vents for pests and verify if there are gaps and cracks in walls and ceilings every day in my business. 3) I believe cleaning and sanitising knives, cutting boards, and wiping cloths is important in my business. 4) I believe in safely cleaning and sanitising equipment and utensils before storing them on shelving units. 5) I believe in verifying that the plumbing system is properly installed and maintained in my business. 6) I check that the equipment and facilities work well and maintain them properly in my business. 7) I believe in verifying that heat and water vapour in the kitchen are removed immediately through a hood exhaust system, and I maintain it properly. 8) I believe in verifying that the illumination of the working area is appropriate and managed properly in my business. 9) I believe it is important to clean and maintain toilet facilities regularly.	

Training Effectiveness

Dimensions	Reference
Reaction	(Juozitis 2019)
1) I am satisfied with my training in food safety overall. 2) I think effective training can be used in my business. 3) The food safety courses cover the right proficiency level which is needed in my business. 4) Food safety training addresses the needs of my business. 5) I believe food safety training has improved the running of my business. 6) I believe that food safety training motivates me to pursue continuance learning. 7) I can recommend this kind of food safety training to others.	
Learning	
1) I believe I have gained the skills I need for my business. 2) I believe I can apply what I learned to my food-based business? 3) I think the food safety behaviour training course increases my ability to learn.	
Behaviour	
1) I use what I learned in training in my daily work. 2) I believe that there are noticeable changes in my performance after training. 3) I think training helps eliminate obstacles preventing me from using my new skills efficiently. 4) I felt supported and motivated to use the new skills I learned in my business. 5) I think the work environment will help me use what I have learned.	

Results	
1) I believe that I performed better after training. 2) I believe I now make fewer errors than I did before training, and I solve problems more quickly and efficiently. 3) I think the training programmes reduced any skill gaps in my business. 4) I think the training helped me to reach my goals. 5) I believe that training helped me achieve the personal development goals in my business.	

Attitude	
Dimension	**Reference**
Food Safety Attitude (Emotional, Cognitive, Behavioural)	
1) One of my job responsibilities is handling food safely. 2) I believe food safety knowledge is important to me. 3) I think participating in food safety training will contribute to my food safety and food-handling knowledge. 4) I think employers should train staff on personal hygiene regularly. 5) Food handlers should not come to work when sick. 6) I believe personal protective equipment and clothes reduces the risk of food contamination. 7) I think food handlers with wounds or cuts on their hands should not handle foods. 8) I believe proper food storage is crucial to food safety. 9) Knowing the temperature danger zone is vital to reduce food safety risks. 10) Defrosted foods should not be frozen more than once.	(Al-Kandari 2019)

11) I think checking the temperature settings of chillers or freezers regularly is necessary. 12) I am ready to correct any wrong food-handling practices that I have been doing. 13) I believe preparing safe food takes precedence over preparing tasty food. 14) Foodborne diseases are a serious issue.	

Commitment	
Dimensions	**Reference**
Affective	(Jaros 2007)
1) I would be happy to spend the rest of my career with this home-based business. 2) I enjoy discussing my home-based business with people outside it. 3) I really feel as if the problems of this home-based business are my own. 4) I think that I could easily become as attached to another home-based business as I am to this one. 5) I do not feel like part of the family at my home-based business. 6) I do not feel emotionally attached to this home-based business. 7) This home-based business has a great deal of personal meaning for me. 8) I do not feel a strong sense of belonging to my home-based business.	
Continuance	

1) I am not afraid of what might happen if I quit my job without having another one lined up. 2) It would be hard for me to leave my home-based business right now, even if I wanted to. 3) Too much in my life would be disrupted if I decided I wanted to leave my home-based business now. 4) It would not be too costly for me to leave my home-based business now. 5) Right now, staying with my home-based business is a matter of necessity as much as desire. 6) I feel that I have too few options to consider leaving this home-based business. 7) One of the few serious consequences of leaving this home-based business would be the scarcity of available alternatives. 8) One of the major reasons I continue to work for this home-based business is that leaving would require considerable personal sacrifice. Another home-based business may not match the overall benefits I have here.	
Normative	
1) I think that people these days move from company to company too often. 2) I do not believe that a person must always be loyal to his or her home-based business. 3) Jumping from home-based business to home-based business does not seem at all unethical to me. 4) One of the major reasons I continue to work for this home-based business is that I believe that loyalty is important and, therefore, feel a sense of moral obligation to remain. 5) If I got another offer for a better job elsewhere, I would not feel it was right to leave my home-based business. 6) I was taught to believe in the value of remaining loyal to one home-based business.	

7) Things were better in the days when people stayed with one home-based business for most of their careers. 8) I do not think wanting to be a company man or company woman is sensible anymore.	

Employees trust in the workplace	
Dimensions	**Reference**
Faith in intentions of peers	(Matzler & Renzl 2006)
1) If I faced challenges at work, I know my colleagues would try and help me out. 2) I could trust the people I work with to lend me a hand if I needed it. 3) Most of my colleagues can be relied upon to do as they say they will do.	
Faith in intentions management	
1) Management at my firm is sincere in its attempts to allow employees' perspectives. 2) I feel quite confident that the firm will always try to treat me fairly. 3) Our management would be quite prepared to gain an advantage by deceiving the employees.	

APPENDIX 4 TRAILS OF CROSS-LOADED ITEMS:

1) EFA for the dependent variable, Hygiene Behaviour

The results of seven EFA's conducted on the dependent variable are presented in the main body of the thesis, and the results of the between-trials are presented here for convenience.

Trial (2) removed EH3 and FH6

Rotated Factor Matrix[a]

	Factor		
	1	2	3
PH3	.892		
PH5	.764		
PH4	.758		
FH1	.674		
PH1	.665		
FH7	.627		.491
PH2	.583	.448	
FH12	.509		.443
EH9		.762	
EH6		.749	
EH8		.741	
EH5	.420	.669	
EH1		.628	.383
EH7		.584	.433
EH4	.373	.568	.350
EH2		.567	.497
FH10	.456	.506	.461
FH11		.465	.376
FH2		.462	.458
FH8			.687
FH3			.656
FH4			.623
FH9		.359	.598
FH5	.468		.505

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

Trial (3) removed FH 12

Rotated Factor Matrix[a]

	Factor		
	1	2	3
EH6	.760		
EH8	.755		
EH9	.752		
EH5	.689	.418	
EH1	.637		.364
EH7	.609		.396
EH2	.594		.457
EH4	.586	.369	
FH10	.535	.454	.421
FH11	.480		.354
FH2	.471		.459
PH3		.894	
PH5		.761	
PH4		.759	
FH1	.436	.676	
PH1		.663	
FH7		.621	.450
PH2	.437	.586	
FH8			.707
FH3			.684
FH4			.635
FH9	.369		.604
FH5	.367	.469	.480

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

Trial (4) removed FH2, FH5, and FH10

Rotated Factor Matrix[a]

	Factor		
	1	2	3
EH8	.767		
EH6	.757		

EH9	.746		
EH5	.703	.417	
EH1	.642		.363
EH7	.630		.373
EH2	.606		.425
EH4	.594	.370	
FH11	.493		
PH3		.890	
PH5		.767	
PH4		.760	
FH1	.437	.682	
PH1		.668	
FH7		.621	.398
PH2	.432	.588	
FH8			.720
FH3			.689
FH4			.659
FH9	.375		.614

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

Trial (5) removed PH2

Rotated Factor Matrix[a]

	Factor		
	1	2	3
PH1		.657	
PH3		.879	
PH4		.759	
PH5		.774	
FH1	.449	.680	
FH3			.688
FH4			.656
FH7		.626	.375

FH8			.727
FH9	.383		.611
FH11	.495		
EH1	.645		.360
EH2	.613		.420
EH4	.603	.366	
EH5	.719	.410	
EH6	.760		
EH7	.649		.351
EH8	.781		
EH9	.743		

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

Trial (6) removed
Fh7

Rotated Factor Matrix[a]

	Factor		
	1	2	3
PH1		.667	
PH3		.858	
PH4		.767	
PH5		.778	
FH1	.448	.682	
FH3			.688
FH4			.669
FH8			.718
FH9	.382		.620
FH11	.491		
EH1	.639		.373
EH2	.624		.411
EH4	.602	.363	
EH5	.729	.395	
EH6	.749		

EH7	.668		
EH8	.795		
EH9	.737		

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 6 iterations.

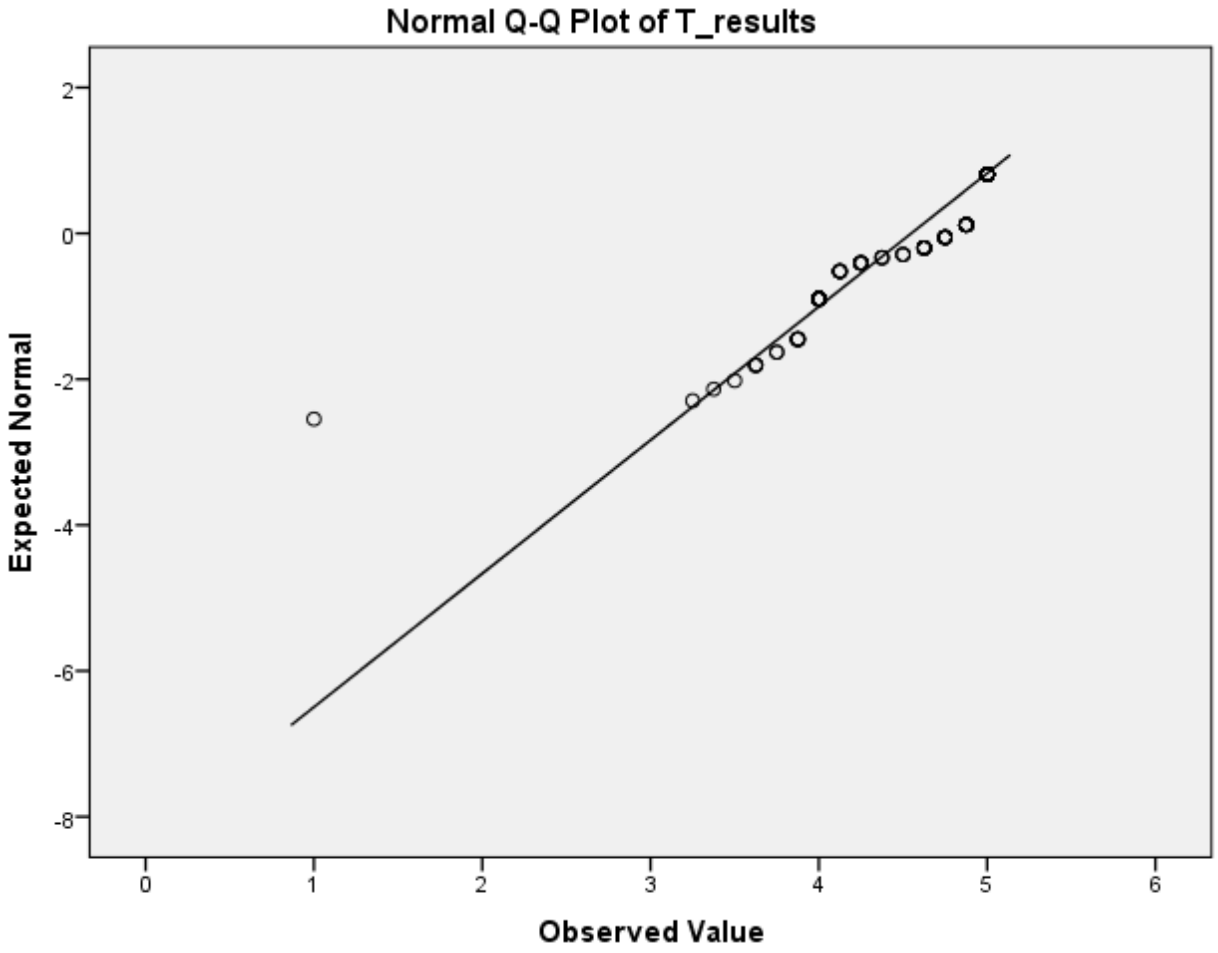
2) The Correlation between environmental hygiene items and food hygiene items

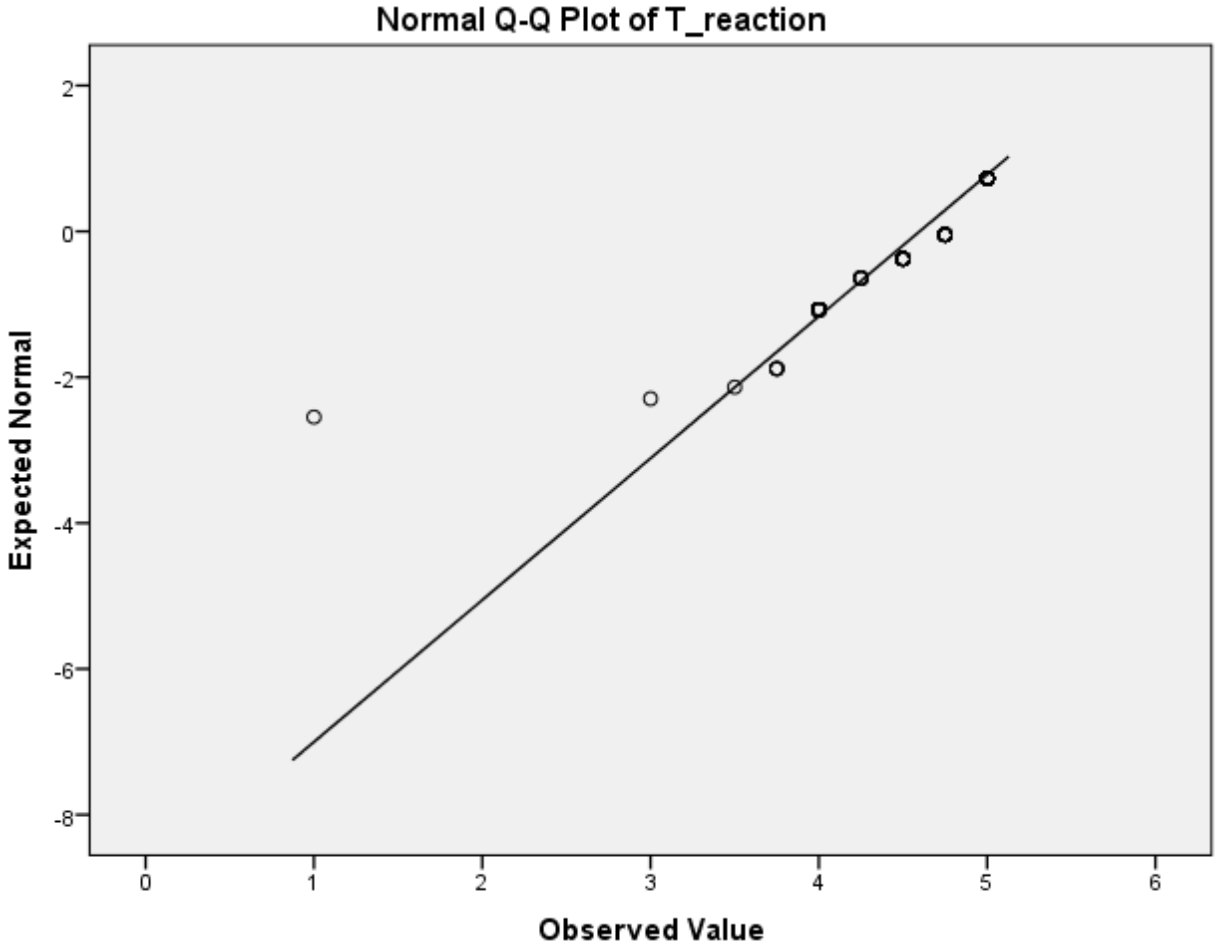
Person Correlations													
		ID	FH3	FH8	FH9	EH1	EH2	EH4	EH5	EH6	EH7	EH8	EH9
ID	Pearson Correlation	1	.085	.129	.029	-.058	-.027	-.149*	-.156*	-.084	-.148*	-.128	-.099
	Sig. (2-tailed)		.252	.082	.696	.437	.720	.044	.036	.258	.045	.085	.181
	N	183	183	183	183	183	183	183	183	183	183	183	183
FH3	Pearson Correlation	.085	1	.551**	.529**	.465**	.444**	.340**	.423**	.394**	.433**	.423**	.327**
	Sig. (2-tailed)	.252		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
FH8	Pearson Correlation	.129	.551**	1	.564**	.352**	.386**	.386**	.317**	.390**	.344**	.285**	.237**
	Sig. (2-tailed)	.082	.000		.000	.000	.000	.000	.000	.000	.000	.000	.001
	N	183	183	183	183	183	183	183	183	183	183	183	183
FH9	Pearson Correlation	.029	.529**	.564**	1	.599**	.566**	.486**	.550**	.548**	.569**	.458**	.445**
	Sig. (2-tailed)	.696	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000

	N	183	183	183	183	183	183	183	183	183	183	183	183
EH1	Pearson Correlation	-.058	.465**	.352**	.599**	1	.679**	.569**	.637**	.656**	.634**	.627**	.668**
	Sig. (2-tailed)	.437	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH2	Pearson Correlation	-.027	.444**	.386**	.566**	.679**	1	.669**	.663**	.607**	.707**	.628**	.584**
	Sig. (2-tailed)	.720	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH4	Pearson Correlation	-.149*	.340**	.386**	.486**	.569**	.669**	1	.677**	.690**	.638**	.594**	.607**
	Sig. (2-tailed)	.044	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH5	Pearson Correlation	-.156*	.423**	.317**	.550**	.637**	.663**	.677**	1	.786**	.685**	.727**	.665**
	Sig. (2-tailed)	.036	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183

EH6	Pearson Correlation	-.084	.394**	.390**	.548**	.656**	.607**	.690**	.786**	1	.624**	.682**	.662**
	Sig. (2-tailed)	.258	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH7	Pearson Correlation	-.148*	.433**	.344**	.569**	.634**	.707**	.638**	.685**	.624**	1	.750**	.591**
	Sig. (2-tailed)	.045	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH8	Pearson Correlation	-.128	.423**	.285**	.458**	.627**	.628**	.594**	.727**	.682**	.750**	1	.741**
	Sig. (2-tailed)	.085	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	183	183	183	183	183	183	183	183	183	183	183	183
EH9	Pearson Correlation	-.099	.327**	.237**	.445**	.668**	.584**	.607**	.665**	.662**	.591**	.741**	1
	Sig. (2-tailed)	.181	.000	.001	.000	.000	.000	.000	.000	.000	.000	.000	
	N	183	183	183	183	183	183	183	183	183	183	183	183
*. Correlation is significant at the 0.05 level (2-tailed).													
**. Correlation is significant at the 0.01 level (2-tailed).													

3) P-P plots for the research factors

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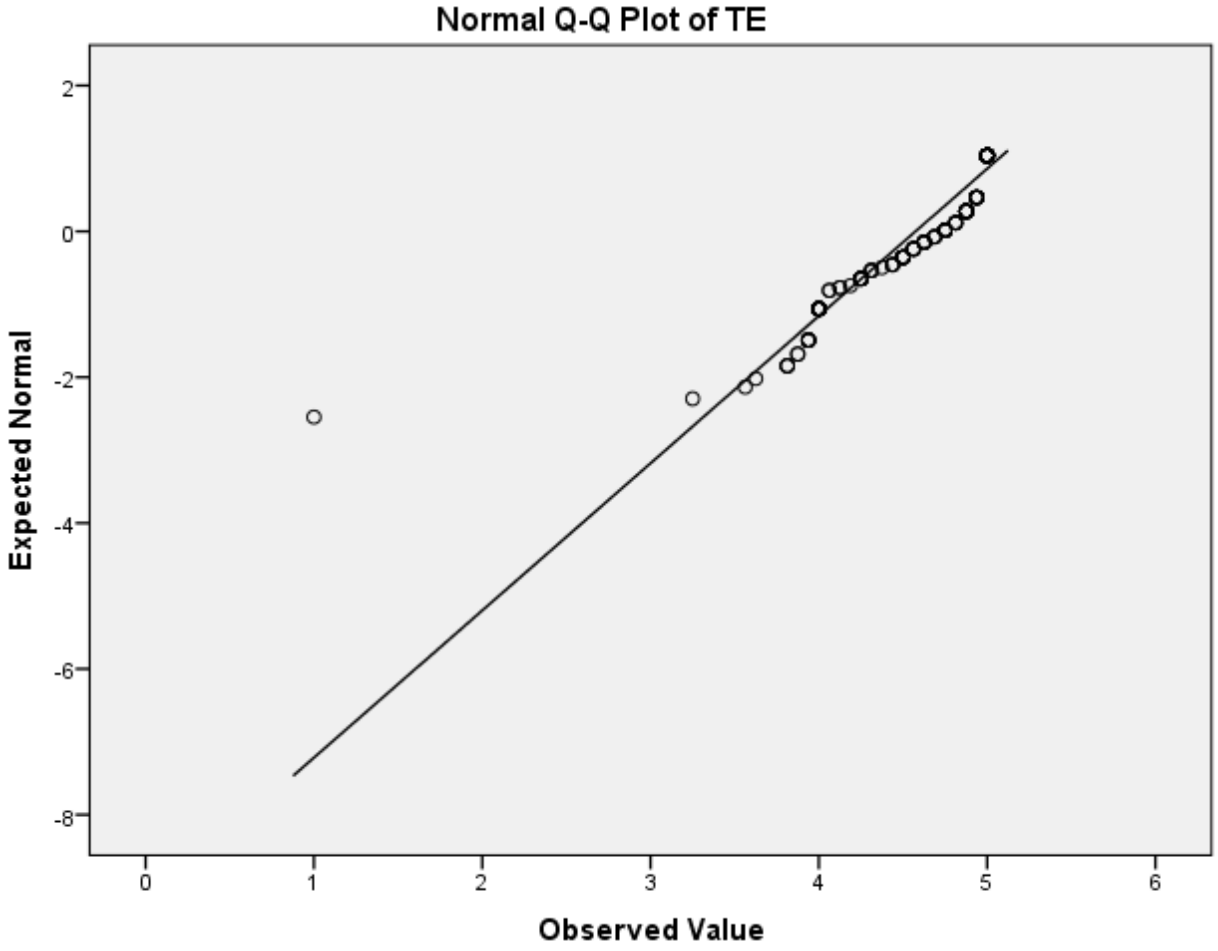
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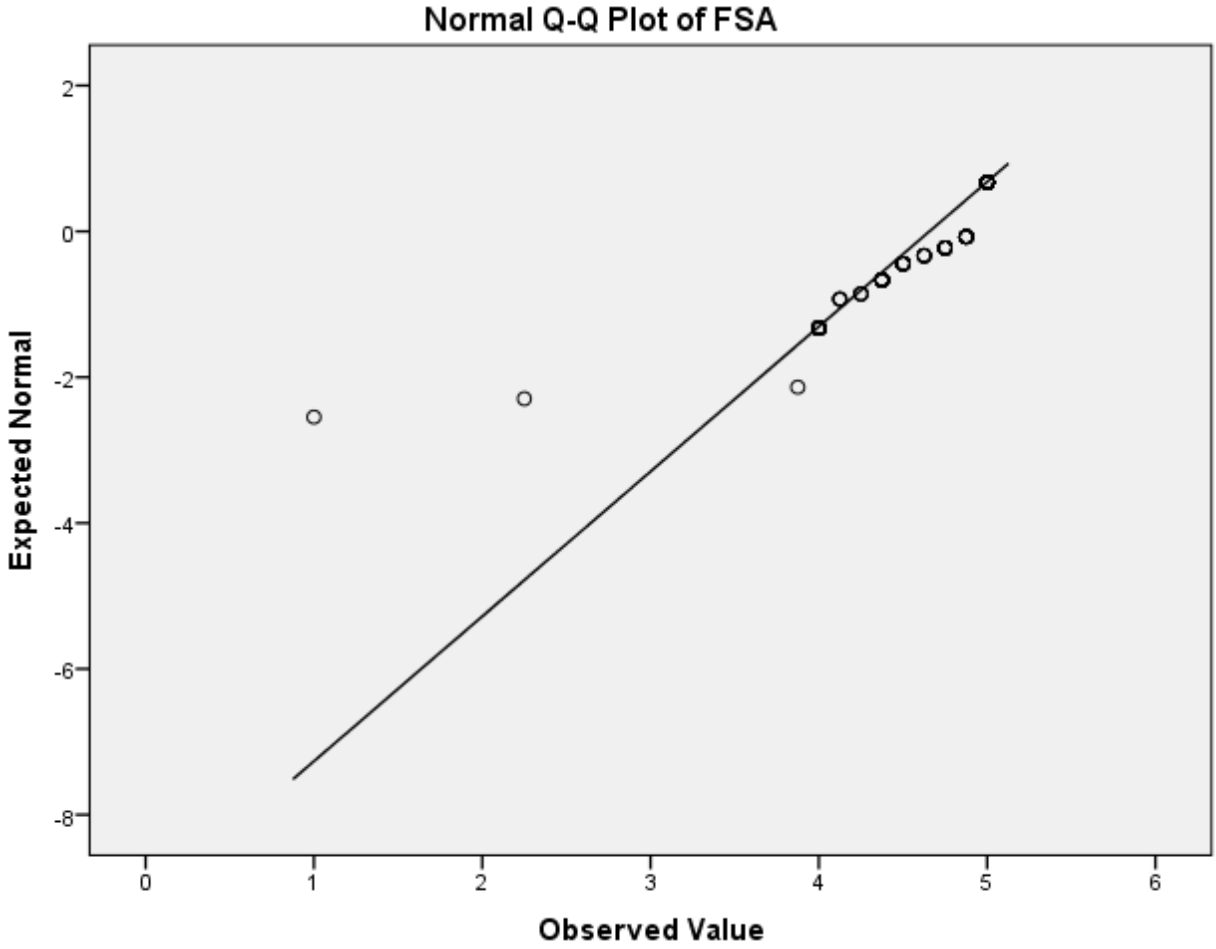
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1
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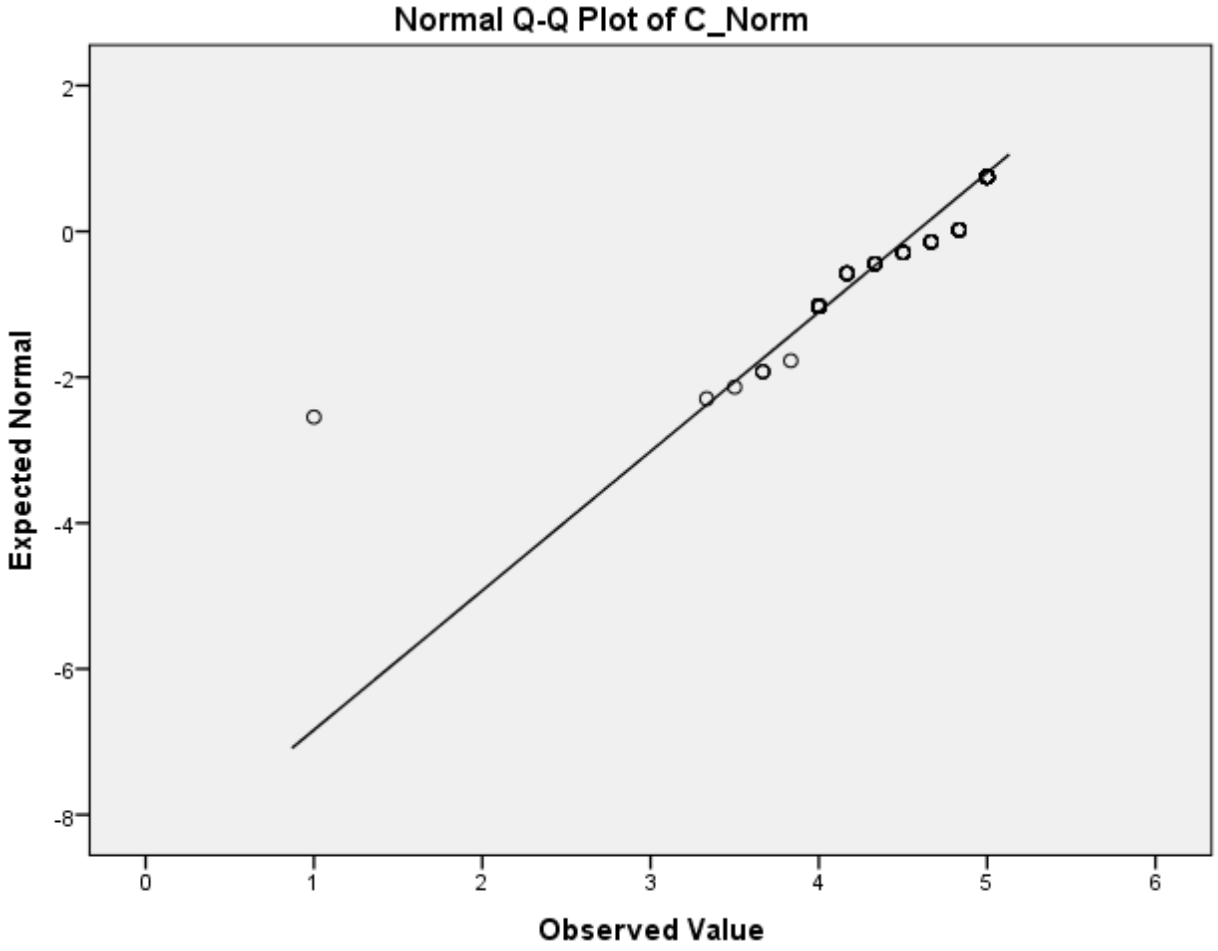
5
6
Observed Value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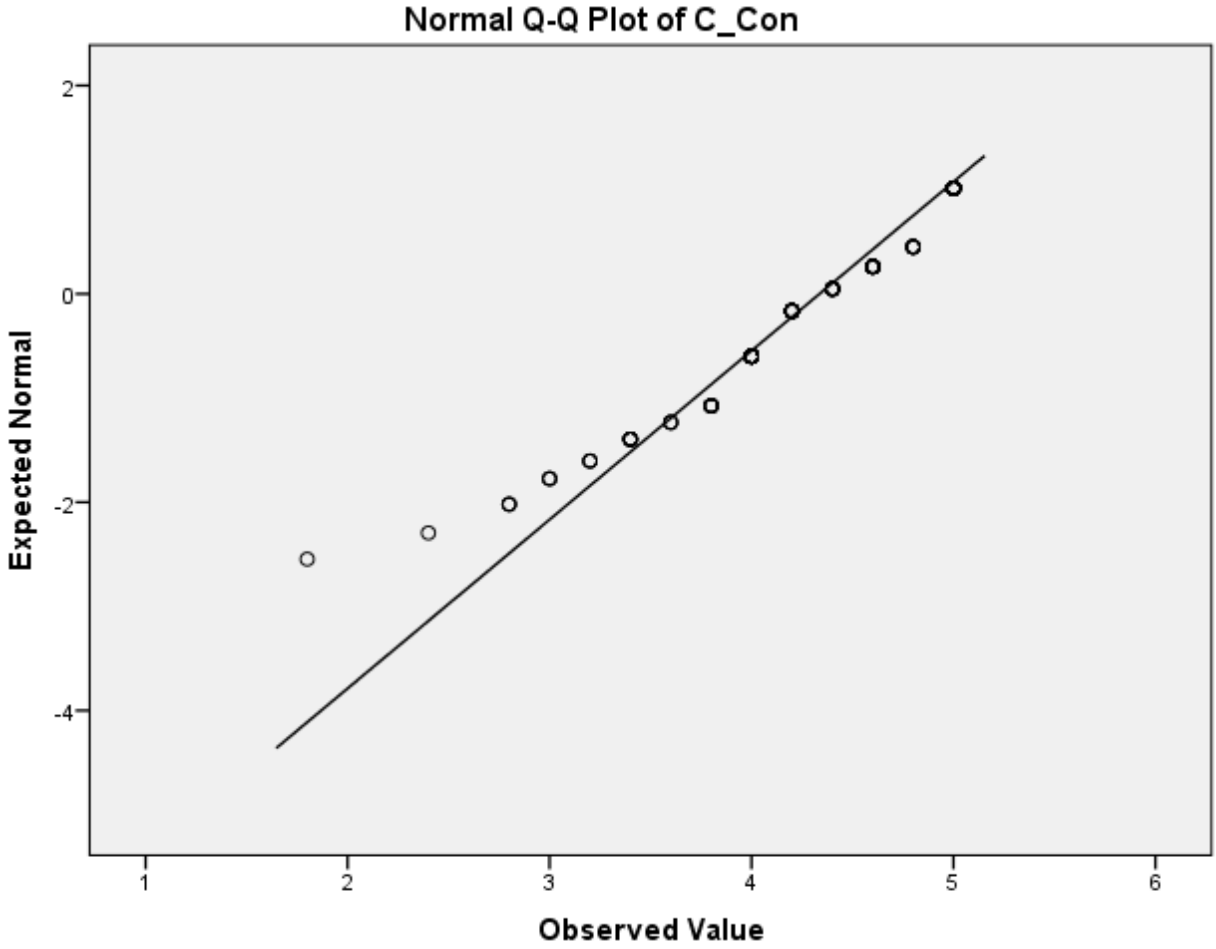
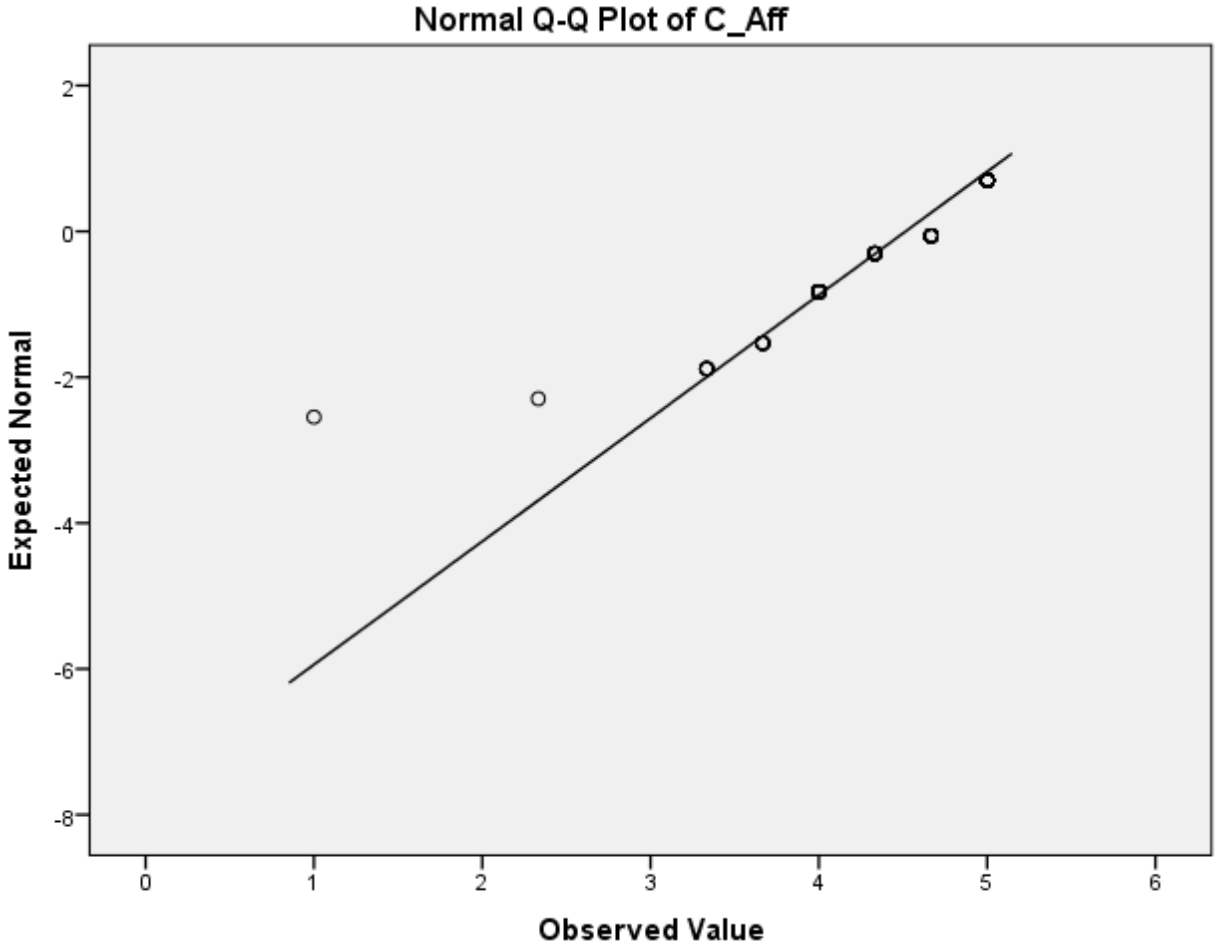
1
2
3
4
5
6


Normal Q-Q Plot of C_Con
Expected Normal
2
0
-2
-4
1
2
3
4
5
6
Observed Value


Normal Q-Q Plot of C_Aff
Expected Normal
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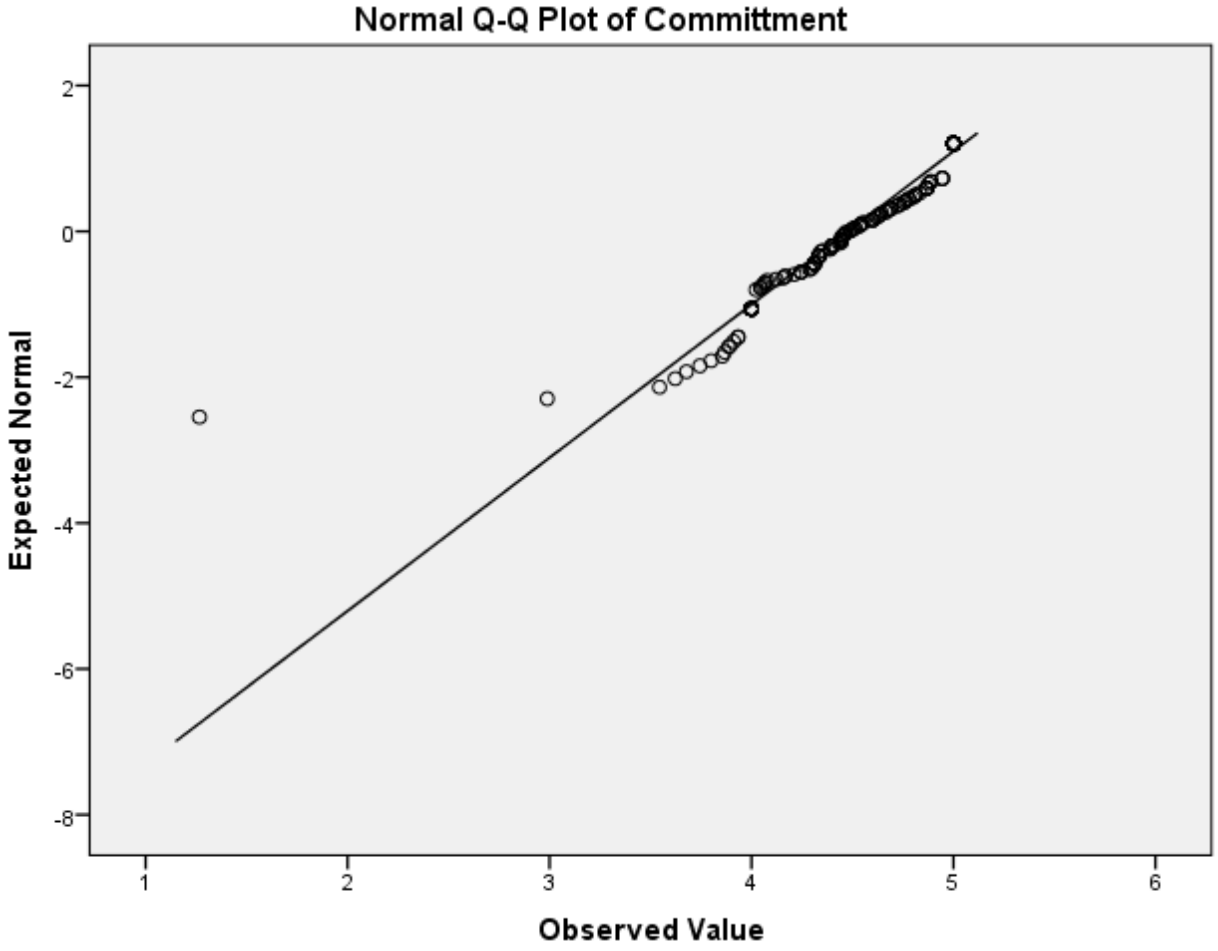
0
-2
-4
-6
-8
0
1
2
3
4
5
6
Observed Value


Normal Q-Q Plot of Committment
Expected Normal
Observed Value
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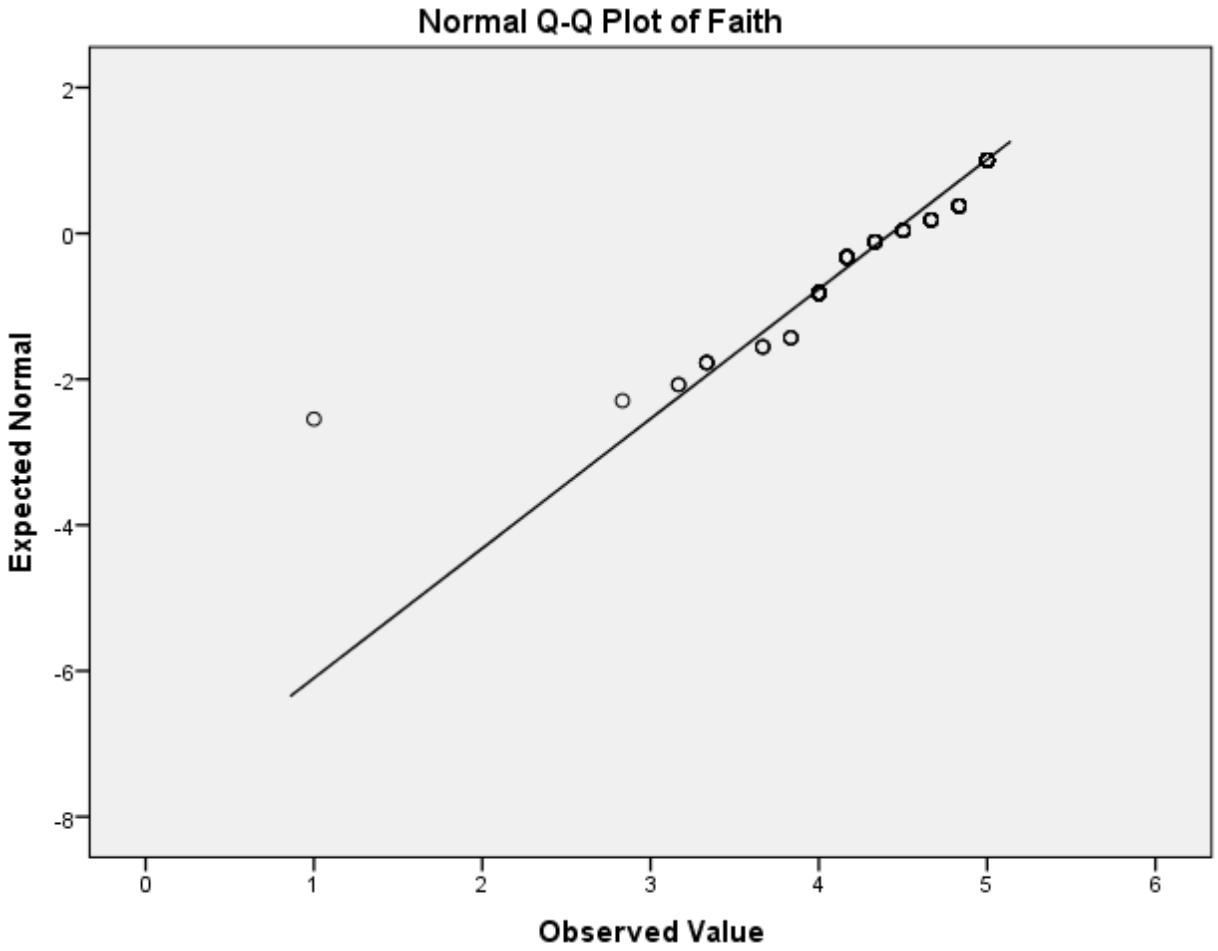
0
-2
-4
-6
-8
1
2
3
4
5
6



APPENDIX 5 RESPONDENT DEMOGRAPHIC CHARACTERISTICS

characteristics	Percentage	characteristics	Percentage
Male	27.9	Less than 3 Years	27.9
Female	72.1	3 – Less than 6 Years	19.1
20 – Less than 25 Years	7.1	6 – Less than 9 Years	12.6

25 – Less than 30 Years	13.7	9 Years and Above	40.4
30 – Less than 35 Years	19.7	Food handler	8.7
35 – Less than 40 Years	33.3	Assistant Food handler	4.4
40 Years and Above	26.2	Manager	13.7
Emiratis	89.6	Owner	37.2
Others	10.4	others	36.1
Urban	75.4		
Rural	24.6		
Below high school	5.5		
High school	21.9		
Diploma	17.5		
Bachelor	42.1		
Postgraduates	13.1		

APPENDIX 6 PILOT STUDY RESULTS

Cronbach-alpha results for the pilot study		
Research Variable	**Cronbach-alpha**	**Number of questions**
Independent Variable (Food safety Behaviour)	0.899	26
Training effectiveness	0.969	20
Reaction (R)	0.935	7
Behavioural (B)	0.852	5
Learning (L)	0.911	3

Results (RS)	0.873	5
Food Safety Attitude	0.942	14
Commitment	0.893	22
Affective	0.662	7
Normative	0.730	8
Continuance	0.828	7
Employee Trust	0.863	6
Faith in peers	0.850	3
Faith in Management	0.550	3

Descriptive Statistics for the pilot study

	N	Minimum	Maximum	Mean	Std. Deviation
Independent Variable (Food safety Behaviour)					
PH1	30	4	5	4.93	.254
PH2	30	3	5	4.90	.403
PH3	30	5	5	5.00	.000
PH4	30	2	5	4.77	.774
PH5	30	5	5	5.00	.000
FH1	30	4	5	4.90	.305
FH2	30	3	5	4.67	.606
FH3	30	1	5	4.23	.971
FH4	30	1	5	4.00	1.050
FH5	30	3	5	4.70	.535
FH6	30	4	5	4.70	.466
FH7	30	4	5	4.80	.407
FH8	30	1	5	4.23	.971
FH9	30	3	5	4.53	.681

FH10	30	4	5	4.70	.466
FH11	30	3	5	4.77	.568
FH12	30	4	5	4.90	.305
EH1	30	4	5	4.80	.407
EH2	30	3	5	4.57	.626
EH3	30	4	5	4.73	.450
EH4	30	3	5	4.70	.535
EH5	30	3	5	4.70	.535
EH6	30	3	5	4.60	.621
EH7	30	2	5	4.57	.679
EH8	30	3	5	4.73	.521
EH9	30	4	5	4.80	.407
Training effectiveness	N	Minimum	Maximum	Mean	Std. Deviation
R1	30	2	5	4.63	.718
R2	30	3	5	4.77	.504
R3	30	3	5	4.73	.583
R4	30	3	5	4.73	.583
R5	30	3	5	4.57	.568
R6	30	3	5	4.57	.626
R7	30	3	5	4.67	.547
L1	30	3	5	4.60	.621
L2	30	3	5	4.73	.521
L3	30	2	5	4.70	.702
B1	30	3	5	4.67	.547
B2	30	2	5	4.57	.679
B3	30	3	5	4.70	.535
B4	30	3	5	4.73	.521

B5	30	3	5	4.57	.568
RS1	30	3	5	4.60	.563
RS2	30	3	5	4.67	.547
RS3	30	2	5	4.30	.877
RS4	30	3	5	4.60	.621
RS5	30	3	5	4.60	.621
Food Safety Attitude					
FSA1	30	4	5	4.80	.407
FSA2	30	4	5	4.90	.305
FSA3	30	4	5	4.77	.430
FSA4	30	4	5	4.83	.379
FSA5	30	3	5	4.80	.484
FSA6	30	4	5	4.83	.379
FSA7	30	4	5	4.73	.450
FSA8	30	4	5	4.80	.407
FSA9	30	4	5	4.73	.450
FSA10	30	4	5	4.80	.407
FSA11	30	2	5	4.60	.675
FSA12	30	4	5	4.70	.466
FSA13	30	4	5	4.73	.450
FSA14	30	3	5	4.63	.556
Commitment					
AFF1	30	1	5	4.47	1.008
AFF2	30	4	5	4.70	.466
AFF3	30	4	5	4.60	.498
AFF4	30	2	5	3.03	1.159
AFF5	30	3	5	4.57	.568

AFF6	30	2	5	4.63	.718
AFF7	30	4	5	4.80	.407
Con1	30	3	5	4.57	.679
Con2	30	4	5	4.77	.430
Con3	30	2	5	4.13	.973
Con4	30	2	5	4.03	1.033
Con5	30	3	5	4.53	.571
Con6	30	2	5	4.07	.980
Con7	30	1	5	4.27	.907
Norm1	30	1	5	4.13	1.137
Norm2	30	4	5	4.90	.305
Norm3	30	4	5	4.87	.346
Norm4	30	4	5	4.90	.305
Norm5	30	2	5	4.60	.724
Norm6	30	4	5	4.73	.450
Norm7	30	4	5	4.80	.407
Norm8	30	2	5	4.23	.935
Employee Trust					
FP1	30	3	5	4.33	.802
FP2	30	3	5	4.50	.630
FP3	30	3	5	4.57	.568
FM1	30	4	5	4.57	.504
FM2	30	3	5	4.53	.571
FM3	30	2	5	4.67	.661
Valid N (listwise)	30				